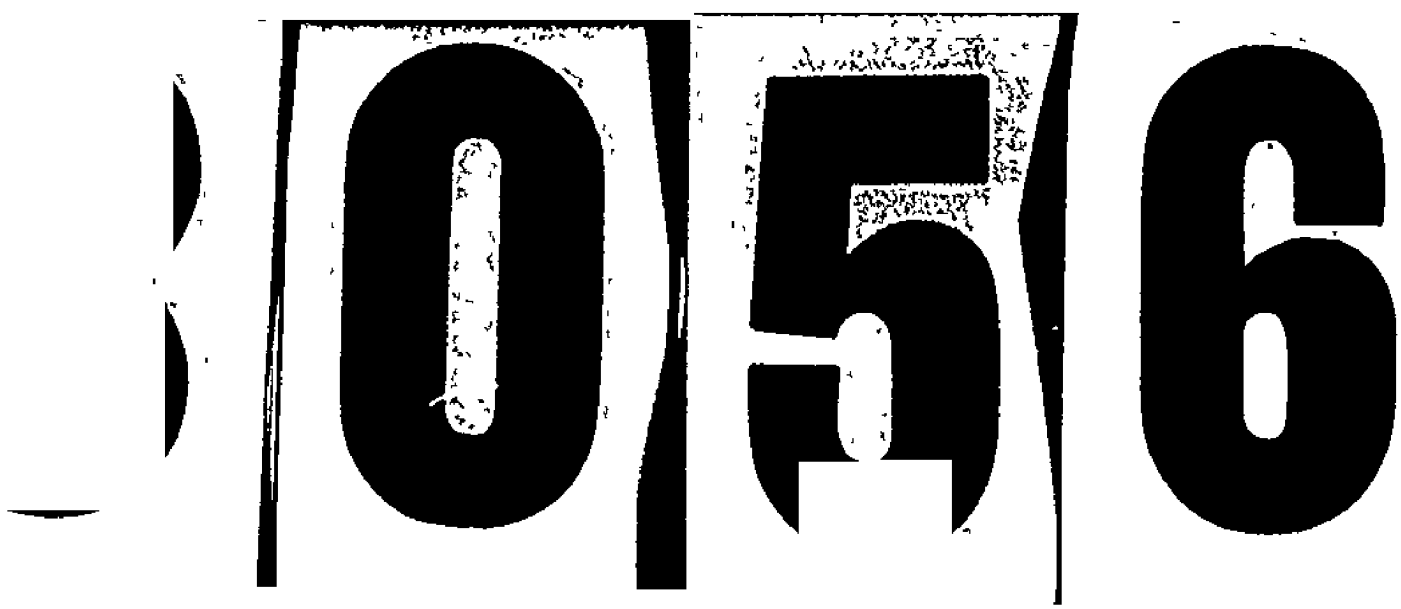

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COLLEGE OF EDUCATION

THE DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF A COMPUTER SUPPORT SYSTEM FOR THE MANAGEMENT OF COMPETENCY-BASED INDIVIDUALIZED PROGRAMS

by
HERBERT FREDERICK REBHUN

A dissertation submitted to the Division of Instructional Design and Personnel Development, Program of Instructional Design and Development, in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Approved:

Professor directing Dissertation

December, 1974

Dean, College of Education

THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION OF A COMPUTER SUPPORT SYSTEM FOR THE MANAGEMENT OF COMPETENCY-BASED INDIVIDUALIZED PROGRAMS

(Publication No.)

Herbert Frederick Rebhun, Ph.D.
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Major Professor: Walter Dick

The primary objective of this study was the design, development, implementation and evaluation of an In-Course Management Information System (ICMIS). The system was designed to meet the data management needs within a competency-based educational system. Essentially, the results of the evaluation indicated that such a system was successfully developed.

The four major components of the study were: (a) the identification of a course instructor's information needs; (b) the design of ICMIS; (c) the implementation of ICMIS; and (d) the evaluation of ICMIS.

Identification of Information Needs

To determine what information was needed by potential users a Handbook of Procedures for a hypothetical system was developed. The Handbook described a number of potential features of an in-course management system. Five faculty members in the College of Education at Florida State

University agreed to participate in the design and evaluation of the ICMIS. From interactions between the faculty member and the Course Information Manager (CIM), the types of information needs were identified.

System Design

On the basis of the course instructor's information needs, fifteen computer programs were developed and implemented and appropriate data input forms were designed. The procedures for using the system were also documented.

The basic computer reports in the system were (a) Student Course Progress Reports which printed the latest status of students with regard to their completion of various learning tasks; (b) Resource Utilization Reports which provided feedback on the value and accessability of the instructional resources; (c) Attitude Reports which provided student opinions of various course activities during the past week; and (d) Field Profile Reports that provided a compilation of various rating reports concerning a student intern's weekly performance.

System Implementation

The implementation of the ICMIS occured during the Spring Quarter, 1974. The system was used by 106 students in both undergraduate and graduate courses. These courses took place both on-campus and in a public school.

System Evaluation

Three separate evaluation questionnaires were designed to obtain the opinions of the various ICMIS users. Questionnaires were sent to all

students, faculty, and public school teachers involved in all courses. In addition, costing data was gathered from personnel time charts and from cost data provided on print-outs from the computer.

The analysis of the feedback from the users indicated a favorable attitude towards the ICMIS. Over 78% of the FSU faculty questions, 71% of the student questions, and 55% of the classroom teacher questions resulted in positive group responses. Negative opinions were generated on only 6% of the faculty questions, 18% of the student questions, and 9% of the classroom teacher's questions.

Information concerning costs indicated the total cost to operate the ICMIS for 106 students was $770.32. This total cost was divided into personnel costs of $631.25 and computer reporting costs of $139.07. The average cost per student was $7.26. The literature does not indicate whether these are reasonable figures or not. However, a decreasing per student cost as more students enter the system would appear to justify the usage of the ICMIS.

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Chapter I

Introduction

This report describes the development, implementation, and evaluation of an In-Course Management Information System (ICMIS) designed to manage various data needs in a competency-based education (CBE) program.

Why is the management of information in a competency-based course more important, or so different, than that required in the traditional class setting? This question is fundamental, for if a need for different management techniques cannot be perceived by the user (manager/teacher) then it would be futile to research and develop such techniques.

One of the possible answers to this question of different techniques for managing data lies in the distinction between data management in a teacher-lecture method of instruction and the data management in a competency-based or individualized class setting. Managing course data in an individualized setting is a complex problem. The instructor in an individualized setting is unable to control the rate of information delivery; the data results arrive at varied times; and the paperwork necessary to "keep track" of students can be quite unwieldly as pointed out by Neuhauser (1974) in her description of the Wayne State system. All of these problems arise because of the nature of the procedures

used in the individualization of instruction namely--the learner proceeds at his own pace; the learner chooses alternative routes through the instruction; and the learner is offered a choice of a wide range of experiences rather then only those normally imposed, or suggested, by the course instructor. On the other hand, the traditional setting creates far less management problems since it essentially permits a "batch" collection of data. The instructor generally tests all students at one time; records one grade for each student for the test at one time; and performs all of this in his (the instructors) own time schedule.

If the question of "keeping track" of the student's progress in a course is a legitimate persuable endeavor,do other authors besides Neuhauser (1974) perceive this as a problem? Rosner and Kay (1974), Joyce (1972), Parker (1974), Jones (1972), and DeVault (1973) all essentially agree that there is a need for a management system to monitor the progress of students through their programs. Rosner and Kay express this concern of all of those authors most succinctly when they state: "(a) necessity for CBTE (Competency-Based Teacher Education) implementation, which is barely off the drawing boards, is the development of management systems to monitor the movement of students through programs and to insure the availability of instructional materials, evaluation procedures, and access to faculty when and where these resources are needed by students [p. 295]."

A study of the development of both current and past computer management information systems, described in the next chapter, indicated

that each of these systems has attempted to solve only some of the problems that are raised in the individualized setting.

As an attempt to meet these concerns and needs, a more comprehensive in-course management information system was developed. One of the initial steps in the development of ICMIS was the determination of the informational needs of several Florida State University (FSU) course instructors who were already conducting individualized or CBE courses. After establishing the course and instructor needs, computer programs were written; data gathering instruments were designed; the procedures for student input of data were established; and the internal procedures necessary to collect, proof, process, and disseminate the data were determined. In addition, costing and evaluation instruments and procedures were developed for judging the efficiency and value of the system.

In summary, the study involved the following activities, which this report describes:

1. Course informational needs were received from various members of the College of Education faculty as to what they would want from a management system. Suggested features of a management system they might like to use were described in a Handbook of Procedures that had been supplied to them.
2. Meetings were held with those faculty members who were to participate in the system. From these meetings the specific programs, procedures, and codes to be used for individual

courses were established.

3. Writing the various computer programs to process the data. The major programs in the system included: (a) the Assessment Program, (b) the Weekly Progress Report Program, (c) a Resource Reporting Program, (d) an Attitude Reporting Program, (e) a Student's Performance Profile Reporting Program, and (f) various course statistics programs.
4. Designing and producing the various input data forms. Most of these forms were to be used by the students in reporting the results of their learning activities, or in evaluating these activities.
5. Presenting both a verbal and a written description of ICMIS to all the students in all the courses involved in the study. Throughout the quarter the students submitted completed data forms; the MIS staff proofed the forms and prepared data computer programs processed the data; and the course instructors received the requested weekly reports.
6. Finally, administering several evaluation instruments. These instruments were sent to all participants in the study for their evaluation of the various procedures and operations of the system. From these forms and the costing data, the conclusions described later in this report were obtained.

Chapter II

Background for the Problem

Introduction

Attempting to combine the characteristics of a CBE program with the features of a MIS raises the problems mentioned in Chapter I that the proposed management system attempted to answer. Prior to the description of the proposed In-Course Management Information System (ICMIS), some of the characteristics of both CBE and MIS are examined. In addition to a description of the characteristics, some course information management systems are described that have been, or are being developed. The chapter concludes by first comparing these current MIS systems with the functions and settings that the ICMIS contains and secondly by stating a series of questions that the evaluation of ICMIS attempted to answer.

Competency-Based Education

One problem faced by any reader of educational literature today is the mixture of words and phrases with essentially the same denotation. Much educational literature describes, and interchangably uses, various terms such as Competency-Based Education (CBE), Competency-Based Teacher Education (CBTE), or Performance-Based Education (PBE). Since CBTE is essentially a program of instruction which utilizes CBE characteristics, this study followed the definition of CBTE developed

by Cooper and Weber (1973): "A Competency-Based Teacher Education program specifies the competencies to be demonstrated by the student, makes explicit criteria to be applied in assessing the student's competencies, and holds the student accountable for meeting those criteria [p. 14] ."

Elam (1971) is most often quoted on the characteristics of CBE. He has categorized CBE characteristics as either: (1) essential, (2) implied, or (3) related and desirable. Those characteristics are listed as follows:

Essential elements

1. Teaching competencies to be demonstrated are role-derived, specified in behavioral terms, and made public.
2. Assessment criteria are competency-based, specify mastery levels, and made public.
3. Assessment requires performance as prime evidence, takes student knowledge into account.
4. Student's progress rate depends on demonstrated competency.
5. Instructional programs facilitate the development and evaluation of specific competencies.

Implied Characteristics

1. Individualization
2. Feedback
3. Systemic program
4. Exit requirement emphasis
5. Modularization
6. Student and program accountability

Related and desirable characteristics

1. Field setting
2. Broad base for decision making
3. Protocol and training materials
4. Student participation in decision making
5. Research-oriented and regenerative
6. Career-continuous
7. Role integration

Several of these CBE characteristics are significant to the development of a data management system. One of the characteristics is that the progress rate of the student is varied thus requiring some method for recording these variations. A second characteristic is that the individualization, itself, does not generally permit an instructor to manually "keep up" with what a student has completed or not completed. The need to supply various feedback information to the user is a third characteristic. A fourth characteristic is the ability to process information that may be generated within a field-based setting. Finally, one of the key characteristics of any MIS-CBE program, is what Elam (1971) describes as a systemic program. Elam in indicating that the program as a whole is systemic further explains this by quoting Banathy's (1968) definition of what the systems approach is. Banathy indicates that the systems approach is the application of a systematic strategy, where the word system means: "collection of interrelated and interacting components which work (together) to attain predetermined purposes. Purpose determines the nature of the process used and the process implies which components will make up the system [p. 9]."

One of the techniques used to facilitate the application of the systems approach is the use of the computer as a data handler for both contributers and receivers of information. Although a simplistic monitoring of managerial and instructional processes can be accomplished without the use of the computer, it would tend to be slow, subject to much human error.

and probably require additional staffing. The systematic use of the computer is a more logical choice to manage large volumes of data. The discussions that follow further support the usage of the computer as the facilitator of the management of data.

Management Information Systems

In examining some of the characteristics inherent in a management information system (MIS), the first problem encountered is the lack of a single definition. The terminology used concerning management information systems is quite diverse and has been developed primarily by business and industry. Their development of these terms increases as the utilization of computers becomes more prominent in data gathering. In order to standardize terms for this study, Webster's (1968) definitions for each term--management, information, systems--were modified and used: "A MIS is a regular and orderly way of acquiring facts or data to be used by persons in charge of an institution or classroom." It must be added, of course, that these facts or data should enable the user (manager/teacher) to better perform his functions.

As indication of what a management information system in education might have, Alcorn (1966) stated: "All information can be classified into one or more of five types; pupil, staff, program, facility, and finance. These five areas are actually interwoven. . . . Thus educational administrators need a system that will . . . integrate the mass of data . . . and reduce it to meaningful information. The system must also have the flexibility to permit growth without starting all over[p. 68] ."

Even though there are no standard MIS characteristics employed either by industry or educational institutions, probably the one most essential element in every MIS is that of the data base. Edelman (1971), Boardman, Doerr, and Van Gelder (1972), Gosden (1972), Fry (1971), and Harris (1972) all discuss the importance of data bases. Boardman, Doerr and Van Gelder list the following six important considerations for building a data base:

1. The elements are established to meet explicit objectives and each element must be properly coded according to a specific format.
2. All data must be standardized. The data must mean the same to all users of the system.
3. It must be easily accessible.
4. It must be flexible for updating.
5. It must be maintainable.
6. It must be protected.

MIS-CBE Attempts

This section of the chapter will describe some management information systems that have been developed to manage CBE data. The systems are those developed by Marrs (1973), Lorber (1973), Fichtenau and Watson (1974), Neuhauser (1974), and Florida State University/Florida International University. In addition, several earlier systems developed at FSU concerning the Elementary Teacher Education Model and the development of Computer Managed Instruction (CMI) are described.

Marrs and the University of Texas System. Marrs (1973) describes a management information system developed at the University of Texas at Austin, in the Department of Special Education to satisfy a need created by "an increase in desire by faculty and students to develop competency-based preparation programs for students [p. 7]." The system collects data from faculty, students, and project domains. The information is used for the following purposes:

1. Assist in optimal use of resources.
2. Assist in matching field-based projects with training needs of individual students and professors.
3. Assist in management of project operations.
4. Assist in short and long term planning of the project's priorities.
5. Assist in the evaluation of project activities, including processing product components.

The system "provides a means of matching student learning needs, faculty competencies and interests, in learning experiences available through field and course activities within and without individual departments of the College of Education[p. 9]."

Lorber and the Illinois State University System. Lorber (1973) describes a system for management information currently being used at Illinois State University to manage the information for over 2,000 students in Secondary Education. The system, known as Project Sequence, permits the student to proceed through the equivalent of three courses at his own rate of progress. He must pass competencies and provide this information to the computer system. If desired, referenced daily printouts for use by the students can be produced. The student may use these printouts to ascertain his progress in the program. Another purpose for the printout

is to provide information often used in faculty and student counseling sessions. However, by judicious use of the various student reports prepared by Project Sequence, students can, if they desire, progress through all the learning modules without consulting with a faculty member.

Fichtenau and Watson and the Oakland School System. Fichtenau and Watson (1974) describe the Student Achievement Monitoring system used in the Oakland Schools of Pontiac, Michigan. Using a Comprehensive Objective Catalog as the coding base, the student is tested or observed on various objectives. The results of these tests or observations are recorded on answer sheets and sent to a central computer via a remote optical scanner located in each elementary school. The day after the input is received, a transaction report, available to each student and to the teacher, indicates the progress of the student towards the completion of his objectives.

Neuhauser and the Wayne State University System. Neuhauser (1974) describes a MIS system used at Wayne State University in the Vocational Education program, which consists of several subsystems including admission, class scheduling, faculty loading, instructional field experience, and program evaluation systems. The instructor receives information about the objectives the student should have completed and how the student performed on each. A faculty member may submit a student's results of the completion of objectives, and receive end-of-course status reports on what course objectives the student has completed or not completed.

Florida State University-A model for the preparation of elementary school teachers (Sowards, 1968). Florida State University was one of ten institutions throughout the United States that early in 1968 began to develop systematic models of elementary teacher training programs. A team of FSU faculty members developed a model program that would be used in the preservice and inservice preparation of elementary teachers. The model was characterized by nine unique features, one of which was a plan to develop a Computerized Management Control System (CMCS) which would monitor individual trainees' progress.

The CMCS system was conceived to be usable by the student trainee and the professor in a real-time mode (The computer was to be available to the user via a remote terminal at any time). Administrative applications were to use the batch-mode (The items to be processed are coded and collected into groups prior to processing).

Dodl's feasibility study of the FSU teacher education model. Dodl (1969) describes in the feasibility study of the Florida State University Elementary Teacher Education Model, that the computer was used in the areas of computer-assisted instruction, computer-managed instruction, scheduling and counseling, weekly record keeping, record formatting, and in costing. A sub-contractor wrote various prototype COBOL programs for processing all reports except those involved in the areas of CAI and CMI. Although these programs were operational, the difficulty of adapting them to the FSU Control Data Corporation 6400 computer system from the sub-contractor's system eventually made it impractical to continue their

usage beyound the initial prototype stage. The programs were, in general, too cumbersome to merit continued development.

Hobson's computer managed instruction system. Hobson (1970) developed, as part of the FSU feasibility study of the Elementary Teacher Education Model, a prototype computerized terminal management system. Hobson's system demonstrated successfully that elementary education students could utilize such a system in their teacher preparation. The computer was successfully used in the day-in-day-out utilization for data acquisition. The feasibility of developing computer programs to provide reports on the functioning of the training program was also tested. The results indicated some problems in interacting with the reporting system.

Hagerty and Gallagher studies of CMI at FSU. Hagerty (1970) and Gallagher (1970) developed a CMI program at FSU at the same time that the testing of the Hobson's computer model was taking place.

Hagerty examined the successful implementation of the computer as a manager of course information. A terminal was used by students to collect the answers to test questions based on the learning tasks assigned.

Gallagher looked at the use of CMI as it related to the type of learner characteristics and to determine if one type of instructional treatment was more effective than another. His findings indicated that there was no significant difference in the type of instructional treatment but that there are learner characteristics which are related to success in a CMI course.

Schwartz and Oseroff's Clinical Teacher Model. Schwartz and Oseroff's use of the computer management system, developed by Hobson (1970), and the CMI techniques, mentioned by Hagerty (1970) and Gallagher (1970) is described by Dia (1973). The management system utilized computer terminals to collect data concerning students involved in mastering the competencies necessary to become a clinical teacher in the field of Special Education. This system enabled the student to be assessed via a computer terminal with the results being made available to the instructor to oversee the students progress through the Clinical Teacher Preparation Program.

Florida International University/Florida State University System. As a result of the personal involvement of Sowards and Gallagher in the development of the both CMI operations and the Elementary Teacher Education Model while they were both at FSU, a proposal for a joint project between FIU (their new institution) and FSU, for computer management of College of Education functions, was developed. The problem that both institutions undertook was to establish a management system that monitored students both within the classroom setting (FIU) and at the college level (FSU).

Gay (1973) describes the FIU Computer Management System for Performance-Based Curriculum (COMSPEC) as one designed to manage student progress data and to report this information to instructors, advisors, and administrators. COMSPEC was structured both to be modular and compatible with the student information system (SIMS) used at Florida State University. COMSPEC is used for weekly progress reporting, red

flag reporting, advisor registration reporting, and long-range planning and evaluation reporting.

Bonar and Dick (1974) describe the FSU SIMS system as one that provides computer reports to College of Education faculty advisors and administrators. The faculty advisor receives quarterly progress reports indicating the latest academic standing of the student. The system also provides monitoring information to the office that controls the student's internship; it provides course projection analyses to department chairmen; and it provides the Office of Management Information Systems with the capability to screen students to determine eligibility for graduation.

Scope of the Problem and Problem Restatement

One approach to the development of any management information system is that of attempting to adapt systems which have already been implemented elsewhere. However, experience of many systems analyists and programmers have often demonstrated that these efforts lead to more frustration than the expenditure of time warrants. Therefore, it is necessary to carefully analyze existing systems to determine the exact purpose of each. In the CBE field it is possible to identify a variety of purposes for the systems that have developed to date.

The systems at Illinois State and the Oakland schools were specifically designed to manage information about students' academic progress. The Hobson, Gallagher, Hagerty, Schwartz and Oseroff systems at FSU all used a computer terminal to manage the course information generated by students. The FSU Teacher Model system produced an extensive

set of management reports. Both FIU's COMSPEC system and FSU's SIMS system were designed to assist in the administration of teacher-education student advisement procedures. FIU's COMSPEC system was also used to manage the student's progress through course modules. The Wayne State and Texas systems included course progress monitoring and added a field-collection dimension to their systems. The Texas system had the additional capabilities to provide information on faculty and project cost data.

In addition to the purpose of the systems just described, a further examination indicates that almost all of them utilized most of the characteristics that are significant to the development of a data management system. The major difference between the general characteristics of these systems and the functions and settings of the ICMIS which was developed for this study is the detail of data that ICMIS handles.

Table 1 represents a comparison of these ongoing MIS systems relative to the detailed functions and settings of the ICMIS. These functions and settings, although not totally unique to a CBE setting, are a key to the positive acceptance of various individualized and CBE systems.

It was through the use of the primary MIS characteristic (a data base) within the framework of one of the characteristics of CBE (systems analysis approach), coupled with an eclectic adaptation of some of the ongoing systems, that ICMIS was developed.

Now that a description has been given of both what are some of the characteristics that are significant in the development of data management

TABLE 1
FUNCTIONS AND SETTINGS IN MIS SYSTEMS

	Ongoing Systems							Proposed
	WAYNE STATE	OAKLAND	ILLINOIS STATE	TEXAS	FIU	FSU SIMS	FSU CMI	ICMIS
Functions:								
Monitoring Student Progress	X	X	X	X	X		X	X
Monitoring Resources		X	X				X	X
Monitoring Attitude					X		X	X
Collecting Cost Data				X				X
Settings:								
Undergraduate	X		X	X	X	X	X	X
Graduate					X		X	X
Field	X	X		X				X
Terminal	X						X	X
Non-Computer Input		X	X	X	X	X		X

systems and some examples of ongoing systems, it is possible to restate the problem that this study reports. The problem was to demonstrate that a management information system for use in a competency-based setting could be designed, developed, implemented, and evaluated. To determine if ICMIS could be operated effectively in an individualized or CBE setting, a formative evaluation of the system was necessary. Thus, the questions to be answered in the evaluation were as follows:

1. Can all the varied inputs needed to monitor a student's progress in an individualized setting be accomodated to the satisfaction of both the student and the instructor?

2. Can the monitoring of resources, used in an individualized setting, be reported in such a manner as to provide useful feedback to the instructor for his future course revisions?

3. Can field-based performance data be collected, analyzed, and reported to the instructor in order to permit him to evaluate the student's performance?

4. Can the ICMIS be used in both undergraduate and graduate courses?

5. Can attitudinal data be collected from students, computer analyzed, and reported to instructors in order to identify potential trouble areas in time for corrective action to be taken?

6. What are the costs of operating an in-course management information system and can they be reasonably absorbed within the operational budget of a teacher education program?

Chapter III

Design and Development

The plans and procedures used in the design and development of the ICMIS are described in the following subsections of this chapter.

General Background

Throughout 1972 and 1973 Florida State University's College of Education was developing the student information management system (SIMS) mentioned in the preceding chapter. At the same time, the COMSPEC system was being developed at Florida International University (Gay, 1973). It was the desire of both institutions to attempt the adaptation of the other's system. Utilizing some of the concepts presented by FIU, the ICMIS originally was projected as a continuation of the FIU COMSPEC System together with other reporting programs.

One of the initial undertakings in any proposed information system is to ascertain the needs of the potential users. An earlier approach by the Curriculum and Intergrated Studies Program in cooperation with the Teacher Education Project at FSU in the Spring of 1973 was the attempt to identify the informational needs of those involved in the designing of, instructing in, and evaluating of an undergraduate teacher education program. Following an informal Delphi technique, the following procedures were used to produce a listing of informational needs:

Procedure 1. A list of teaching functions was initially established by the program coordinator.

Procedure 2. The list of teaching functions was administrated to teaching colleagues of the program coordinator and to ten doctoral students involved in a graduate seminar studying the concepts underlying the training of teachers using the sytems approach. The individuals involved were asked to list items that they felt were informational needs for the functions listed or to delete functions for which they could find no use.

Procedure 3. The results of the survey of informational needs were tabulated and a new listing of this information was prepared. This listing was used to ask the same individuals who answered the first questionnaire now to priority rank all the information needs within each functional category.

Procedure 4. Results of the priority ranking and the informational listing were then made available to be used by the program designers of a performance-based teacher education program to assist them in their task. Likewise, the information received was used to begin an analysis of the possible types of program information that would be required to successfully operate a CBE program.

Drawing upon the apprach used in this earlier undertaking, the author, who functioned in this study as the Course Information Manager (CIM), attempted to determine classroom information management needs through the development of a Handbook of Procedures (Appendix A, page 80). This

Handbook was distributed to 35 members of the College of Education faculty, who were asked to indicate to what extent the proposed system would meet their needs for information in an individualized class.

After the initial responses were received from interested faculty, an extensive series of meetings were held with the faculty to further refine these needs. It was determined that a fully functional MIS system should include not only student progress reporting but also student assessments of the value of the resources they used, student attitudes about the course activities, diagnostic and prescriptive outputs, scheduling of human and physical resources, and, finally, evaluation and costing data.

All of these information needs were placed in multiple settings--undergraduate courses, graduate courses, computer-directed and non-computer directed courses, on-campus courses, and courses taught in the public schools.

As a result of these meetings, the initial implementation attempted to provide information for student progress reporting, student assessment of resources, student attitudes about courses, and evaluation and costing of the system. No attempt was made to develop the diagnostic, prescriptive or scheduling systems. The remainder of this chapter describes in detail the Handbook of Procedures, the computer programs developed, the forms designed, and the evaluation and costing procedures established.

Handbook of Procedures

One of the purposes of the Handbook of Procedures was to determine the informational needs of the users. To accomplish this, the Handbook was designed along the lines of a proposed Management Informatio. System,

with descriptions of reports, forms, and procedures. Using this as a base, 35 College of Education faculty members involved in either a competency-based or individualized approach to instruction were sent copies of the Handbook. The Handbook was accompanied by a request that faculty members state what they might need from a management system if they were going to use it in their classes.

Of the thirty-five faculty members who had been contacted only seven replied to it and of those seven only five agreed to participate in various ways in the formative evaluation. Lengthy individual meetings with the course instructors and the CIM were held to determine which specifics in the ICMIS were desired and which were not. From these meetings the codes to identify learning tasks were developed. The type of grading input for the assessments were agreed upon. Report headings designed to ease interpretation were approved. In addition, a program to measure the attitude of students about their work was developed for use in some courses.

The Handbook was so designed that the description of the data an individual had to supply to the system also described the information that could be received from the system. Generally speaking, the following indicates what that information description was:

Supplied By Users	Received From System
1. Course Objectives	1. Printed competencies to be completed
2. Course Assessment to be taken	2. Progress monitoring reports of the status of each student in a class
3. Course Assessment Results	3. Progress reports as to the resources used, availability, and value
4. Course Resources to be used	4. Student attitude reports
5. Course Resources used	5. A profile of the student's field performance
6. Field Performance Ratings	6. End of class statistics by objectives

Having gathered the various informational needs from the potential users, the CIM next designed the interfacing segment of the programs so that the independent and smaller subsystems could be properly administered throughout the formative evaluation. The major subsystems of the ICMIS were (a) a Student Monitoring Subsystem, (b) a Resource and Utilization Reporting Subsystem, (c) a Student Attitude Reporting Subsystem, (d) a Student Profile of Performance Reporting Subsystem, and (e) various statistical routines to provide group averages for learning performance and times. A general overview of all the procedures and subsystems reports are shown in Figure 1.

One of the ICMIS objectives was to alleviate as much of the instructor's course management work as possible, through simplified input forms and timely computer reports. Although the inputing system and the instruction did not need to be computer operational, the reporting system itself was highly dependent upon a series of computer programs.

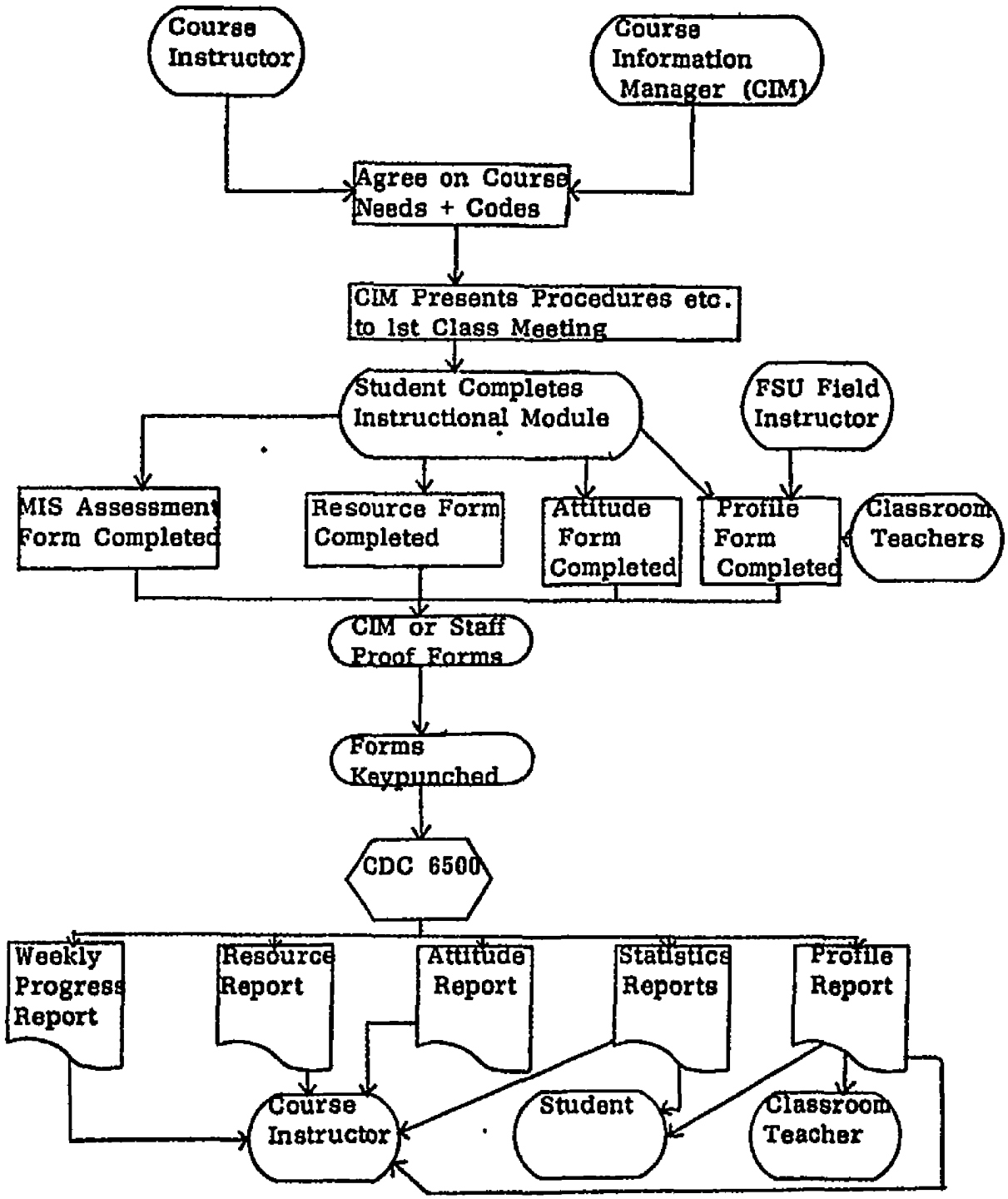

FIGURE 1-- INCOURSE MANAGEMENT INFORMATION SYSTEM SYSTEMS FLOW CHART

The following paragraphs describe the various computer programs and the various procedures used to operationalize these programs. The major subsystems are described first followed by the other supportive programs.

Student Progress Monitoring Subsystem

One of the key elements in the system is the reporting of student course progress to the Florida State University course instructor and to the student (if desired). The computer system COMSPEC (Computer Systems for Performance-Based Educational Curriculum) developed at Florida International University was used as a model for this process. The concepts developed at FIU were used to provide the main thrust of the ICMIS progress reporting system.

The Weekly Student Course Progress Reports (Figures 2 and 3) were designed to allow maximum flexibility in the type of grading policy used by the instructor. Since there were no FSU standards for individualized course terminology, the report programs permitted the instructor to label and the student to recognize the type of coding used in their particular class.

The levels at which the assessment of a competency could be demonstrated was based on a variation of Turner's (1972) six levels of the demonstration of teacher competencies as modified by Dodl (1973). Table 2 represents the several levels used in the system.

FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION
MANAGEMENT INFORMATION SYSTEM

DATE: APRIL 29

STUDENT COURSE PROGRESS REPORT

INSTRUCTOR:
COURSE: IDD 537

THE GRADE INDICATES THE LATEST GRADE FOR THAT ASSESSMENT FOR THAT STUDENT.
GRADES MAY BE EITHER: A, B, C, D, F, I, S, U, ANY NUMERIC, P=PASS, OR NP=NO PASS.

LEVEL: 1

	UNITS		1	1	1	2	2	3	3	4	4	4	5	5	6	6	6	7	7	7	8	8
	COGNITIVE OBJECTIVES			1	2		1		1		1	2		1		1	2		1	2		1
	STUDENT	SOC-SEC-NO																				
*		545-54-7579	36	99	80		99		99		60	80		80		80	80		99	99		99
		266-52-1305	15	80			60		99		60	99		80								
*		999-15-1324	19	99	99		50		75		80	99		60		99	80		80	99		
		999-43-2100	14	60	99		50		75		60	80		80		60	60		80	99		80
*		171-3[illegible]-2296	24																			
*		265-66-901E																				
		265-78-5569	32	99	99		99		99		80	80		80		80	80		99	99		80
*		585-46-7916	32	80	99		80		80													
*		032-34-5296	38																			
*		241-74-8885	20	99	80		60		75							60	80					
*		266-37-1732	26																			
*		999-15-1366	17				99		99		90			99		90			90			99
*		999-85-3290	18	99			80		75		80	60		99		99	80		80	99		
*		071-38-2352	37																			
*		999-13-1415	20	80	80		80		99		99	60				99	99					
*		999-17-0855	17	80	99		99				80	60		99		99	80					
		301-32-1395	26	99	99		80		99		60	99		60		99	99		80	99		

* THIS STUDENT HAS NOT ATTEMPTED ANYTHING IN THE PAST 7 DAYS

Figure 2--Student Course Progress Report--Example #1

FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION
[illegible] INFORMATION SYSTEM

DATE: MAY 28

STUDENT COURSE PROGRESS REPORT

INSTRUCTOR:
COURSE: I OF 435

THE GRADE INDICATES THE LATEST GRADE FOR THAT ASSESSMENT FOR THAT STUDENT.
GRADES MAY BE EITHER: A, B, C, D, F, I, S, U, ANY NUMERIC, P=PASS, OR NP=NO PASS.

LEVEL: 3

	GENERAL SKILL LEVEL	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
	SUB-LEVEL SKILLS		1	1	1	1	2	3	4		1	1	1	1	1	1	1	2	2	2
	GROUP SIZE OR CONTENT AREA			1	2	3						1	2	3	4	5	6	7		1	2
STUDENT	SOC-SEC-NO																				
*	264-[illegible]-5804			P			P	P	P					P		P					
*	234-[illegible]-5381			P					P					P							
*	264-16-9562			P	P		P	P	P			P	P		P	P	P			P	P
*	265-96-7816			P			P	P	P			P	P	P	P	P	P				
*	264-66-6863			P		P	P		P						P	P					
*	267-64-4363			P	P	P	P	P	P					P		P					
*	263-72-6211			P	P	P	P	P	P			P		P		P	P				
*	261-68-1517			P			P		P				P		P	P	P				
*	262-98-2370														P		P				
*	265-64-2836			P	P	P							P				P			P	P

* THIS STUDENT HAS NOT ATTEMPTED ANYTHING IN THE PAST 7 DAYS

Figure 3--Student Course Progress Report--Example #2

TABLE 2
LEVEL NUMBERS AND THEIR MEANING

Level Number	Meaning
1	Knowledge--(facts, data, information, etc.)
2	Simulation--(Non-real world but theoretical or abstract)
3	Internship--(Settings in a school or other real setting but under the direction of others)
4	On the Job--(Normally would be assessed after the student had graduated)

An examination of Figure 2 indicates that for the students listed the assessment is at level 1 which indicates that the students would be assessed on their knowledge of the criteria. Figure 3, on the other hand, indicates that the students must demonstrate successful performances of the competency within an internship or real setting (level 3).

The labels "Units" and "Cognitive Objectives" in Figure 2 and the labels "General Skill Level", "Sub-Level Skills", and "Group Size or Content Area" in Figure 3 are an indication of the flexibility given to the instructor to use the terminology that he understands for labeling his assessment areas. Another flexibility of the system is that each course may contain up to three hierarchies for the assessments. Figure 2 indicates assessments at two levels of hierarchy and Figure 3 permits assessments at three levels of hierarchy. The numbers opposite the label identifiers, such as the "1 1 1 2 2 3" etc. in Figure 2 opposite the hierarchy label "Units" represent the codes that identify the specific competency or item being assessed in that class. Examples of the codes for the various courses are found in Appendix K. Finally, these examples also indicate

that the instructor may choose from a wide range of grading options so that the grades may be numeric, as found in Figure 2, or alphabetical, as displayed in Figure 3.

The data printed in the report were gathered from information coded by the student, or the instructor, on input forms described later in this chapter. These forms were keypunched to produce the data cards used in the system. Students also had the option to enter data directly from a computer terminal.

Resource Utilization Reporting Subsystem

The purpose of these reports was to develop data to describe the use, availability, and value of instructional resources where for example resources were considered to be either a person, a module, a chapter or pages in a book, test questions from a computer terminal, or the computer terminal, itself. It was hoped that the course instructor/designer would be able to use this feedback information for continued improvement of the course.

The Resource Utilization Report (Appendix B, page 99) indicated the number of students using a resource, the average time spent using the resource, the average number of attempts to obtain the resource, the number of unsuccessful attempts by time of day, and estimated value of the resource to the students. Several Red Flag codes indicated whether the resource was judged marginal or worse by the students or whether two or more attempts were needed before the student could obtain the resource.

Student Attitude Reporting Subsystem

Too often student dissatisfaction goes unnoticed until protest arises. It was the purpose of the Attitude Monitoring system to collect weekly feedback on the student's attitude concerning what he was doing in the course, thus permitting the instructor to become aware of any class dissatisfaction. The procedure permitted the student to rate the content, testing, instructor, and any other component of the past week's activities. In addition to this rating, the student was given the opportunity to write an open-ended response on any component the student perceived as being valueless or worthwhile.

The Attitude Report (Appendix C, page 101) summarized the various ratings. An abbreviated version of any of the student's open-ended responses was also given in the report.

Student Profile of Performance Reporting Subsystem

The preparation of teachers has long involved the student intern's exposure to the realistic settings offered by the public school classroom. One difficulty associated with the student intern's participation in the classroom has been the problem of analyzing his performance. It was proposed that with the judicious gathering of varied inputs concerning the intern's participation in the classroom and a set of categories to rate this participation, the intern's performance could be recorded and reported on a timely basis.

The procedure developed was to gather a combination of the

student intern's self-rating of performance, the classroom teacher's rating of the intern's performance, and a FSU observer's performance ratings. These ratings were coded and processed to develop the intern's classroom performance profile.

The categories against which the intern was rated were established by the FSU faculty member or team. The categories could be varied as appropriate to different instructional settings. All three input instrument users were requested both to rate the intern's performance (using identical sets of questions) and to respond to three open-ended questions. These three questions were: (1) What was the most successful venture performed during the past week? (by the intern) (2) what was the least successful venture performed during the past week? (by the intern) (3) Was there any area of preparation at FSU that the student needed more (or better) preparation and if there was, what was it?

The Student Profile Report (Appendix D page 103) indicated the categories against which each intern was rated. Any open-ended statement made by any of the respondents was also given in the report.

Course and Student Statistics Programs

In addition to various weekly reports (just described), a series of course statistics reports were written, which were summaries of the weekly reports. The reports were printed twice a quarter. One of the reports, the Class Statistics Report (Appendix E), consisted of summaries of each student's weekly progress data compared to the class in general.

This report provided information both for the entire class and for each individual student. It indicated the mean number of attempts to complete an assessment, the mean time to complete that assessment from the first attempt to the last attempt, and the mean grade. The mean grade was calculated in one of several ways:

1. If all grades from that particular assessment were numeric, then the mean grade was a single mean of all the numeric grades.
2. If all the grades were on a pass or no pass basis then the pass grade was computed as a 1 and the fail (no pass) grade as a 0; thus, the mean could be any value between 0 and 1.
3. If all the grades were a letter grade, then a conversion to a 4.0 grade scale was used with A=4, B=3, etc. The mean grade then was computed from the numeric equivalent scale.
4. If any of the grades were of a mixed value in a particular assessment, then the mean grade was somewhat meaningless.

The report also indicated how many students attempted an assessment 1, 2, 3, 4 or more times.

Another version of the Class Statistics Report was produced for each individual student (Appendix F). This report was exactly the same as the overall Class Statistics Report except that only one student report was printed per page; thus, the report could be made available to

the student, if desired.

The data from the weekly Resource Reports and the Attitude Reports were accumulated throughout the quarter and summarized in a final total printout. The physical layout of the report was exactly the same as that of the weekly reports, except for the headings.

The final class statistic report was the Summary of Student Profile Progress Report (Appendix G). The purpose of this report was to permit the respondent to observe the overall trend of the weekly observational statements for each student on each of the stated categories.

Other Computer Programs

In addition to the weekly reporting programs, the system utilized several programs that initiate various data bases, update files, and change or delete any error made in the weekly student progress monitoring program. These computer programs are described below.

1. Course Initialization--This program established the data codes used in each course for every required assessment.
2. Validation--This program developed a file of names and numbers of valid users of the system. It permitted students and faculty to input and receive academic data, and permitted the faculty member to make other types of grade changes.
3. Red Flag Code Loader and Reporting--These two programs permitted the faculty member to receive special reports on any student who might be exceeding any limits established by the course instructor. For example, a course instructor

could request printouts indicating which students were taking more than three attempts to complete an assessment.

4. Assessment Loader--This program was used to update weekly the student's computer data file as to which assessments had been completed or attempted.
5. Terminal Input Routine--This program enabled the student, or any other valid user, to enter all assessment information directly from a computer terminal rather than through punched cards.
6. Delete, Zero, and Final Grade Program--This program permitted any student's name or grade to be deleted or changed within the system. It also was used to enter the final grade for each student.

Equipment and Language Used

The ICMIS system was processed on the Control Data Corporation's 6500 computer system. All card input was processed through the CDC card reader; printouts were produced on the CDC line printer. Files were maintained on-line for ready accessibility. This accessibility allowed input directly from either the model 33 KSR teletype or from the CDC 713 CRT terminals. All computer programs, both interfacing and major programs, were written in COBOL.

Forms Design

One of the key elements needed in any information system is the collection of data. Ideally, the data gathering instruments are

easy to use, understandable, available, and codable. The forms used in ICMIS were many and varied; some were used internally by the ICMIS staff, while the majority were used by the student or instructor.

Table 3 presents a brief description of all ICMIS forms; examples of each can be found in Appendix H.

Evaluation Procedures

Critical to the outcome of the study was the determination of the value of the system to the users and the cost of using the system. To answer specifically the first question, three instruments were designed. A fourth instrument, the Weekly Attitude Report was also used to monitor any student's opinion on ICMIS forms or procedures used throughout the various weeks.

The three evaluation instruments (Appendix I) were: (1) a student questionnaire, (2) a faculty questionnaire and (3) a classroom teacher questionnaire. Each of the questionnaires contained a series of attitude questions requiring the respondent to record his answers on an agreement-disagreement scale. To determine the degree of favorable attitude toward the system and elements of the system, many of the questions switched from the solicitation of a 'strongly agree' to a 'strongly disagree' choice. In addition to the rating questions, an open-ended response indicating the overall reaction to ICMIS was solicited. The three instruments were sent to all of the student users, to all of the FSU faculty users, and to all of the classroom teacher users.

TABLE 3
ICMIS FORMS

Form Name	When Used	Initiated By	Purpose
Course Initialization	Once	Course Info. Manager (CIM)	Initiates information about the course. The information includes the course number, the instructor's name, codes for inputing weekly progress information, and other items.
Red Flag Input	Once	CIM	Permits limits to be set by the instructor so that a Red Flag Report could be printed if a student exceeded the limit.
Student Initialization	Once	Student	Enables the system to obtain information about the student in the course.
MIS Assessment	Continuous	Student or Instructor	Reports results of any assessment taken by the student. Contains the student's name, the course name, and the codes, date and grade of the assessments taken. Used to produce the Weekly Student Course Progress Report.
Resource Utilization And Value	Continuous	Student	Permits the student to provide information about the resources used during the past week. Requests the student's opinion as to value plus accessibility.
Student Course/ Program/Procedure Attitude	Continuous	Student	Permits the student to provide information as to the value of any function performed during the past week.
Profile Rating	Continuous	Student + Classroom Teacher + Observer	Used to obtain the performance rating of the students during the past week as perceived by the student, the classroom teacher, and an FSU observer.
Deletion, Correction, & Final Grade	Periodic	CIM	Permits information to be changed in the system. Enables the student or a grade to be deleted or changed. Also used to collect the final grade in the course.

Costing information for use in evaluation was gathered in several ways. One of the methods used by the CIM required information collected on a Course MIS Time and Cost Data Form (Appendix J). Where possible, the Time and Cost Data Form was filled out by the specific user. Where this procedure was impracticable, the CIM recorded who performed the action and what that action was. In addition, the date and time the action was performed were also recorded. From this information, time by function data were produced; by multiplying these results by the user's salary cost information was made available to the CIM.

Another cost gathering technique was to utilize the COST parameter available in the Control Data Corporation computer system. This parameter indicates the actual cost of processing the information through the computer. To this figure were added the cost for cards read and lines printed by the computer.

Chapter IV

Implementation

This chapter includes a description of the steps and procedures used in the implementation and the formative evaluation of the ICMIS system during the Winter and Spring quarters of 1973-1974 in the College of Education at Florida State University.

One of the major difficulties in implementing the ICMIS at FSU was the absense of a total CBE program. By this is meant, that there was no programmatic series of courses functioning whereby the student could move through assessments and modules concerning a particular competency and then move on to other levels of demonstrating the completion of the competencies. However despite the absense of a total CBE program, several of the courses, included in the study, were competency-based in their learning tasks, and the others, although not considered to be competency-based, were individualized.

As previously stated, five faculty members teaching four courses agreed to participate in the study. Following are brief descriptions of the courses.

Health Programs in the Elementary School (IDF-320)

The instructor taught two sections, which were used in the ICMIS study. The course was required for Elementary Education majors. Most

of the 41 students in the two sections of the campus-based course were college juniors. The methodology of instruction was such that the student received a syllabus of readings and was directed to go to a computer terminal for an assessment after completing a particular reading section. The results of the assessments were entered by the student on the MIS Assessment forms for use in ICMIS. The students met only nine times early in the quarter with the instructor. After that period of time the instructor monitored students through the information received on the weekly reports or through individual conferences.

Classroom Organization and Pupil Evaluation (IDF-405)

There were two sections involved in ICMIS, taught by two different instructors. The course was required for all Elementary Education majors. All the 38 students in the campus-based course were college seniors. Although both instructors had an entirely different instructional approach, neither offered formal lecture sessions after the first week. One instructor's section required a product to be developed by the students. After the instructor evaluated the product, the results of the evaluation became part of the ICMIS reporting data. The second instructor required outside readings with written assessments. The assessment results were recorded on the MIS Assessment forms by either the instructor or an authorized assessor. In other tasks required by the second instructor, the student submitted products for evaluation by the course instructor.

Techniques of Programmed Instruction (IDD-537)

An elective course for any College of Education graduate student, this course was generally required in the program of all Instructional Systems majors. Although the class met once a week for various background discussions or group conferences, the 17 students essentially worked independently. Their task was to read various articles for background information, then be assessed at a computer terminal on the articles. The results of these were recorded by the student on the MIS Assessment form. The students also produced a product evaluated by the instructor and recorded for ICMIS.

Student Teaching in the Elementary School (IDF-485)

A special competency-based internship for Elementary Education majors both from Florida State University and Florida A & M University, was conducted entirely off-campus in a public school setting. Ten interns contracted with the FSU instructor to perform certain tasks which were rated during a particular period of time. The results of the performance were recorded by various classroom teachers on the MIS Assessment forms. The student intern was also involved in the preparation of the Student Profile Report; thus, all the members of the team (intern, FSU faculty member, and classroom teacher) provided input data on the intern's performance each week. The Student Profile Report was then used by the FSU faculty member in a counseling session held weekly with the intern and the classroom teacher for the purpose of discussing the strengths and weaknesses of the intern's past weekly performance.

Course Procedures and Student Examples

The following several subsections together with the previously described system flow chart (Figure 1) are descriptions of the procedures followed throughout the study. The descriptions are divided into those procedures used during the first week of classes, those used generally throughout the 10 week quarter, those followed by a typical student in one of the on-campus participating classes, and those followed by a student in the public school.

First week procedures. Throughout the first week of classes, the CIM met with all classes to explain the system. In the meeting, the CIM presented an example of each type of form to be used and a listing of the codings needed in the class (Appendix K); and explained where to obtain MIS Assessment forms and where to submit the forms for processing. The students completed the initialization forms so that a file of information for each student could be activated in the Assessment Program.

Weekly procedures. The following is a short listing of the events that typically occured every week throughout the study.

1. The students submitted the results of any assessment on the MIS Assessment form. If permitted, the grade was written by the student; if not permitted, the grade was written by the course instructor or other designated individuals. Blank forms were available at locations throughout the College of Education. The completed forms also could be submitted at the same location. Shortly after the term began the Terminal Input Program for the various CRTs being used was written

thus permitting those students using computer terminals to enter their assessment information directly through a terminal if they desired.

2. All assessment coding forms were proofed for accuracy by the course information manager prior to keypunching.
3. All the resource and attitude forms' open-ended responses were coded by the CIM.
4. The profile forms also were coded for the various open-ended responses that the students and others had recorded.
5. All data were processed on the CDC computer system early Monday morning, in order to produce the weekly reports that were required to be sent to the course instructors.
6. The weekly reports were delivered to all instructors Monday morning or, in the case of the student teaching course, the reports were delivered by late Monday afternoon.

Periodic procedures. Twice during the quarter, the Class Statistic reports were produced and distributed. The first set of these reports was printed approximately midway through the quarter and distributed to the faculty members. The second and final set of Class Statistic reports was presented to the course instructor upon completion of the course for the quarter.

On-campus student example. The following example represents those procedures that a typical student followed in an on-campus individualized course utilizing ICMIS.

1. During the first week of classes the student received written material from the instructor which explained both the procedures to follow in the learning task and the procedures to follow in the mangement tasks. The student listened to a short explanation of the management procedures from the course information manager.
2. After the student began his learning tasks, he was (possibly) required to read some material pertinent to study areas. Upon completion of the reading assignment, the student proceeded to the resource-assessment center for testing.
3. Upon completion of the assessment, the student coded the MIS Assessment form, using the previously furnished code listings, and returned the form, together with the assessment, to the resource center personnel.
4. A resource center person (if permitted) graded and recorded the assessment and the date, and then signed the MIS Assessment forms. The form was placed in a pick-up basket.
5. The student also completed a Resource Utilization form indicating the amount of time spent using the resource and his value judgment of the resource. The form was placed in

the pick-up basket at the resource assessment center.

6. If desired, the student also rated and described on an Attitude form those activities completed during the past week. This form was also placed in the pick-up basket for collection.
7. Personnel from the ICMIS office collected all the forms and prepared them for the various reporting subsystems.

Off-campus student example. This example presents those procedures that a typical student followed for the course conducted in a public school classroom.

1. During the first week the FSU course instructor explained the procedures required by the student to satisfactorily complete the course.
2. The student and the FSU instructor agreed individually on those areas in which the student was to be rated. A time dead-line also was established for completion of the task.
3. The student together with the classroom teacher(s), worked toward the completion of the assigned tasks. Upon the successful or unsuccessful completion of the task, the classroom teacher recorded a grade on the MIS Assessment form that the student previously had prepared and coded. The form was returned to the FSU instructor.

4. The student, the classroom teacher, and the FSU instructor completed a weekly rating of the student's general performance during the past week. These forms were returned to the FSU instructor.

5. The FSU instructor returned all coding forms to the CIM, who prepared all inputs, processed the data, and returned all reports to the FSU instructor.

6. At a weekly conference held between the student, the classroom teacher, and the FSU instructor, the results of the output reports were discussed. New contracting procedures, if necessary, were established. The cycle then began again.

Chapter V

System Results

Introduction

This chapter presents the results of the implementation and formative evaluation of ICMIS. The results include the number and type of courses involved, the number of faculty, the volume of data generated by the system, the results of the evaluation of the system by the users, and the costs of operating the system.

Faculty and Course Data

After the Handbook of Procedures had been examined by 35 FSU faculty members, five of them agreed to participate in the formative evaluation of the system. Interactions between the individual course instructors and the Course Information Manager (CIM) produced the types of involvements in the ICMIS that is indicated in Table 4.

Course usage results. The information in Table 5 represents the data that was collected from the students throughout the quarter in the various subsystems of ICMIS.

It should be noted that there were a large number of responses given by the student users whenever they were asked various open-ended questions. Appendix L indicates an example of a computer listing

TABLE 4
THE CHARACTERISTICS OF AND ICMIS PROGRAMS USED BY THE COURSES INVOLVED IN THE STUDY

	Courses					
	IDD 537	IDF 320		IDF 405		IDF 485
		Sect. 1	Sect. 2	Sect. 2	Sect. 3	
Characteristics:						
Undergraduate Course		X	X	X	X	X
Graduate Course	X					
On-Campus Setting	X	X	X	X	X	
Public School Setting						X
Computer Terminal Assessments	X	X	X			
Student Contracting for Perform. Needs				X		X
Programs Used:						
Progress Monitoring	X	X	X	X	X	X
Class Statistics	X	X	X	X	X	X
Resource	X	X	X	X	X	
Attitude		X	X			
Profile					X	X

TABLE 5
ICMIS USAGE DATA

Subsystem Type	Total Classes Participating	Total Students Participating	Total Inputs	Total Open-Ended Responses
Course Progress Monitoring	6	106	1621	N/A
Class Statistics	6	106	1621	N/A
Resource	5	96	.286	N/A
Attitude	2	41	162	26
Profile	2	14	399	149

of the type of responses given by the students. The wide range of responses suggests that individual reports to the user were of less value for generalizing student responses than for identifying specific attitudes and values concerning the course.

As an examination of Table 6 evinces, in four of the five courses utilizing the Resource subsystem the number of original categories had to be increased. These increases were necessitated when the CIM found that students tended to group several possible codes rather than to categorize them with the distinction the instructor had desired. As a result of this situation 41 categories of resources were added to the original list of 174. Several of the course instructors, in a conversation with the CIM, explained this situation by indicating that they had generally neglected to inform the students as to how they (the instructor) would prefer to have the information recorded. Another possible reason was that the student was not supplied by the CIM with a listing of the category codes. The CIM had expected to rely on the student,using his own course syllabus which printed the resource assisgnments, to record the specific information desired.

Evaluation results. As stated in an earlier chapter, one of the major thrusts of the formative evaluation was the determination of the value of the system as perceived by the various users. The following sections of this chapter indicate the results of the various questionnaires returned by the users.

TABLE 6
RESOURCE CATEGORIES DATA

Class	Input Numb.	Size of Class	Categories Responded To	Original Number of Categories	Added Categories	Original Categories Not Responded To
IDD 537	118	17	48	44	11	7
IDF 320	155	41	73	64	27	18
IDF 405-02	6	25	6	17	3	14
IDF 405-03	3	13	1	49	0	48

The information in Tables 7, 8, and 9 indicate the detailed reponses to the questionnaires. The characteristics of the questionnaire items are listed and explained below:

1. Information Recording--the overall reaction of the respondents to the time it took to code information on the various forms used in the system.
2. Usefulness--how useful were the various reports produced by ICMIS.
3. Ease of Understanding--how easy and non-confusing to use were the various forms and reports.
4. Interaction with CIM--whether the various interactions with the CIM were of value or not.
5. Discussion in Class--whether or not the users thought that the various reports should be discussed in the class or with the student.
6. Use Again--whether or not the users would use ICMIS again in this class.
7. Use Other Class--whether or not the users would use ICMIS in other classes.

Table 7 provides evaluative information gathered from the student questionnaires (Appendix I) which were sent to all 106 students in the system. The information in Table 7 includes the data from the 44 students who returned the questionnaires. Due to the individualized nature of the courses the questionnaires had to be mailed rather than presented in class and it is possible that this attributed to the return

TABLE 7
STUDENT QUESTIONNAIRE RESPONSES

Characteristics	Item	IDF 320 N=41* R=11* Pos**	Neut	Neg	Omit	IDF 405-02 N=25 R=7 Pos	Neut	Neg	Omit	IDF 405-03 N=13 R=1 Pos	Neut	Neg	Omit	IDF 405-? N=? R=3 Pos	Neut	Neg	Omit	IDF 485 N=10 R=6 Pos	Neut	Neg	Omit	IDD 537 N=17 R=16 Pos	Neut	Neg	Omit	TOTAL Pos	Neut	Neg	Omit	R
Information Record. of:																													
MIS Assess. Forms	2	36%	9%	45%	9%	71%	14%	14%	0%	0%	100%	0%	0%	0%	33%	33%	33%	17%	33%	50%	0%	31%	6%	56%	6%	34%	16%	43%	7%	44
Resource Forms	10	36	0	45	18	14	14	29	43	0	0	100	0	0	33	0	67	-	-	-	-	19	19	44	19	21	13	39	26	38
Attitude Forms	13	36	18	36	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	18	36	9	11
Profile Forms	17	-	-	-	-	-	-	-	-	100	0	0	0	-	-	-	-	17	17	17	50	-	-	-	-	29	14	14	43	7
Usefulness Of:																													
Process Report	6	18	18	45	18	0	43	14	43	100	0	0	0	33	0	33	33	83	0	17	0	13	31	19	38	25	23	25	27	44
Profile Report	16	-	-	-	-	-	-	-	-	100	0	0	0	-	-	-	-	67	0	0	33	-	-	-	-	71	0	0	29	7
Ease of Understand. of:																													
MIS Code Forms	3	36	9	45	9	29	29	43	0	100	0	0	0	33	33	0	33	33	0	67	0	37	19	37	6	36	16	41	7	44
Process Report	7	36	27	9	27	14	43	0	43	0	100	0	0	33	0	0	67	50	17	33	0	25	19	6	50	30	25	9	36	44
Resource Forms	11	45	9	27	18	29	14	14	43	0	0	100	0	0	33	0	67	-	-	-	-	25	33	25	13	29	24	24	24	38
Attitude Forms	14	45	27	18	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	27	18	9	11
Discuss in Class of:																													
Process Report	5	36	9	27	27	14	29	29	29	100	0	0	0	67	0	0	33	50	33	17	0	31	25	25	19	36	20	23	20	44
Resource Report	12	45	9	18	18	14	43	0	43	100	0	0	0	0	33	0	67	-	-	-	-	37	19	25	19	37	21	14	26	38
Attitude Report	15	36	18	27	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	18	27	18	11
Indiv. Stat. Report	18	27	18	18	36	57	0	0	43	100	0	0	0	67	0	0	33	83	0	0	17	31	25	13	31	45	14	9	32	44
Interaction with CIM	4	73	9	9	9	14	43	43	0	100	0	0	0	33	0	33	33	67	17	0	17	63	13	6	19	57	16	14	14	44
Need for Progress Report In this class	8	55	9	27	9	14	14	29	43	100	0	0	0	33	33	0	33	83	0	17	0	50	6	19	25	50	9	20	20	44
Use Progress Report in Other classes	9	36	18	18	27	43	14	29	14	0	0	100	0	67	0	0	33	0	50	17	33	38	19	13	31	34	20	18	27	44

*N = Number of students in the class

R = Number of respondents from the class who returned the questionnaire

**% = Percentage is the total number who answered each part of the item divided by number of respondents

*** = IDF 405-? = Three questionnaires that did not indicate the section number

being lower than was expected.

The data in the column "Pos" were obtained by adding together respectively, the percentages of the Strongly Agree and Agree columns. The percentages of the Strongly Disagree and Disagree were added together to give the data in the negative column titled "Neg". Finally the "Neut" column contained information from the student's neutral response columns. The "Omit" column contains the data from those questions which were left blank. The following several examples from the student questionnaire should further clarify these combinations:

1. Question number 2 states: "The physical preparation of the MIS Assessment Course forms took too much of my time." If the student disagreed with the statement either "Disagree" or "Strongly Disagree" was checked. However, if the student agreed with the statement, thus expressing a negative attitude about the system, he marked either "Agree" or "Strongly Agree". The totals of question number 2 indicate that 43% of the students marked either Agree or Strongly Agree, thus evidencing a more negative feeling toward ICMIS than the 34% who, by checking Disagree or Strongly Disagree, were more positive toward the system.

2. Question number 6, "The Weekly Progress report was useful to me," was considered favorably answered if either "Agree" or "Strongly Agree" was checked. The question was considered negatively

answered if either "Disagree" or "Strongly Disagree" was checked. For this question, 25% of the students responded favorably and an equal percentage of 25% responded negatively. Tabulating from the data in Table 7 indicates that the students generally were negative toward the recording of the MIS Assessment information and the Resource information. The students appear to be quite positive toward the discussion of the results in the class, the presentation by the CIM, and need to use the system in this and other classes. For those that used the Profile Report they were highly positive as to its usefulness. However, the data indicates that the students had some difficulty in understanding how to use several of the input forms but did not feel that the Weekly Progress Reports were confusing .

Table 8 represents the replies received from the five faculty members whose courses were used in the study. The faculty questionnaire is found in Appendix I. The format of the table and the determination of the positive or negative response is the same as that described for the student evaluations.

As can be readily seen, the FSU Faculty members were highly positive in their responses to almost all of the questions about the system. The most extreme negative response was the belief that the recording of the information may have taken too much of the student's time. The other item of note is that the faculty seem generally neutral to the concept of discussing the results of the reports in class. Of

TABLE 8
FACULTY QUESTIONNAIRE RESPONSES

Characteristics	Item	IDF 320 N=1* R=1* Pos	Neut	Neg	Omit	IDF 405-02 N=1 R=1 Pos	Neut	Neg	Omit	IDF 405-03 N=1 R=1 Pos	Neut	Neg	Omit	IDF 485 N=1 R=1 Pos	Neut	Neg	Omit	IDD 537 N=1 R=1 Pos	Neut	Neg	Omit	TOTAL Pos	Neut	Neg	Omit	R
Information Record. of:		**																								
MIS Form by Faculty	4	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	40%	60%	0%	0%	5
MIS Form by Student	8	0	0	100	0	0	0	100	0	0	100	0	0	0	0	100	0	100	0	0	0	20	20	60	0	5
Usefulness of:																										
Progress Report	6	100	0	0	0	0	0	100	0	100	0	0	0	100	0	0	0	100	0	0	0	80	0	20	0	5
Resource Report	13	100	0	0	0	0	0	100	0	0	0	100	0	—	—	—	—	0	100	0	0	25	25	50	0	4
Attitude Report	18	100	0	0	0	—	—	—	—	0	0	100	0	—	—	—	—	—	—	—	—	100	0	0	0	1
Profile Report	23	—	—	—	—	—	—	—	—	0	0	100	0	100	0	0	0	—	—	—	—	50	0	50	0	2
Class Stat. Report	28	100	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	100	0	0	0	60	20	0	20	5
Ease of Understand. of:																										
Progress Report	7	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	5
Resource Report	17	0	0	0	100	0	100	0	0	0	0	0	100	—	—	—	—	100	0	0	0	25	25	0	50	4
Attitude Report	19	100	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	100	0	0	0	1
Profile Report	24	—	—	—	—	—	—	—	—	100	0	0	0	100	0	0	0	—	—	—	—	100	0	0	0	2
Class Stat. Report	29	100	0	0	0	100	0	0	0	100	0	0	0	0	0	0	100	100	0	0	0	80	0	0	20	5
Discuss in Class of:																										
Progress Report	12	0	100	0	0	0	0	100	0	0	100	0	0	100	0	0	0	100	0	0	0	40	40	20	0	5
Resource Report	16	0	100	0	0	0	0	100	0	100	0	0	0	—	—	—	—	0	100	0	0	25	50	25	0	4
Attitude Report	22	0	100	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	100	0	0	1
Profile Report	27	—	—	—	—	—	—	—	—	0	0	100	0	100	0	0	0	—	—	—	—	50	0	50	0	2
Class Stat. Report	32	0	100	0	0	0	0	100	0	100	0	0	0	0	0	0	100	0	100	0	0	20	40	20	20	5
Use Again Same Crs.																										
Progress Report	10	100	0	0	0	100	0	0	0	100	0	0	0	0	0	0	100	100	0	0	0	80	0	0	20	5
Resource Report	14	100	0	0	0	0	0	100	0	100	0	0	0	—	—	—	—	100	0	0	0	75	0	25	0	4
Attitude Report	20	100	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	100	0	0	0	1
Profile Report	25	—	—	—	—	—	—	—	—	100	0	0	0	100	0	0	0	—	—	—	—	100	0	0	0	2
Class Stat. Report	30	100	0	0	0	100	0	0	0	0	100	0	0	0	0	0	100	100	0	0	0	60	20	0	20	5
Use in Another Class:																										
Progress Report	11	100	0	0	0	100	0	0	0	100	0	0	0	0	0	0	100	100	0	0	0	80	0	0	20	5
Resource Report	15	100	0	0	0	100	0	0	0	100	0	0	0	—	—	—	—	100	0	0	0	100	0	0	0	4
Attitude Report	21	100	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	100	0	0	0	1
Profile Report	26	—	—	—	—	—	—	—	—	0	0	0	100	100	0	0	0	—	—	—	—	50	0	0	50	2
Class Stat. Report	31	100	0	0	0	100	0	0	0	100	0	0	0	0	0	0	100	100	0	0	0	80	0	0	20	5
Interaction with CIM:																										
Pre-meeting Time	1	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	5
Class Presentation	2	100	0	0	0	0	0	100	0	100	0	0	0	0	0	0	100	100	0	0	0	60	0	20	20	5
Useful	3	100	0	0	0	0	100	0	0	100	0	0	0	100	0	0	0	100	0	0	0	80	20	0	0	5
Prog. Rept. Timely	5	100	0	0	0	0	100	0	0	100	0	0	0	100	0	0	0	100	0	0	0	80	20	0	0	5
Prog. Rept. Doesn't Need Changing	9	100	0	0	0	100	0	0	0	0	0	100	0	0	0	100	0	100	0	0	0	60	0	40	0	5

*N = Number of faculty in the class
R = Number of respondents from the class who returned the questionnaire
**% = Percentage is the total number who answered each part of the item divided by number of respondents

course in an individualized instructional setting it may be that since there would be little total class interactions, the faculty member may have thought that the issue was moot.

The responses to the questionnaire sent to the 12 participating classroom teachers (Appendix I) are reported in Table 9. Although a return of only four questionnaires is indicated, two of those returned each represented four people who acted as teams in both replying to the questionnaire and in inputting the weekly profile and MIS Assessment reports.

Despite the fact that the Classroom Teachers gave no response as to the recording of the information on the MIS forms by the student, they appeared to react positively to that part of the system in which he or she was involved. The only negative reaction was in the difficulty of understanding the Student Profile Reports.

The previous three tables and their interpretation comprise an assessment of the overall reaction to ICMIS, by analyzing independently the results of each group. The information presented in Table 10 indicates the favorableness of the responses by using mean responses rather than percentages. The scale represents a range from 1 to 5 with 1 representing High Positive ratings and 5 representing Low Negative ratings. By combining the individual raw score means of all questions pertaining to the same aspect of the course a degree of favorableness

TABLE 9
CLASSROOM TEACHERS QUESTIONNAIRE RESPONSES

Characteristics	Item	Positve Resp.	Neutral Resp.	Negative Resp.	Omit
Information Recording of :					
Profile Forms by Teacher	1	50%	0%	50%	0%
Profile Forms by Students	3	50	0	25	25
MIS Forms by Teacher	7	25	0	75	0
MIS Forms by Students	8	0	25	0	75
Usefulness of:					
Profile Report	4	50	0	50	0
Progress Report	9	75	0	25	0
Ease of Understanding of:					
Profile Form	2	50	0	50	0
Profile Report	5	25	0	50	25
Progress Report	10	50	0	0	50
Use Again:					
Profile Report	6	50	0	25	25
Progress Report	11	50	0	25	25

TABLE 10
ITEM MEANS OF CHARACTERISTICS
BY USER

	Information Recording			Usefulness			Ease to Understand			Discuss with Student/Class			Use Again			Use Other Class			GRAND MEANS			COMBINED MEANS
	S	F	T	S	F	T	S	F	T	S	F	T	S	F	T	S	F	T	S	F	T	
Assessment Form																						
Teacher & Instruct. Time		(4)* 2.2	(7) 1.0																—	2.2	1.0	2.0
Student Time	(2) 3.2	(8) 3.4	(8) 3.0																3.2	3.4	3.0	3.2
Form Itself							(1) 3.1												3.1	—	—	3.1
Progress Report				(9) 3.7	(6) 2.2	(9) 2.7	(7) 2.6	(7) 1.8	(10) 2.0	(5) 2.7	(12) 2.8		(8) 2.4	(10) 1.5	(11) 2.0	(9) 2.7	(11) 1.5		2.7	2.0	2.4	2.6
Resource Report	(10) 3.4				(13) 3.3		(11) 2.1	(12) 2.0		(12) 2.7	(16) 3.0			(14) 2.1			(15) 1.5		3.0	2.4	—	2.9
Attitude Report	(13) 3.1				(18) 2.0		(14) 2.7	(15) 2.0		(5) 2.9	(22) 3.0			(20) 2.0			(21) 2.0		2.9	2.2	—	2.8
Profile Reports																						
General				(16) 1.8	(23) 2.0	(4) 2.8		(24) 2.5	(5) 3.3		(17) 3.0			(25) 2.0	(6) 2.3		(26) 2.0		1.8	2.3	2.8	2.4
Student Time	(17) 2.8		(3) 2.7																2.8	—	2.7	2.7
Teacher Time			(1) 3.0																—	—	3.0	3.0
Profile Form									(2) 2.8										—	—	2.8	2.8
Statistics Reports																						
Class					(28) 2.5			(29) 2.0			(17) 3.0			(30) 2.0			(31) 1.8		—	2.2	—	2.2
Student's Individual										(18) 2.3									2.3	—	—	2.3
GRAND MEANS	3.2	2.8	2.7	2.9	2.5	2.6	2.9	2.0	2.8	2.6	2.9	—	2.4	1.9	2.5	2.7	1.7	—	2.8	2.3	2.7	2.74
COMBINED MEANS		3.1			2.8			2.8			2.7			2.3			2.4			2.74		

1 2 3 4 5
Positive Neutral Negative

Mean Scale Values Range from 1 (High Positive Rating) to 5 (Low Negative Rating)

* = Item Number of Question is Circled

toward the area in question was determined.

To arrive at interpretable means, all questions were rerecorded to present answers as positive at the Strongly Agree and Agree level and as negative at the Disagree and Strongly Disagree level. A question such as number 7 of the faculty questionnaire, which sought a positive response in the Disagree and Strongly Disagree columns, was changed to the code for Agree or Strongly Agree. Thus, the question could be reworded to state: "The weekly progress reports were not difficult to understand or interpret."

The results provide further evidence of the strong positive feeling by all users to ICMIS. The most positive responses were that all respondants would like to use the system again in both the same class and in other classes. In only one area, the information recording of the forms, was there any negative tendencies.

In addition to the quantification of data presented in the preceding tables, anecdotal information was collected. In each of the questionnaires the respondent was asked to write an overall reaction to the entire incourse management information system. This question permitted open-ended responses and thus was not quantified. The following represents some of the positive statements derived from the questionnaires found in Appendix I:

Classroom Teacher Questionnaire:

> Although confusing at first, I am now finding them helpful.
> I would like to use them again.
> I think this system would be especially useful to those teachers with "problem" interns.

Student Questionnaire:

Anything to help students in future courses.
The forms really didn't take that much time.
Very good.
A step in the right direction.
Could be beneficial to students and professors once refinements in reporting system made.
OK, but of greater value to the instructor and not the student.
Progress report forms are useful and should remain.
Satisfactory and something pertinent.
Very useful in this situation.
Positive.

Faculty Questionnaire:

Timely and extremely helpful in tracking students and alerting me to those who need help.
Good but needs revision.
Very useful when there are many more students.
Can help us move from the "Small sections" approach to other arrangements of managing student learning.

The following represent either some concerns or some definite negative comments:

Students:

Results of reports were not made available to me so they were not of use to me.
Evaluation could be done each week for the first four weeks and then every two weeks for the remainder of the time.
Needs to be presented clearly to both the student and teacher.
Needs revisions so that output is not so difficult to decode
It was too complex for the value or the information it provided.
I did not enjoy filling out the paper work.
The weekly forms were too time consuming for me.
Felt it was a waste of time.

FSU Faculty:

Too few returns to make accurate judgment.

Classroom Teachers:

The amount of forms need to be alleviated after the fourth week.
The timing was bad; always rushed on Friday and there was not enough thought given to filling out the form.

Evaluation of Costs

One of the most crucial factors associated with the development of management information systems is that of costs. The following three tables indicate an estimate of the cost of operating the ICMIS system. Information on costs include not only dollar costs but also time costs.

Tables 11,12, and 13 are a summary of the costing information. Table 11 includes two types of information: first is a cost by function for each type of user in the system; this cost is indicated by time to complete the task. Second is cost per student in relationship to the function being performed.

As the data indicates, the total man hours required to operate ICMIS during the study was 122½ hours. The total cost, excluding computer time, was $631.25. The average cost per student (based on the 106 students who were serviced during the study) for the various personnel to operate all possible subsystems exclusive of computer time was $5.94. By subtracting the high cost of preparing the graphs of the Profile Reports, the coding of the Profile forms, and the other profile operations, the cost per student averages $4.47.

No salary equivalency was placed on the functions performed by either the student or the course instructor. The calculation of their costs of participating in the system is viewed at in terms of the time spent performing the functions rather than in terms of money. Exclusive of the varied times expended by an instructor reviewing reports, the

TABLE 11
ICMIS DATA FOR PERSONNEL COSTS

PERSONNEL	TYPE OF ACTIVITY	TOTAL TIME TO PERF. ACTIVITY	AVERAGE TIME PER ACTIVITY	SALARY EQUIV. PER HR.	TOTAL COST	AVERAGE COST PER STUDENT FOR THE TERM
CIM	Varies	60 Hr.	N/A	$8.62	$517.87	$4.88
Key Puncher	Card Prep.	38½ Hr.	8 Min. per Cd.	2.00	75.89	.71
Student Assistant	Pickup & Delivery	21 Hr.	20 Min. per Trip	1.80	37.49	.35
Course Instructor	Interact With CIM	3 Hr.	55 Min. All Meets.	--	--	---
Student	Prepare Forms	Varies	1½ Min. per Form	--	--	---
TOTAL	---	122½ Hrs.	--	--	$631.25	$5.94

typical instructor was required to spend approximately three hours per term to utilize the system. Despite some of the students' statements, the average time required by a student involved in all four subsystems was less than seven minutes to complete a set of forms plus twenty to thirty minutes spent receiving information on system procedures.

Table 12 indicates the actual costs associated with the production of the computer reports. The total computer costs were $139.07 which averaged out to $4.63 per student. Again, by eliminating the low volume (14 students) profile reports, the average cost per student dropped to $2.75.

The information contained in Table 13 represents both actual and hypothetical user and computer costs. The hypothetical cost for the computer program, $1.31, is based on an estimated, regular use of the ICMIS by 106 students. Actual cost of the program, $4.63, is based on actual number of student users involved in each of the computer program runs. This number ranged from 14 to 106. The difference in computer cost, then, is accounted for by the number of users. The larger the number of ICMIS users, generally speaking, the greater the reduction in computer cost per average student.

TABLE 12
TOTAL COMPUTER PROGRAM RUN COSTS FOR
ALL COURSES COMBINED

TYPE OF COMPUTER PROGRAM	TOTAL RUNS DURING TERM	TOTAL COST CNTL. MEMRY.	TOTAL COST CARDS READ	TOTAL COST PRINT LINES	TOTAL COST	NO. OF STDNTS PER REPT.	AVERAGE COST PER STUDENT DURING TERM
Loading Course Information	1	$ .23	$ .14	$ .15	$ .51	106	$ .004
Loading Instructor Information	1	.11	.07	.10	.28	106	.002
Loading Student Initilization	1	1.25	.17	.21	1.63	106	.015
Loading MIS Information	10	18.15	2.88	1.50	22.53	106	.212
Printing Weekly Progress Report	10	27.45	2.70	6.65	36.80	106	.347
Printing Resource Program Report	10	3.88	2.95	4.86	11.69	96	.121
Printing Attitude Report	10	9.20	4.59	6.58	20.37	41	.496
Printing Profile Report	10	8.41	4.21	9.25	21.87	14	1.560
Printing Class Statistics Report	2	13.85	1.44	2.18	17.47	106	.164
Printing Individual Student Class Statistics	Varies	.80	.24	.36	1.40	---	1.40
Printing Individual Profile Statistics Report	2	1.70	.80	2.02	4.52	14	.323
TOTAL	--	$85.03	$20.19	$33.86	$139.07	--	$4.63

TABLE 13
COMBINED PERSONNEL AND COMPUTER COSTS
(ACTUAL AND HYPOTHETICAL)

	Performed By	Total Costs	Total Students Served	Average Cost Per Student
ACTUAL	Personnel	$631.25	106	$5.94
	Computer	139.07	Varies Between 14 and 106	4.63
	TOTAL	$770.32		$10.57
HYPOTHETICAL	Personnel	$631.25	106	$5.94
	Computer	139.07	106	1.31
	TOTAL	$770.32		$7.24

Chapter VI

Discussion and Conclusions

Summary of Findings

The most important finding in the formative evaluation of the in-course management system was that for all intents and purposes it worked. Not only did all the subsystems perform as designed, but also the users responded favorably toward the system.

Six questions were originally posed to determine if the system was successful. The following section of this chapter includes these questions and a summary of the findings related to these questions.

1. Can all the varied inputs needed to monitor the student's progress in an individualized setting be accomodated to the satisfaction of both the student and the instructor?

   Generally, the results indicated that a significant volume of course progress information can be collected from students without requiring them to interact directly with computers for data collection.

   The evaluation results indicated a somewhat varied opinion by the students and the instructors as to the preparation of the input forms for course progress reporting. The instructors held a favorable opinion as to their own preparation of input forms with 2 of the 5 instructors rating this function positively and the

remaining 3 rating it neutrally. At the same time 3 of the 5 faculty instructors indicated that the preparation of the forms took too much of the students time with only 1 person rating that it did not. The students, on the other hand, were negative toward the preparation of the assessment forms as 43% rated that it had taken too much of their time to prepare the forms compared to the 34% who indicated it had not. Although no specific question was asked regarding the quickness with which the faculty received their reports, any report could be printed within 24 hours from the time that the input documents were submitted to the CIM office.

2. Can the monitoring of resources, used in a CBE or individualized setting, be reported in such a manner as to provide useful feedback to the instructor for his future course revisions?

   Indications were that such resource data can be easily collected. However, the original resource categories established by the instructor were often ignored by the student in his responses. The student tended to submit data that either required recoding or creation of new categories. Answers to the evaluation statements by the instructors indicated 75% would use this subsystem again in the same class and 100% in other classes.

3. Can field-based performance data be collected, analyzed, and reported to the instructor in order to permit him to evaluate the student's performance?

Questionnaire results indicated that meaningful data can be collected from a field situation, with summarized reports returned to the field instructors for interaction between the public school teacher and the student intern. Evaluation responses also indicated that the public school teacher preferred less frequent data collection and reports once an initial period of interaction with the student intern had been completed.

4. Can ICMIS be used in both undergraduate and graduate courses?

The ICMIS was used in five undergraduate classes and one graduate class. Information collected from the two groups did not indicate any difference in usage. Observation of the individual questionnaires indicated that some students of both groups disliked the system, while others in both groups reacted favorably.

It is interesting to note that 8 of the 17 students in the graduate course were non-native English speaking students. Their usage of the system was extremely high with 7 of the 8 foreign students being active users compared to only 5 of the 9 American students. This observation suggests that lack of high-level competency in the English language is not a hindrance for the completion of the ICMIS procedures.

5. Can attitudinal data be collected from students, computer analyzed, and reported to instructors in order to identify potential trouble areas in time for corrective action to be taken?

Although no apparent class difficulties occured in any of the courses, the Attitude Reporting subsystem was used by one instructor. It would appear that the course instructor received it favorably since he would again use it in the same class and would use it in other classes of his..

An assumption often underlying the solicitation of user opinions on various systems is that the only results received will be those complaining of problems. However, the volume of the responses received from the participating ICMIS students indicated an extreme willingness to identify, in writing, those aspects of the course that they believed were worthwhile.

6. What are the costs of operating an in-course management information system and can they reasonable be absorbed within the operational budget of a teacher education program?

The cost of operating the sytem within a teacher education program appeared to be reasonable. Certainly the personnel cost of $5.95 per student for 106 students in the system was one that might be reasonably absorbed by any operating education agency. This figure would, likewise, decrease as more students entered the system. Bowen and Douglas (1971) in their study of instructional costing indicated that ranges between

$201 and $442 per student was typical. This cost includes indirect costs such as computer usage, thus the computer costs associated with full implementation of all reports for all students ($1.31 per student) seems to be a reasonable one.

Discussion

As in any situation, problems and side issues did arise with the formative evaluation of ICMIS. Some concerns and their possible resolution are as follows:

1. Some students complained of the time spent in coding the various forms. This could be alleviated by reminding the student that they could use the terminal input subsystem, which was designed but not used by any student. Another possibility is to supply the student either pre-printed forms or pre-punched computer cards. With either of these latter two inputs, the student would need only to fill in the date and the grade received on an activity.
2. In completion of the Resource, Attitude, and Profile Reports, answers given to the open-ended response question were many and varied. To reduce this complexity, a list of often-used information could be supplied to the student for checking. Thus, only unanticipated situations would be left for open response.

3. Operating cost for the preparation of the Profile Report was expensive. This cost could be reduced by (a) having a lesser-salaried staff member, rather than the CIM, proof and code; (b) precoding some of the possible responses as mentioned previously; (c) using the capabilities of a graphics computer program to graph the final Profile Statistics Report.

4. One of the original difficulties in the undertaking of the implementation of ICMIS was that currently at FSU there is no total ongoing CBE program. Seperate CBE and individualized courses had to be used in the study instead. The question then arises whether the ICMIS could be used in a full CBE program. The answer is yes, with some modificaitions.

Upon mastery of various competencies, the student in a CBE program progresses to other competencies. The traditional course-lecture type of instruction often ignored previous learning or, worse, assumed learning had taken place when it had not. A CBE program operates not within the course structure but rather within a series of competencies. Monitoring of the movement through these competencies would be simplified by the ICMIS. When the student had completed a set of learning tasks, the system would record that completion. A file of completed competencies would always be available.

In another situation, where the typical course structure would still be in use, the competencies achieved in one course

would be matched with competencies in other courses; similar competencies would be reported to both the instructor and program developers. Thus revisions would allow courses previously perceived as separate to build upon those competencies already demonstrated by the student.

5. Probably the most important factor for the success of the ICMIS is the personal involvement of the course instructor. In one instance, the somewhat negative attitude of the instructor toward the usefulness of certain segments of the ICMIS connoted to the students a lack of importance or necessity in properly following the prescribed procedures. If any course instructor does not constantly demonstrate to students the importance of the preparation and the timely completion of the data, then students will begin to neglect or quit altogether any submission of information.

Future Research and Development

The ICMIS system demonstrates that a multi-faceted information system for course data management can succeed. However, there are still several problems in the movement towards a Total Information Management System (TIMS). One of the several researchable projects is the determination of whether the ICMIS can function in a non-education environment. Can those courses in the Arts College, the Business Colleges, the Engineering schools, and the Health Professions adopt the sytem or must the ICMIS be so modified that it would not be worth the effort? Hypothetically

there appears to be no reason why any present ICMIS subsystem could not be used by only changing various report headings and codes.

A second project needing research is the availability for the ICMIS or portions of it and other systems to be used on a demand basis by faculty. One of the advantages, as previously mentioned, in the lecture method over the individualized instruction method is that the "Grade Book" is always up-to-date in terms of the instructor's needs. The difficulties with demand reporting in computer systems is their cost, their inaccessability, and their need for sophistication by the user.

It is costly to have a set of computer files always available for an inquiry that may or may not come. Likewise, it is irksome for a faculty member, an administrator, or a student to have to "go to the resource room" if that person wants information because it is in that room that the terminals are located. Finally, it still requires some understanding of a structured computer language to use an inquiry system and because of this, the typical educator does not want to take the time to learn that language before using the computer.

The following are several suggestions to arrive at a starting point to solve these problems just mentioned. To alleviate the costly need for a system to "always" be available, a specific time schedule for inquiry could be generally made known and available for users, thus actions could be only requested at that time. ICMIS could assist in the scheduling of such priorities.

The problem of "going to where the terminal is" and the sophistication problems are only going to be solved completely when more complex computer languages permit the user to interact with the computer as easily as he uses a telephone to aid him in communicating across great distances. Too often, however, the inability to reach the non-sophisticated user is an unwillingness to do so. Harris (1972) points this out when he states, "The computer technicians have so effectively created an aura of the mystical about the entire computer operation that educators, either in disgust or bewilderment, have avoided coming in direct contact with the computer [p. 17]." Dick and Rebhun (1972) also indicated that to avoid this problem the computer programmers must allow for user errors, long delays in inputting, and they must have easily understood documentation. Dick and Rebhun further point out the advantages to meeting these needs as they state, "The advantage to developing this type of capability is the philosophical one that the tool (the computer) should be subservient to the needs of the user and not vice-versa, as is often the case[p. 9] ."

A third problem that the In-Course Management Information System is only beginning to answer is raised by Jung (1972) for the incorporation of a diagnostic and prescriptive phase in the learning system. It is proposed that by using a series of diagnostic testing situations that the module for instruction stored in a computer system could be assembled to produce a prescription that is specifically tailored for the learning needs of a specific student. It would appear that the incorporation of

the testing files within a new ICMIS subsystem are not too difficult but the linking of their outcomes with specific learning modules is more complex. The previously mentioned total competency-program use of ICMIS is one approach that could be used to begin the packaging of learning tasks.

An additional area where a management system would be needed is in the general move toward taking the instructional classes for the training of teachers out of the classroom environment and placing them in alternative settings such as the public schools and other institutions. The interaction between the learner and the instructor (TV, school model, peers, etc.) must allow for the capturing of the data at the learning source. At this time there does not appear to be anything that could be done, technological or otherwise, until the educational philosophy that learning can take place outside the classroom walls, begins to take root in the minds of the public.

A final area, closely related to the just mentioned environmental problem, is based on the assumption that the educational experience for learning is life-long. If this is so, then data other than what the person "remembers" must be recorded. The purpose behind this data gathering is for the individual to occasionally inquire into his "learning file" to see if previously learned competencies have not been forgotten. If the testing of them indicates that "new or renewal" learning should take place then the previously described prescription of what is needed would be presented to the learner. Even though this possibility of "super data banks" smacks of "Big Brotherism" either a unique key to accessing

one's own data files would be available to only the proper user (voice-print or hand-print entry) or the typical "go back to school syndrome" will be the only viable alternative when one wants to learn or relearn.

Chapter VII

Summary

The primary objective of this study was the design, development, implementation and evaluation of an In-Course Management Information System (ICMIS). The system was designed to meet the data management needs within a competency-based educational system. Essentially, the results of the evaluation indicated that such a system was successfully developed.

The four major components of the study were: (a) the identification of a course instructor's information needs; (b) the design of ICMIS; (c) the implementation of ICMIS; and (d) the evaluation of ICMIS.

Identification of Information Needs

To determine what information was needed by potential users a Handbook of Procedures for a hypothetical system was developed. The Handbook described a number of potential features of an in-course management system. Five faculty members in the College of Education at Florida State University agreed to participate in the design and evaluation of the ICMIS. From interactions between the faculty members and the Course Information Manager (CIM), the types of information needs were identified.

System Design

On the basis of the course instructor's information needs, fifteen

computer programs were developed and implemented and appropriate data input forms were designed. The procedures for using the system were also documented.

The basic computer reports in the system were (a) Student Course Progress Reports which printed the latest status of students with regard to their completion of various learning tasks; (b) Resource Utilization Reports which provided feedback on the value and accessability of the instructional resources; (c) Attitude Reports which provided student opinions of various course activities during the past week; and (d) Field Profile Reports that provided a compilation of various rating reports concerning a student intern's weekly performance.

System Implementation

The implementation of the ICMIS occured during the Spring Quarter, 1974. The system was used by 106 students in both undergraduate and graduate courses. These courses took place both on-campus and in a public school.

System Evaluation

Three separate evaluation questionnaires were designed to obtain the opinions of the various ICMIS users. Questionnaires were sent to all students, faculty, and public school teachers involved in all courses. In addition, costing data was gathered from personnel time charts and from cost data provided on print-outs from the computer.

The analysis of the feedback from the users indicated a favorable attitude towards the ICMIS. Over 78% of the FSU faculty questions, 71%

of the student questions, and 55% of the classroom teacher questions resulted in positive group responses. Negative opinions were generated on only 6% of the faculty questions, 18% of the student questions, and 9% of the classroom teacher's questions.

Information concerning costs indicated the total cost to operate the ICMIS for 106 students was $770.32. This total cost was divided into personnel costs of $631.25 and computer reporting costs of $139.07. The average cost per student was $7.26. The literature does not indicate whether these are reasonable figures or not. However, a decreasing per student cost as more students enter the system would appear to justify the usage of the ICMIS.

APPENDICES

APPENDIX A

HANDBOOK OF PROCEDURES

1

A FACULTY/STUDENT/CLASSROOM TEACHER HANDBOOK OF PROCEDURES TO ASSIST IN THE MANAGING OF COURSE INFORMATION IN AN INDIVIDUALIZED INSTRUCTIONAL PROGRAM

SECTION I INTRODUCTION

Purpose

It is the intent of this Handbook to describe the procedures needed to manage course information in an individualized instructional course or program. These procedures are described separately for either the FSU teaching faculty of the course, the student in the course, or the classroom teacher working with the course.

A legitimate question to ask is why is a course management system required? answer this we must look at what some of the generally acceptable characteristics for individualized instruction are:

1. Self-pacing
2. Alternate routes through the instruction
3. Independent study

The very nature of these characteristics make it extremely difficult for the course instructor to monitor the status and progress of the students. It is proposed that the procedures to be discussed in this handbook will assist the course instructor in monitoring the student's progress, monitoring the utilization of course resources, and at the same time permit the student to be aware of his own status.

What Information Is Needed and What Information Will Be Received

It is difficult to determine what any instructor or student either desires in the way of information from any system or what data he/she is willing to provide to obtain such information. Table number 1 describes various informational needs that could be used by the FSU course instructor. The course instructor may choose to participate in all or only a part of the system by choosing either sections A,B,C, or D and indicate this on the form at the end of the Handbook.

Table number 2 describes the information needed from the FSU student. Finally, Table number 3 describes the information needed from the classroom teacher.

FSU COURSE INSTRUCTOR
INFORMATION TABLE--1

Person to Supply Information	What Supplied	What Received
Course Instructor (A)	Course Objectives	Conversion of Objectives to statements of competencies.
Course Instructor (B)	1 Same as Section A plus 2 Number and types of assessments (test, products, field performances) for each objective. 3 Results of passing/failing assessments.	1 Same as Section A plus: 2 Progress reports by all students in a class. 3 End of term statistics for objectives by attempts & times.

2

Course Instructor Ⓒ	1. Same as Section B plus: 2. Number & name of resources & materials available.	1. Same as Section B plus: 2. Statistics as to resource usage, value, & availability.
Course Instructor Ⓓ	1. Same as Section C plus: 2. Name & location of classroom teacher for each student. 3. Observational ratings of student's field performance.	1. Same as Section C plus 2. Statistical profile of student's field performance.

FSU STUDENT
INFORMATION TABLE--2

Person to Supply Information	What Supplied	What Received
Student	1. Results of passing/failing of assessments. 2. Assessment attempts. 3. Utilization of resources 4. Value of resources 5. Self-ratings of field performance. 6. Attitudinal data as to progress of course.	1. Progress report of class standing. 2. Statement of competencies completed (at end of course).

CLASSROOM TEACHER
INFORMATION TABLE--3

Person to Supply Information	What Supplied	What Received
Classroom teacher	Observational ratings of student's field performance	Statistical profile of student's field performance.

The following three sections provide the details needed to operate the system. Each section is written specifically for the role that any individual has in the system. Following the three sections are the various Appendices describing the various forms and collection procedures.

3

SECTION II FSU FACULTY MEMBER PROCEDURES

This section of the Handbook describes those procedures in which the FSU faculty member (hereafter called the Instructor) must follow to participate, depending on which Section in the Instruction Table has been chosen. In most instances the participation attempts to be minimal so that the Instructor's time and energies are not unnecessarily abused.

Course Objectives and Competencies

1. A copy of the printed objectives indicating what the course expects of the students will be given to the Course Information Manager (CIM).
2. The CIM will code the objectives using the Multiple Index System for Classifying Teacher Competencies that is found in the Florida Catalog of Teacher Competencies. The results of this coding will be approved by the Instructor. The level of performance expected will also be agreed upon.
3. Once the coding has been completed then a printout will be produced that represents a conversion of the Objectives to Competency statements.

Assessment Procedures

1. A list of the assessments (tests, papers, oral products, field-performances, etc.) that the Instructor wishes to use should be given to the CIM.
2. If the Instructor wants to establish any time or attempt notification limits or deadlines for the students then these should be given to the CIM.
3. The assessment collection procedures are described in Appendix A. They describe what must be collected if the assessments are either pencil/paper tests, computer tests, product-oriented tests, or field-performance assessments.

Resources Procedures

1. A list of the resources the student is to use (and the number of each if possible) will be collected by the CIM.
2. The CIM will supply resource availability and value reports to the Instructor
3. Resources are such items as the student's text, micro-film material, library books, people, etc.

Reports to be Received

The Office of Management Information Systems (OMIS) staff, through the CIM, will supply to the Instructor a series of computer-generated reports as to the progress of students in their class, the availability and value of resources being used, and other information deemed valuable. These reports may be as follows:

1. Reports on demand and weekly
   a. Class Progress Reports
      (1) This report will indicate the progress of all students in a class. It will indicate whether competencies (objectives), sub-competencies (tasks), or enablers (sub-tasks) have been completed and how many attempts have been made to completeth

b. Red Flag Reports
(1) This report is of any student who has exceeded any of the limits established by the Instructor.
c. Resource Reports
(1) This report will printout the utilization of material, the demand for material that was not available, a reorder message if needed, and a value of the resources in the opinion of the students.
d. Attitudinal Reports
(1) This report will attempt to point out to the Instructor any subject, person, or situation that is either doing exceptionally well (in the opinion of the students) or doing exceptionally poorly.

2. Course ending reports
a. Class Progress
(1) The listing of all students who have successfully completed all the objectives and those that have not.
b. Class Statistics
(1) A set of reports that provide data concerning the course objectives and the average number of students completing these objectives, the average time for completion, and the number of attempts to complete the objectives.
c. Resource Reports
(1) A final report of the resources used, their availability, and their value as perceived by the students.

SECTION III FSU STUDENT PROCEDURES

This section will attempt to spell out what you must supply to the system in order for your final grade in the course to be properly ascertained. This section will also describe what you will receive from the system. All data gathering forms must be submitted to either 318 Education, 208 Education, or to your instructor.

Course Objectives

Once your instructor has submitted the course objectives to the Course Information Manager (CIM) then they are translated into statements of competencies . Upon your successful completion of the course an individual printout of the competencies that you have completed will be supplied to you.

Assessment) Procedures

1. The collection of assessment results, be they written tests, oral tests, term papers, video-tapings, field-performances are crucial to the system. Even though you have bben told that you may retake assessments many times without penalty the Instructor still wants to monitor your progress.
2. The procedures as to what is to be collected and how it is to be collected are described in Appendix A.

Resource Procedures

1. Throughout the duration of this class you will be asked to use various resources (text books, library books, PI material, people). In order to evaluate the utilization of the resources (do we need more or less; are they valuable or not; etc.) you are being asked to submit inputs on your resource usage.
2. The form to report the usage of resources is found in Appendix B. You will be able to list several types of resources on one page. Even though the form asks for your name and Social Security Number it will remain the property of the CIM and not be used in the report or given to the instructor.

Attitudinal Procedures

1. Too often in the past strong negative feelings about what students are being asked to do have gotten out-of-hand without the instructor even knowing that something is wrong. To prevent that from happening and thus making your program more viable, a weekly course attitude form is to be completed (you, of course can also indicate positive feelings about the course).
2. The attitude form is described in Appendix D.

Reports to be Received

The following reports will be sent to your instructor weekly:

1. Class Progress Report
   a. This report indicates the relative standing of you and the other member of your class. (This is also sent at the end of the course.)
2. Red Flag Report
   a. A listing of students who are behind in the progress through the course on certain criteria established by the instructor.

3. Resources Report
    a. The status, availability, and worth of the resources that you are using. (Also sent at the end of the course.)
4. Attitudinal Report
    a. A summarized accounting of the course values as submitted by you and your classmates.

The following report is available upon your requesting it through the Office Of Management Information Systems (OMIS) in 208 Education.

1. Class Progress
    a. A printout of your standing relative to the average standing of the other members of your class. The report will print the standings but only your name and not the names of your fellow classmates.

The following report will be sent your Instructor at the end of the course inaddition to those mentioned above:

1. Class Statistics
    a. A set of reports indicating the average completion time, attempts, etc. by the course objectives.

The following report will be available to you at the end of the course:

1. Competencies Completed
    a. A listing of the set of competencies and their level that you successfull completed in the course.
    b. These competencies will become a part of your permanent record in the College of Education at FSU and if you desire may be sent to any employer you might request.

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SECTION IV CLASSROOM TEACHER PROCEDURES

The following paragraphs will attempt to describe how you may help in the evaluation of the student's performance in your classroom. If you have any questions concerning these procedures please feel free to contact the Course Instruction Manager (CIM) in the College of Education Room 208. The phone number is 599-3235.

Course Objectives

If desired, the course objectives that the student is attempting to meet will be given to you. This set of objectives and competencies would indicate what it is that the FSU Instructor hopes the student will receive from the experiences both in the university classroom and in the participating school's classroom.

Assessments

The student is required to complete various assessments . Since it is desirable for t FSU faculty instructor to monitor the progress of students involved in individualized learning situations then the student and others need to supply various types of information that will be used in the progress monitoring.

It is hoped that as you work daily with the participating student that you will find the time to assist in the evaluation of his/her progress. We are asking that two, and at times three, types of evaluations be provided about the student. One type of evaluation will be initiated by the student through a weekly self-rating questionnaire. Another type will be done by a classroom observer who will be visiting with you occasionally. Finally we would like to ask that you assist in this process by the weekly completion of a rating questionnaire (See Appendix C). This questionnaire will be of two parts--one part will consist of simple rating checkmarks in response to directed questions. The second part of the questionnaire consists of a few open-ended responses that require only a few sentences each to answer.

When all the various types of ratings are received at FSU then they will be coded and a progress profile of the student's performance will be available to the student, the FSU faculty member, and to you if desired.

Reports to be Received

The following report will be sent to you weekly if you desire:

1. Student Profile
    a. As previously described, this report will represent a consolidation of the various inputs from you, the student, and any classroom observer.

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APPENDIX A
ASSESSMENT COLLECTION PROCEDURES

The following types of assessments are described as to what procedures are needed for inputting them to the system:

A. PAPER/PENCIL ASSESSMENTS

1. Objective and Open-Response Tests

a. Grading by Student---The student scores the test using a key, determines if the test is passed, and completes the MIS Assessment Form that is produced below. The form is returned to either Education 318, Education 208, or to the student's instructor. The form is then coded by the Office of Mangement Information Systems (OMIS) staff for inputting into the reporting system.

b. Grading by Other than the Student--The passing or failing of the test is recorded on the MIS Form. It is then collected by the OMIS staff.

MIS ASSESSMENT FORM

A 1 Student Social Security Number _____ 2 - Student Name (Last,First) _____ 12

Course ID — Prefix _____ 30 Number _____ 33 Section _____ 37

Instructor Name _____ Instructor Code _____ 39

The following assessment information may be filled out several ways under the Grade Column. If the assessment is on a pass/no pass basis, then the words PASS or NO PASS should be recorded. If a grade is recorded, it may be either: A,B,C,D,F,I, or any numeric.

(Three assessments may be completed on this form)

Level	Competency (Objective)	Sub-Competency (Task)	Enabler (Sub-task)	Date Attempted (Mo/Day)	Grade
42___	_____	_____	_____	_____	____
55___	_____	_____	_____	_____	____
68___	_____	_____	_____	_____	____

Signature _____ Date _____

B. COMPUTER ASSESSMENTS

1. In some instances, a computer terminal will be available for inputting this reporting data. If this is the siuration then all inputs from the student, the classroom teacher, the classroom observer, or the FSU faculty member may be entered from the terminal. The user will be directed by the terminal for the various reponses necessary.

C. PRODUCT COMPLETION ASSESSMENTS

1. If any product must be produced by the student for assessment then the MIS Assessment Form will be completed by the assessing individual and will be collected as previously described. Some examples of product completions could be:
   a. A report that must be reviewed by the instructor.
   b. The construction of an object that must be reviewed by the instructo
   c. A video-taping of a micro-teaching lesson that must be critiqued by the student and/or peers or an independent observer. (The Input Form may be initiated by the student (if permitted) or by anyother designated individual (s)).

D. FIELD-GENERATED ASSESSMENTS

. . One type of field-generated assessment is the measure of competencies (objectives) sub-competencies (tasks),etc. that must be performed in the field setting. The MIS Assessment Form will be completed by the assessing individual. The MIS Form must be submitted weekly to the CIM.

2. Another type of assessment will consist of the collection of the combined responses by the student, the classroon teacher, and the field-centered instructor concerning the objective and subjective values of measuring the performance of the student in a classroom situation.
   a. The student will submit a weekly assessment of the work that week. The form consists of forced-choice and open-ended responsee (Appendix C). The classroom teacher will submit a weekly critique of the student's performance also using a form similar to the students. The field-centered instructor will also use the same type of form.
   b. All of these forms will be submitted to the OMIS staff for coding and inputting through a Profile Program. The results will be supplied to the Course Instructor.
   c. In some instances a computer terminal will be available in the classroom If this is the case then the procedures described above under Computer Assessments will be followed.

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APPENDIX B
RESOURCES INFORMATION FORM

The following form is to be used by the student to assess the value and utilization of the various resources and materials that he or she is asked to use in the course.

RESOURCE UTILIZATION AND VALUE FORM

1-5 Student Social Security Number _____ 2-12 Student Name _____

Course ID: Prefix ___ (31) Number ___ (34) Section ___ (38)

Instructor Name _____ Instructor Code ___ (40)

Please indicate below what was used, time used, attempts to use, and your opinion as to its value.

RESOURCE USED (INDICATE Text, Film people, etc.)	BRIEF TITLE	TIME SPENT USING IT		# OF ATTEMPTS TO USE IT (IF YOU ATTEMPT TO USE A RESOURCE & IT WAS NOT AVAIL. COUNT IT AS ATTEMPT #1 etc., IF SUCCESSFUL THE 1ST TIME RECORD A 1)	APPROX. TIME OF DAY ATTMPT. TO USE IT BUT UNSUCCES. 1=AM 2=Aft. 3=Night 4=Weekend 5=Comb. of above	YOUR OPINIO OF THI RESOUR 1=Very Va 2=Valuble. 3=OK 4=Marginz 5=Not Valuable
		HRS.	MIN.			
43	56	71		75	77	80
43	56	71		75	77	80
43	56	71		75	77	80

SIGNATURE _____ DATE _____

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APPENDIX C
PROFILE RATINGS FORMS

The following three forms are to be used (1) by the studet for inputting his/her own assessment of his/her rating of performance for the week; (2) by the classroom teacher for rating the students performance during the week; and (3) by the field-centered instructor for rating the student's performance for any particular day or week that the instructor is present. Only one form each will be filled out by any particular individual.

STUDENT SELF-PERFORMANCE RATING FORM
(To Be Completed Weekly)

To assist in the evaluation of your performance in the classroom situation, the following information must be completed weekly. If you delay in this task then your perception of your performance is dimenished by all events since the date you are assessing.

You should submit your ratings to either your course instructor at FSU or the Office of Management Information Systems in 208 Education building.

6 Social Sec. Numb. _____ (2) Name (Last,First) _____ (11)
1

Course ID — Prefix (30) _____ Number (33) _____ Section (37) _____

Course Instructor Name _____ Instructor Code _____ (39)

Participating School Instructor's Name _____ Code _____ (42)

Participating School Name _____ School Code _____ (45)

What period of time does this rating cover Month _____ (47) Days _____ (49) Year _____ (53)

54 Indicate what grade(s) you worked with most often this week _____

Place a check under the rating scale that best describes how you believe you performed in that function. during this past week.

	Extremely Well (1)	Good (2)	Fair (3)	Unsat (4)	Not Applic. or did not do (5)
55 Your instruction of a subject(s)					
56 Your work with varied subcultures & minority groups					
57 Your work with small groups or individuals					
58 Your work with large groups					
59 Your preplanning for TODAY's tasks					
60 Your ability to motivate the class					
61 Your use and selection of instructional aids and materials					

(OVER)

	Extremely Well	Good	Fair	Uns.	Not Applic.
62 Your understanding children's (pupil) behavior-					
63 Your classroom managemnent and routines ---					
64 Your handling of clerical tasks ----------					
65 Your coping with discipline ----------					
66 Your use of audio-visual materials ----------					
67 Your familiarization with special services in the school: ie. guidance counselor etc.---					
68 Your interpersonal relations with the pupils --					
69 Your interpersonal relations with the class room instructor ----------,----------					
70 Your interpersonal relations with the administration at the school ----------					
71 Your interpersonal relations with parents ----					
72 Your overall opionion of your performance this week----------					

In a few words each what do you believe was your most successful venture (activity, performance etc.) during the week and your least successful.

73 Most Successful _____

_____

75 Least Successful _____

_____

77 Is there anything in your performance or in the accumulation of all your work in the schools that you believe you need more preparation (guidance, instruction etc.) from FSU? Yes____ No_____ Unsure _____
If YES then explain below in one or two sentences.

78 _____

_____

_____

_____

_____

Signature _____

13

CLASSROOM TEACHER PERFORMANCE RATING OF FSU STUDENT
(To Be Completed Weekly)

To assist in the evaluation of the FSU student's participation in your class we would like to ask your cooperation in the rating of the student. We would like for you to complete the following form WEEKLY and submit it to your administrative office where it will be sent to the Office of Management Information Systems FSU 208 Education Tallahassee, Florida.

Should you desire more forms please see your administrative office secretary. If you have any questions please feel free to contact the FSU course instructor of the student or the Course Instruction Manager at FSU--599-3235.

Your Name (Last,First) _____ Your School _____
Student's Name Being Rated (Last,First) _____
11

Information in this box will be completed at FSU:
7 Student Soc. Sec No. _____ Course ID Prefix Number Section
2 30 33 37

FSU Course Insructor Name _____ Instructor Code _____
39

Participating Instructor Code (42)_____ Part.School Code (45)_____

What period oi time does this rating cover Month Days Year
47 49 53

Place a check mark under the rating scale that best describes how you have perceived the performance by the FSU student during this past week.

	Extremely Well (1)	Good (2)	Fair (3)	Unsat (4)	Not Applicable or Unable to Determir (5)
55 The student's instruction in a subject(s) ----					
56 The student's work with varied subcultures and minority groups ----------					
57 His/her work with small groups or individ.--					
58 His/her work with large groups ----------					
59 His/her preplanning for the day's task ------					
60 His/her ability to motivate the class --------					
61 His/her use & selection of instructional materials and aids ----------					
62 His/her understanding of childrn's (pupil) behavior ----------					
63 His/her classroom management and routines--					
64 His/her handling of clerical tasks ----------					

(OVER)

14

	Extremely Well	Good	Fair	Unsat	Not Applic.
65 His/her coping with discipline					
66 His/her use of audio-visual materials					
67 His/her familiarization with special services in the school: ie. guidance counselor etc.					
68 His/her interpersonal relations with the pupils					
69 His/her interpersonal relations with you the classroom instructor					
70 His/her interpersonal relations with the administration of the school					
71 His/her interpersonal relations with parents					
72 Your overall opionion of the FSU student's performance this past week					

In a few words each what do you believe was the FSU student's most successful venture (activity, performance etc.) that you observed and his/her least successful.

73 Most Successful _____

_____

75 Least Successful _____

_____

77 Is there anything in either this student's performance or in your belief in general that you see a need for more preparation (guidance, instruction etc.) from FSU? Yes _____ No _____ Unsure _____
If yes would you please explain in one or two sentences.

78 _____

_____

_____

_____

_____

Signature _____

15

FIELD-CENTERED INSTRUCTOR PERFORMANCE RATING OF FSU STUDENT
(To be Completed Weekly or Upon Finishing Specific Observation Tasks)

To assist in the evaluation of the student's performance in a school setting, we would like to ask your cooperation in the rating of the student. We would like for you to complete the following form upon completion of your observation OR weekly and submit it to the Office of Management Information Systems FSU 288 Education

Should you desire more forms or have any questions concerning its use please contact the FSU course instructor of the student (if you are not that person) or the Course Information Manager at FSU 599-3235.

Your Name (Last,First) _____ School Observing _____
Field-Centered Instructor's Name _____
Student's Name Being Rated (Last,First) _____
11

The information in this box will be completed at FSU
8 Student Soc. Sec. Numb. (2) _____
Course ID Prefix Number Section
30 33 37

FSU Course Instruct. Name _____ Instruct. Code (39) _____
Field Instructor Code (42) _____ Particp. School Code (45) _____
Observer Code (53) _____

What date is this rating for Month _____ Day _____ Year _____
47 49 51

Place a check mark under the rating scale that best describes how you believe that the FSU student performed today while you observed him/her.

	extremely Well (1)	Good (2)	Fair (3)	Unsat (4)	not Applicable or Unable to Determine (5)
55 The student's instruction in a subject(s) ----					
56 The student's work with varied subcultures and minority groups ----------					
57 His/her work with small groups or individ.--					
58 His/her work with large groups ----------					
59 His/her preplanning for the day's task ------					
60 His/her ability to motivate the class --------					
61 His/her use & selection of instructional materials and aids ----------					
62 His/her understanding of childrn's (pupil) behavior ----------					
63 His/her classroom management and routines--					

(OVER)

	Extremely Well	Good	Fair	Unsat	Not Applic.
64 His/her handling of clerical tasks					
65 His/her coping with discipline					
66 His/her use of audio-visual materials					
67 His/her familiarization with special services in the school: ie. guidance counselor etc.					
68 His/her interpersonal relations with the pupils					
69 His/her interpersonal relations with you the classroom instructor					
70 His/her interpersonal relations with the administration of the school					
71 His/her interpersonal relations with parents					
72 Your overall opionion of the FSU student's performance this past week					

In a few words each what do you believe was the FSU student's most successful venture (activity, performance etc.) that you observed and his/her least successful.

73 Most Successful _____

_____

75 Least Successful _____

_____

77 Is there anything in either this student's performance or in your belief in general that you see a need for more preparation (guidance, instruction etc.) from FSU? Yes _____ No _____ Unsure _____
If yes would you please explain in one or two sentences.

78 _____

_____

_____

_____

_____

Signature _____

17

APPENDIX D
STUDENT COURSE/PROGRAM/PROCEDURE ATTITUDE FORM
(Submit Weekly)

The form described below is to be used as an attempt to collect information as your feelings concerned with what you are being asked to learn.

The information from this form will be accumulated weekly from ALL students in the course. It will be coded and a report will be given to the course instructor weekly as to the opinion of what YOU the student have been doing during the past week.

Even though the form asks for your name and social security number it will not be included in any reporting operation to the Instructor. All forms should be submitted to either Education 208 or Education 318.

4 Student Soc. Sec. Numb. _____ (2) Student Name _____ (11)

Course ID — Prefix _____ (30) Number _____ (33) Section _____ (37)

FSU Instructor Name _____ Instructor Code _____ (39)

Please check how you perceived the following during the past week:

	Very Worthwhile (1)	Worthwhile (2)	OK (3)	Terrible (4)	Not Applic. (5)
42 The subject matter I studied------					
43 If you checked Very Worthwhile, What Subject and Why _____					
61 If you checked Terrible, What Subject and Why _____					
80 1					
42 My personal contacts with the FSU course instructor----------					
43 If you checked Very Worthwhile, Why _____					
61 If you checked Terrible, Why _____					
80 2					

(OVER)

18

	Very Worth-while	Worthwhile	OK	Terrible	Not Applic.
42 My personal contacts with the Field-centered teacher --------- 43 If you checked Very Worthwhile, Why _____ _____ _____ 61 If you checked Terrible, Why ____ _____ _____ _____ 80 3					
42 The assessments I did ---------- 43 If you checked Very Worthwhile, What assessments and Why ____ _____ _____ _____ 61 If you checked Terrible, What assessments and Why _____ _____ _____ _____ 80 4					
42 Any other function ---------- 43 If you checked Very Worthwhile, What and Why _____ _____ _____ _____ 61 If you checked Terrible, What and Why _____ _____ _____ _____ 80 5					

APPENDIX B

RESOURCE UTILIZATION REPORT

COLLEGE OF EDUCATION

DATE: JUNE 19, 1974

COURSE MANAGEMENT SYSTEM

RESOURCE UTILIZATION REPORT

SUMMARY TO DATE: MAY 31, 1974

COURSE ID: [illegible] PREFIX [illegible] NUMBER 320 SECTION 1 INSTRUCTOR:

REQ FLAG	RESOURCES USED	TITLE (CODE)	NUMBER USING	AVERAGE TIME USED HR.	MIN.	AVERAGE NO. ATTEMPTS	NUMBER OF UNSUCCESSFUL ATTEMPTS BY TIME OF DAY AM	PM	NIGHT	WEEKEND	CONDITION	NUMBER OF OPINIONS BY VALUE OF RESOURCE VERY VALUABLE	VALUABLE	OK	MARG	NOT VALUABLE	AVG
	TEXT BK	0301	1	0	30	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0311	1	0	31	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0312	1	0	31	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0305	1	0	5	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0305	1	0	15	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0317	1	1	0	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	TEXT BK	0325	1	1	31	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	TEXT BK	0327	1	1	0	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0329	1	0	30	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0330	1	0	20	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0327	1	0	20	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	TEXT BK	0333	1	0	25	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	TEXT BK	0339	1	0	45	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	TEXT BK	03[illegible]	4	0	45	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	[illegible] BK	0335	1	0	45	1.0	0	0	0	0	0	1	0	0	0	0	1.0
*	OTHER BK	0337	1	1	0	1.0	0	0	0	0	0	3	1	0	0	0	1.2
	OTHER BK	0350	1	0	0	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	[illegible]	0301	1	0	0	1.0	0	0	0	0	0	0	0	0	0	1	5.0
	[illegible]	0301	1	0	25	1.0	0	0	0	0	0	0	0	0	0	0	0.0
	[illegible]	0342	1	2	0	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	[illegible]	0345	1	0	15	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	[illegible]	0347	1	0	10	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	[illegible]	0303	3	1	5	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	[illegible]	0372	1	3	0	1.0	0	0	0	0	0	3	0	0	0	0	1.0
	FILM	0303	2	0	35	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	[illegible]	0351	2	0	52	1.0	0	0	0	0	0	0	2	0	0	0	2.0
	[illegible]	0301	1	1	0	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	[illegible]	0304	1	0	30	1.0	0	0	0	0	0	0	0	1	0	0	3.0
*	[illegible]	0304	2	0	30	1.0	0	0	0	0	0	0	1	0	0	0	2.0
	[illegible]	0371	1	0	45	1.0	0	0	0	0	0	0	1	0	0	1	3.5
	[illegible]	0377	1	0	30	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	[illegible]	0311	4	1	7	1.0	0	0	0	0	0	1	0	0	0	0	1.0
	GLAS [illegible]	0351	6	2	3	1.0	0	0	0	0	0	2	2	0	0	0	1.5
												2	4	0	0	0	1.5

REQ FLAGS:

* THE AVERAGE VALUE OF THIS RESOURCE IS MARGINAL OR WORSE

** THE AVERAGE NUMBER OF ATTEMPTS TO USE THIS RESOURCE IS 2 OR MORE

** BOTH OF THE ABOVE REQ FLAG CONDITIONS EXIST

APPENDIX C

WEEKLY ATTITUDE REPORT FROM STUDENTS

COLLEGE OF EDUCATION
MANAGEMENT INFORMATION SYSTEMS
WEEKLY ATTITUDE REPORT FROM STUDENTS
SUMMARY TO DATE MAY 31, 1974

DATE: JUNE 19, 1974

INSTRUCTOR:
COURSE: [illegible] SECTION: 2

RATINGS DURING PAST WEEK (BY TOTAL NUMBER RESPONDING)

QUESTION ANSWERED	VERY WORTHWHILE	WORTHWHILE	OK	POOR	NOT APPLICABLE
SUBJECT MATTER STUDIED	8	8	7	1	0
PERSONAL CONTACTS WITH FSH COURSE INSTRUCTOR	2	9	2	1	8
PERSONAL CONTACTS WITH CLASSROOM TEACHER	0	9	2	0	10
ASSESSMENTS DONE	1	11	6	3	0
OTHER FUNCTIONS	0	10	1	4	1

THE FOLLOWING REPRESENT STATED PRAISE (VERY WORTHWHILE--VW)
OR PROBLEMS (POOR--P). THE NUMBER IN PARENTHESIS IS THE
TOTAL NUMBER OF RESPONSES WITH THIS REASON

SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: TEXT BOOK	WHY:	VERY IMPORTANT SUBJECT FOR FUTURE TEACHERS TO UNDERSTAND
SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: COMPUTER	WHY:	BROUGHT HELPFUL FACTS TO THE STUDENTS ATTENTION
SUBJECT MATTER	NO. 1--VW	(2)	SUBJECT: OTHER	WHY:	NO SPECIFIC REASON GIVEN
SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: VISION HEARING	WHY:	ABLE TO RECOGNIZE DISEASES, AND THE PROPER PROCEDURES TO USE
SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: FIRST AID	WHY:	VERY IMPORTANT SUBJECT FOR FUTURE TEACHERS TO UNDERSTAND
SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: NUTRITION	WHY:	VERY IMPORTANT SUBJECT FOR FUTURE TEACHERS TO UNDERSTAND
SUBJECT MATTER	NO. 1--VW	(1)	SUBJECT: LAST 6 MODULES	WHY:	NO SPECIFIC REASON GIVEN
SUBJECT MATTER	NO. 1-- P	(1)	WHAT: TEXT BOOK	WHY:	STUDENT FELT THAT THE FIRST MODULE WAS USELESS
FSH INSTRUCTOR CONTACT	NO. 1--VW	(1)	WHY: INSTRUCTOR CLARIFIED COURSE INFORMATION		
FSH INSTRUCTOR CONTACT	NO. 1--VW	(1)	WHY: NO SPECIFIC REASON GIVEN		
FSH INSTRUCTOR CONTACT	NO. 1-- P	(1)	WHY: INSTRUCTOR DID NOT SEEM CONCERNED THAT THE COMPUTER WAS DOWN		
ASSESSMENTS DONE	NO. 1--VW	(1)	WHAT: OTHER	WHY:	NO SPECIFIC REASON GIVEN
ASSESSMENTS DONE	NO. 1-- P	(1)	WHAT: NOT GIVEN	WHY:	STUDENT UNFAMILIAR WITH PROCESS AND DOES NOT SEE ITS PURPOSE
ASSESSMENTS DONE	NO. 1-- P	(1)	WHAT: COMPUTER	WHY:	COMPUTER NOT AVAILABLE
ASSESSMENTS DONE	NO. 2-- P	(1)	WHAT: COMPUTER	WHY:	THE ASSESSMENTS DO NOT SEEM NECESSARY TO LEARNING EXPERIENCE
OTHER FUNCTIONS	NO. 1-- P	(1)	WHAT: COMPUTER	WHY:	COMPUTER DOWN--NOT ENOUGH TIME TO COMPLETE MATERIAL
OTHER FUNCTIONS	NO. 1-- P	(1)	WHAT: OTHER	WHY:	TOO MANY MODULES TO COMPLETE IN TERM
OTHER FUNCTIONS	NO. 2-- P	(1)	WHAT: OTHER	WHY:	MIDTERM USELESS, NUMBER THAT CAN BE MISSED SHOULD BE RAISED
OTHER FUNCTIONS	NO. 1-- P	(1)	WHAT: BOOK PAPER	WHY:	USELESS RIETERATION, BETTER TO STICK TO ASSIGNED READINGS

APPENDIX D

STUDENTS FIELD PROFILE REPORT

COLLEGE OF EDUCATION DATE: 74/07/17.

MANAGEMENT INFORMATION SYSTEM

STUDENTS FIELD PROFILE REPORT

INSTRUCTOR:
COURSE: Int of YAS PERIOD COVERED 04/01-05/74

STUDENT: SOC-SEC-NO

CLASSROOM TEACHER: PARTICIPATING SCHOOL:

CODES: S = STUDENT
C = CLASSROOM TEACHER
F = FSU FACULTY MEMBER OR OTHER PERSON
$F = EXTREME DISCREPANCIES BETWEEN STUDENTS PERCEPTION AND OTHER RATERS

R A T I N G S

	EXTREMELY WELL S	C	F	GOOD S	C	F	SATISFACTORY S	C	F	UNSATISFACTORY S	C	F	NOT APPLIC S	C	F	RED FLAGS
55 LARGE GROUP CONTROL						*			*							
56 SMALL GROUP CONTROL	*				*											
57 INDIVIDUAL STUDENT CONTROL					*								*			
58 MANAGEMENT OF STUDENT PERFORMANCE RECORDS									*				*	*		
59 MANAGEMENT OF DAILY ACTIVITIES/PROCEDURES													*	*		
60 MANAGEMENT OF AIDS/SUPPLIES	*													*		
61 MANAGEMENT OF PHYSICAL CLASSROOM ENVIRONMENT													*	*		
62 PREPLANNING SKILLS				*										*		
63 MOTIVATIONAL SKILLS				*	*											
64 EVALUATION SKILLS													*	*		
65 DIAGNOSTIC SKILLS (INDIVIDUALIZED INSTRUCTION)				*										*		
66 PRESCRIPTIVE SKILLS (INDIVIDUALIZED INSTRUCTION)													*	*		
67 SMALL GROUP SHORT TERM INSTRUCTION				*	*											
68 SMALL GROUP LONG TERM INSTRUCTION													*	*		
69 LARGE GROUP SHORT TERM INSTRUCTION				*										*		
70 LARGE GROUP LONG TERM INSTRUCTION													*	*		
71 INT APPROPRIATE WITH STUDENTS	*				*											
72 INTERAPPROPRIATE WITH TEACHING ST/OTHER PERSONNEL	*				*	*										

MOST SUCCESSFUL VENTURE THIS WEEK: STUDENTS OPINION: MOTIVATIONAL SKILLS.
CLASSROOM TEACHER OPINION: EXCELLANT IMPROVEMENT IN ALL AREAS. KEEP UP THE GOOD WORK
OTHER OPINION: NONE STATED

LEAST SUCCESSFUL VENTURE THIS WEEK: STUDENT OPINION: JUDGING TIME ALLOTMENTS.
CLASSROOM TEACHER OPINION: DETAILED PREPLANNING--ENTHUSIASM TO DEVELOP DIAGNOSTIC SKILLS
OTHER OPINION: NONE STATED

SUGGESTION FOR NO PREPARATION: STUDENT-- NO CLASSROOM TEACHER-- NO OTHER--

WHAT SUGGESTIONS: STUDENTS:
CLASSROOM TEACHER:
OTHER:

APPENDIX E

CLASS STATISTICS REPORT

FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION
MANAGEMENT INFORMATION SYSTEM

DATE: 74/04/29

CLASS STATISTICS REPORT

PAGE: 1

INSTRUCTOR:
COURSE: EDU 537 SECTION 1

ONLY AREAS IN WHICH SOME ACTION HAS BEEN TAKEN ARE PRINTED BELOW

NUMBER OF STUDENTS IN CLASS: 17

UNITS	1	1 1	1 2	2 1	3 1	4 1	4 2	5 1	6 1	6 2	7 1	7 2	8 1	9 1	9 2	10 1	10 2	11 1	11 2
COGNITIVE OBJECTIVES																			
LEVEL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
OVERALL CLASS STATISTICS																			
MEAN ATTEMPTS	1.0	1.0	1.1	1.0	1.1	1.2	1.3	1.1	1.0	1.0	1.0	1.0	1.2	1.0	1.0	1.0	1.0	1.0	2.0
MEAN TIME USED	1.0	1.0	1.1	1.0	1.0	1.3	1.3	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MEAN GRADE	24.1	84.3	85.4	84.2	82.6	74.7	73.9	83.6	86.5	82.0	86.8	99.0	87.6	99.0	83.0	80.0	81.0	60.0	40.0
ATTEMPTED 1 TIME	16.0	11.0	8.0	11.0	9.0	9.0	7.0	8.0	10.0	9.0	7.0	6.0	3.0	1.0	1.0	1.0	1.0	1.0	
ATTEMPTED 2 TIMES		1.0	1.0	1.0	2.0		1.0	1.0					1.0						1.0
ATTEMPTED 3 TIMES						1.0	1.0												
ATTEMPTED 4 TIMES																			

INDIVIDUAL STUDENT STATISTICS

NO. OF ATTEMPTS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0						
NO. OF DAYS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0						
AVERAGE GRADE	36.0	99.0	80.0	99.0	99.0	60.0	80.0	80.0	80.0	80.0	80.0	99.0	99.0	99.0					
NO. OF ATTEMPTS	1.0	1.0		1.0	2.0	1.0	2.0	1.0											
NO. OF DAYS	1.0	1.0		1.0	2.0	1.0	1.0	1.0											
AVERAGE GRADE	15.0	80.0		60.0	74.5	60.0	74.5	80.0											
NO. OF ATTEMPTS	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0							
NO. OF DAYS	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0							
AVERAGE GRADE	19.0	99.0	99.0	80.0	62.5	80.0	99.0	60.0	99.0	80.0	80.0	99.0							
NO. OF ATTEMPTS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0						
NO. OF DAYS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0						
AVERAGE GRADE	10.0	60.0	99.0	80.0	79.0	60.0	80.0	80.0	60.0	60.0	80.0	99.0	80.0						
NO. OF ATTEMPTS	1.0																		
NO. OF DAYS	1.0																		
AVERAGE GRADE	23.0																		
NO. OF ATTEMPTS		1.0																	
NO. OF DAYS		1.0																	
AVERAGE GRADE		24.0																	
NO. OF ATTEMPTS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
NO. OF DAYS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AVERAGE GRADE	32.0	99.0	99.0	99.0	99.0	80.0	80.0	80.0	80.0	80.0	99.0	99.0	80.0	99.0	80.0	80.0	80.0	60.0	40.0
NO. OF ATTEMPTS	1.0	1.0	1.0	1.0	1.0														
NO. OF DAYS	1.0	1.0	1.0	1.0	1.0														
AVERAGE GRADE	32.0	80.0	99.0	80.0	80.0														
NO. OF ATTEMPTS	1.0																		
NO. OF DAYS	1.0																		
AVERAGE GRADE	38.0																		

APPENDIX F

INDIVIDUAL STUDENT STATISTICS

INSTRUCTOR:
COURSE: IDF 340 SECTION 1

ONLY AREAS IN WHICH SOME ACTION HAS BEEN TAKEN ARE PRINTED BELOW

NUMBER OF STUDENTS IN CLASS: 8

TESTS	1	1	1	1	1	1	1	1	1	1
MODULES	1	1	1	2	3	4	4	4	5	5
OBJECTIVES	1	2	3	1	1	1	2	3	1	2
LEVEL	1	1	1	1	1	1	1	1	1	1

OVERALL CLASS STATISTICS

MEAN ATTEMPTS	1.5	1.0	1.1	1.1	1.0	1.0	1.2	1.2	1.0	1.0
MEAN TIME USED	2.6	1.0	2.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MEAN GRADE	46.7	79.0	71.4	82.5	87.8	84.7	76.0	79.8	91.4	87.6
ATTEMPTED 1 TIME	4.0	8.0	5.0	5.0	5.0	4.0	3.0	3.0	5.0	5.0
ATTEMPTED 2 TIMES	1.0		1.0	1.0			1.0	1.0		
ATTEMPTED 3 TIMES	1.0									
ATTEMPTED 4 TIMES										

INDIVIDUAL STUDENT STATISTICS

NO. OF ATTEMPTS	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
NO. OF DAYS	2.0	1.0	12.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AVERAGE GRADE		80.0	80.0	80.0	90.0	80.0	80.0	99.0	80.0	80.0

APPENDIX G

SUMMARY REPORT OF STUDENT PROFILE

COLLEGE OF EDUCATION

MANAGEMENT INFORMATION SYSTEM

DATE: MAY 22, 1974

SUMMARY REPORT OF STUDENT PROFILES

INSTRUCTOR: COURSE: /DF 497 STUDENT: PARTICIPATING SCHOOL:

CODES: * = STUDENT
1 = CLASSROOM TEACHER
2 = FSU FACULTY MEMBER
$ = COMBINATION OF TWO OR MORE OF ABOVE

QUESTION	RATING	1	2	3	WEEK 4	5	6	7	8	9	10	11
55 LARGE GROUP SKILLS	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
56 SMALL GROUP CONTROL	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
57 INDIVIDUAL STUDENT CONTROL	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
58 MANAGEMENT OF STUDENT PERFORMANCE RECORDS	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
59 MANAGEMENT OF DAILY ROUTINES/PROCEDURES	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
60 MANAGEMENT OF MATERIALS/SUPPLIES	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
61 MANAGEMENT OF PHYSICAL CLASSROOM ENVIRONMENT	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
62 PREPLANNING SKILLS	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
63 MOTIVATIONAL SKILLS	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											
64 EVALUATION SKILLS	EXT. WELL GOOD SATISF UNSATISF. NOT APPL.											

APPENDIX H

ICMIS INPUT FORMS

COURSE INITIALIZATION FORM
MIS

I (1) Course ID (2) Number of Objectives (11)

Number of Tasks Per Objective (Sets of 2)
13
33
53

2 Course ID Objective Number (11)

Number of Enablers Per Task (Sets of 2)
13
33
53

STUDENT INITIALIZATION FORM
MIS

I (1)

Student Social Security Number (2)

Student Name (Last, First) (12)

Course ID — Prefix (31) Number Section

Instructor Name _____ Instructor Code (40)

Date — Month (43) Day Year

Deletion, Correction, and Final Grade Form

MIS

To be used to delete a person, blank incorrect data, and input final grade for the course.
Card ID - C = Complete for grade; Z = Blank; D = Delete

Card ID (1) Soc. Sec. No. (2) Name (12)

Course ID: Prefix (31) Number (34) Section (38) Instructor Code (40)

Date: (43) Level (49) Part A (50) Part B (52) Part C (54) Grade (56)

MIS ASSESSMENT FORM

A 1 Student Social Security Number 2

Student Name (Last,First) 12 Course ID 30 Prefix Number Secti

Instructor Name _____ Instructor Code (39)

The following assessment information may be filled out several ways under the Grade Column. If the assessment is on a pass/no pass basis, then the words pass or no pass should be recorded. If a grade is recorded, it may be either: A, B, C, D, F, I, or any numeric. (Three assessments may be completed on this form)

Level No.	Part A Number	Part B Number	Part C Number	Date Attempted (Mo/Day)	Grade
42					
55					
68					

Signature _____ Date _____

RED FLAG INPUT FORM

The following form enables the course instructor to set limits so that a red flag report will print when a student in a class exceeds the set limits.

A 1 Course ID Prefix 2 Number Section Instructor Name Instr. Code 11

Level No.	Competency (Objective) Number	Sub-competency (Task) Number	Enabler (Sub-task) Number	Period* (Days)	Attempts* (No.)	Grade*
16						
26						
38						
50						
62						

* Period is the number of days that should not be exceeded.
* Attempts is the number of attempts in either a competency, a sub-competency, or an enabler that should not be exceeded.
* Grade is the grade equal to or below that grade which should not be exceeded.

STUDENT COURSE/PROGRAM/PROCEDURE ATTITUDE FORM
(Submit Weekly)

The form described below is to be used to collect information as to your feelings concerned with what and how you are being asked to learn. Even though the form asks for your name and social security number, it will not be included in any reporting operation to the Instructor and is optional to complete. All forms should be submitted to either Education 208 or 318.

4/1 Optional Student Soc. Sec. Numb. _____ (2) Student Name _____ (11)

Course ID _____ (30 Prefix) _____ (33 Number) _____ (37 Section) Instructor _____ Instr. Code _____ (39)

Please check how your perceived the following during the past week:

	Very Worthwhile (1)	Worthwhile (2)	OK (3)	Poor (4)	Not Applicable (5)
42 The subject matter I studied 43 If you checked Very Worthwhile, What Subject and Why _____ 61 If you checked Poor, What Subject and Why _____ 80 1					
42 My personal contacts with the FSU course Instructor 43 If you checked Very Worthwhile, Why _____ 61 If you checked Poor, Why _____ 80 2					
42 My personal contacts with the Field-centered teacher 43 If you checked Very Worthwhile, Why _____ 61 If you checked Poor, Why _____ 80 3					
42 The assessments I did 43 If you checked Very Worthwhile, Why _____ 61 If you checked Poor, Why _____ 80 4					
42 Any other function 43 If you checked Very Worthwhile. What and Why _____ 61 If you checked Poor, What and Why _____ 80 5					

PROFILE RATING FORM

(1) [illegible] Student's Soc. Sec. #(2)_____ Student's Name (11) _____

(30) Course ID: Prefix IDF Number 485 Section 98

Course Instructor's Name [illegible]

Participating School Instructor's Name _____

Participating School's Name Astoria Park

(47) Period Covered: Month ____ Days _____ Year ____

DO NOT WRITE	
Instr. Code 39	005
Teacher Code 42	
School Code 45	01

Directions Please check those qualities that you have had an opportunity to observe and evaluate concerning (your/the student's) performance.

		1 Extremely Well	2 Good	3 Fair	4 Unsatisfactory	5 Not Applicable
55.	Large Group Control					
56.	Small Group Control					
57.	Individual Student Control					
58.	Management of Student Performance Records					
59.	Management of Daily Routines/Procedures					
60.	Management of Materials/Supplies					
61.	Management of Physical Classroom Environment					
62.	Preplanning Skills					
63.	Motivational Skills					
64.	Evaluation Skills					
65.	Diagnostic Skills (Individualized Instruction)					
66.	Prescriptive Skills (Individualized Instruction)					
67.	Small Group Short Term Instruction					
68.	Small Group Long Term Instruction					
69.	Large Group Short Term Instruction					
70.	Large Group Long Term Instruction					
71.	Interpersonal Skill with Students					
72.	Interpersonal Skill with Teaching Team/Other Personnel					

In a few words, what do you believe was (his/her, your) most successful venture (activity, performance, etc.) during the week and (his/her, your) least successful?

73. Most successful _____

75. Least successful _____

77. In general, is there anything in this (student's/your) performance thus far that leads you to believe that more preparation work was needed from the University?
Yes ____ No ____ Unsure ____
If yes, please explain in one or two sentences.

78. _____

RESOURCE UTILIZATION AND VALUE FORM
(Submit Weekly)

5/1 (Optional)
Student Social Security Number _____ (2) Student Name _____ (12)

Course ID Prefix 31_____ Number 34_____ Section 38_____

Instructor Name _____ Instructor Code _____ (40)

Please indicate below what was used, time used, attempts to use, and your opinion as to its value.

RESOURCE USED (INDICATE TEXT, FILM, PEOPLE, ETC.) (SEE TABLE BELOW FOR CODES)	BRIEF TITLE OR IF PERSON WHO: ie INSTRUCTOR, FRIEND, ETC.	TIME SPENT USING RESOURCE HRS.	TIME SPENT USING RESOURCE MIN.	NUMBER OF ATTEMPTS TO USE RESOURCE (IF YOU ATTEMPT TO USE A RESOURCE & IT WAS NOT AVAIL. COUNT IT AS ATTEMPT #1 ETC., IF SUCCESSFUL THE 1ST TIME RECORD A 1)	APPROX. TIME OF DAY ATTMPT. TO USE RESOURCE BUT UNSUCCESSFUL 1=AM 2=Aft. 3=Night 4=Weekend 5=Comb. of above	YOUR OPINION OF THE RESOURCE 1=Very Val. 2=Valuable 3=OK 4=Marginal 5=Not Val.
43_____	56_____	_____ (71)	_____	75_____	77_____	80_____
43_____	56_____	_____ (71)	_____	75_____	77_____	80_____
43_____	56_____	_____ (71)	_____	75_____	77_____	80_____

SIGNATURE_____ DATE_____

RESOURCES USED CODE TABLE

Text Book	001	Video-Tape	013	Class Notes	050
Library Book	002	Picture/Painting etc.	014	Other	060
Other Type Book	003	Computer Terminal	020		
Film	010	People	030		
Filmstrip	011				

APPENDIX I

EVALUATION QUESTIONNAIRES

Student Questionnaire for In-Course MIS System

Name _____(optional)

Course _____

Throughout this quarter your class has been participating in an in-course management information system (MIS) by inputting information about your course progress on MIS assessment forms. Some of you also used the Resource, Attitude, or Profile forms to input other data. I would appreciate your taking several minutes to respond to this evaluation of the in-course MIS system. You should return it either to the evaluator presenting it to you or return it in the enclosed envelope.

1. I generally participated inputting information throughout the course by using the MIS assessment forms. Yes____ No____
   If you answered yes go to paragraph 2.
   If you answered no would you check any or all reasons you did not participate:
   - Did not even know about it. _____
   - Knew about it but did not know how or was confused about what was needed _____
   - Was not able to obtain forms for inputting. _____
   - The instructor led me to believe it was of no value, so I did not participate. _____
   - Decided I was just not going to participate in the system _____

2. Please mark in the appropriate scale your answer to each question. If the question is not applicable, please leave it blank. The scale is as follows: SA = strongly agree, A = agree, N = neutral, D = disagree SD = strongly disagree.

   The physical preparation of the MIS assessment course forms took too much of my time. SA A N D SD

3. The input MIS coding forms were somewhat confusing to use. SA A N D SD

4. The presentation on the preparation of the forms at the beginning of the course by the MIS manager was helpful. SA A N D SD

5. The instructor should discuss the weekly progress report with me or the class. SA A N D SD

6. The weekly progress report was useful to me. SA A N D SD

7. The weekly progress report was difficult to understand. SA A N D SD

8. I see a need for course progress monitoring in this class. SA A N D SD

9. I see a need for course progress monitoring in other classes of mine. SA A N D SD

10. The Resource report took too much of my time to prepare. SA A N D SD

11. The Resource report was confusing to prepare. SA A N D SD

12. The course instructor should discuss the results of the Resource report with me or the class. SA A N D SD

13. The Attitude report took too much of my time to prepare. SA A N D SD

14. The Attitude report was confusing to prepare. SA A N D SD

15. The course instructor should discuss the results of the Attitude report with me or the class. SA A N D SD

16. The Profile report was useful to me. SA A N D SD

17. The Profile report took too much of my time to prepare. SA A N D SD

18. My average class progress report compared to the class as a whole should be made available to me by the course instructor. SA A N D SD

19. My overall reaction to the entire in-course MIS system was _____

_____

Thank you very much for your cooperation in the endeavor.

Faculty Questionnaire for In-course MIS System

Name _____
Course _____

I would appreciate your taking several minutes to respond to this evaluation of the in-course MIS System. I will collect it tomorrow.

Please mark in the appropriate scale your response to these questions. If the question is not applicable, then leave it blank. The scale letters indicate the following: SA = strongly agree, A = agree, N = neutral, D = disagree, SD = strongly disagree.

1. The pre-preparation of the codings and other dialogues with the MIS manager prior to class starting, took too much time. SA A N D SD
2. The presentation of the system to your class by the MIS manager was beneficial to the students. SA A N D SD
3. The interaction with the MIS manager was useful. SA A N D SD
4. The physical preparation of the MIS coding progress assessment forms takes too much of <u>your</u> time. SA A N D SD
5. The receipt of the weekly progress reports was timely. SA A N D SD
6. The weekly progress reports were useful to you. SA A N D SD
7. The weekly progress reports were difficult to understand or interpret. SA A N D SD
8. The physical preparation of the MIS coding forms takes too much of the student's time. SA A N D SD
9. The weekly progress reports should be changed to more readily reflect your needs. SA A N D SD
10. I would be willing to use the progress report system again for the same course. SA A N D SD
11. I would be willing to use the progress report system for other courses of mine. SA A N D SD
12. The results of the weekly progress reports should be discussed with my class. SA A N D SD
13. The resource reports were useful to me. SA A N D SD
14. I would use the resource report again in this class. SA A N D SD
15. I would use the resource report in another class of mine. SA A N D SD

16. The results of the resource report should be discussed within my class. SA A N D SD

17. The resource report was too difficult to understand. SA A N D SD

18. The attitude reports were useful to me. SA A N D SD

19. The attitude report was too difficult to understand. SA A N D SD

20. I would use the attitude report again in this class. SA A N D SD

21. I would use the attitude report in another of my classes. SA A N D SD

22. The results of the attitude report should be discussed within my class. SA A N D SD

23. The profile reports were useful to me. SA A N D SD

24. The profile report was too difficult to understand. SA A N D SD

25. I would use the profile report again in this class. SA A N D SD

26. I would use the profile report in another of my classes. SA A N D SD

27. The results of the profile report should be discussed in my class. SA A N D SD

28. The class statistics report was useful to me. SA A N D SD

29. The class statistics report was too difficult to understand. SA A N D SD

30. I would use the class statistics again in this class. SA A N D SD

31. I would use the class statistics report in another of my classes. SA A N D SD

32. The results of the class statistics report should be discussed in my class. SA A N D SD

33. My overall reaction to the entire in-course MIS system was _____

_____

Thank you for your cooperation.

CLASSROOM TEACHER QUESTIONNAIRE FOR
IN-COURSE MIS SYSTEM

NAME _____
SCHOOL Astoria Park

During the past quarter you have been quite helpful in participating in a field study of the preparation of rating evaluations for student interns. In order to evaluate the effectiveness of the procedures would you please take a few minutes to respond to this evaluation form. Please return it to either Mr. Niemeyer or enclose it in the accompaning envelope.

Please mark in the appropriate scale your response to these questions. If the question is not applicable, then leave it blank. The scale letters indicate the following: SA = strongly agree, A = agree, N = neutral, D = disagree, SD = strongly disagree.

1. The physical preparation of the Intern Evaluation forms took too much of my time. SA A N D SD

2. The Intern Evaluation forms were confusing to use SA A N D SD

3. The Intern Evaluation forms took toomuch of your intern's time to complete SA A N D SD

4. The weekly intern profile reports were useful to me SA A N D SD

5. The weekly intern profile reports were confusing to read SA A N D SD

6. I would use the Intern Evaluation form and the intern profile reports again in another term SA A N D SD

7. The physical preparation of the MIS Assessment Forms took too much of my time SA A N D SD

8. The physical preparation of the MIS Assessment Forms took too much of the intern's time SA A N D SD

9. The weekly progress report of the intern's progress was useful to me SA A N D SD

10. The weekly progress report of the intern's progress was confusing to read SA A N D SD

11. I would use the weekly progress report again in another term SA A N D SD

12 My overall reaction to the in-course MIS system using the reports and forms I did was _____

APPENDIX J

TIME AND COST DATA INPUT FORM

COURSE MIS

Time and Cost Data

8 (1) Name (2) 13 Position 14

What Doing/Did	Date Mo.	Day	Time to Do Hr.	Min.	Sec.
15 68	71	73	75	77	79
15 68	71	73	75	77	79
15 68	71	73	75	77	79
15 68	71	73	75	77	79
15 68	71	73	75	77	79
15 68	71	73	75	77	79

APPENDIX K

COURSE CODES FOR MIS ASSESSMENT FORMS

COURSE CODES FOR
MIS ASSESSMENT FORMS

	Prefix	Number	Section
Course ID:	IDF	320	01 & 02

Instructor Name: [redacted] Instructor Code: 002

Use the following codes on all necessary input forms.

LEVEL	PART A	PART B	PART C
1	01 (Test 1)	01 (School Health Program)	01 (Objective 1)
1	"	"	02 (" 2)
1	"	"	03 (" 3)
1	"	02 (Mental Health)	01 (" 1)
1	"	03 (Drug Educ.)	01 (" 1)
1	"	04 (Sex Educ.)	01 (" 1)
1	"	"	02 (" 2)
1	"	"	03 (" 3)
1	"	05 (Vision & Hearing)	01 (" 1)
1	"	"	02 (" 2)
1	02 (Test 2)	01 (Communicable Diseases)	01 (" 1)
1	"	"	02 (" 2)
1	"	02 (Dental Health)	01 (" 1)
1	"	"	02 (" 2)
1	"	03 (Nutrition)	01 (" 1)
1	"	"	02 (" 2)
1	"	04 (First Aid)	01 (" 1)
1	"	05 (Allergies etc.)	01 (" 1)
1	"	"	02 (" 2)
1	"	06 (Growth & Records)	01 (" 1)
2	03 (Written Assign)	01 (Book Evaluation)	
2	"	02 (Motivation Paper)	
2	"	03 (Test Item Writing)	

COURSE CODES FOR MIS ASSESSMENT FORMS

	Prefix	Number	Section
Course ID:	IDF	405	02

Instructor Name: _____ Instructor Code: 004

Use the following on all necessary Input forms:

Level	Part A	Part B	Part C
2	01 (Design, Instruc.)	01 (Descrip. Student, etc.)	
2	"	02 (Performance Object.)	01 (Substantive Criteria 1)
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	03 (Select. Cog. Level)	01 " " 1
2	"	"	02 " " 2
2	"	04 (Task Analysis)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	"	05 " " 5
2	"	"	06 " " 6
2	"	05 (Design Assessments)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	06 (Design/Select Instr. Mat)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	"	05 " " 5
2	"	07 (Form. Eval. Plans)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	"	05 " " 5
2	"	"	06 " " 6
2	"	"	07 " " 7
2	"	"	08 " " 8
2	"	"	09 " " 9
2	"	"	10 " " 10
2	"	"	11 " " 11
2	"	08 (Summ. Eval, Plans)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	"	05 " " 5
2	"	"	06 " " 6
2	"	"	07 " " 7
2	"	09 (Implementation)	
2	"	10 (Formative Eval.)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3
2	"	"	04 " " 4
2	"	11 (Summative Eval.)	01 " " 1
2	"	"	02 " " 2
2	"	"	03 " " 3

COURSE CODES FOR MIS ASSESSMENT FORMS

	Prefix	Number	Section
Course ID:	IDF	405	03

Individual Name: [redacted] Instructor Code: 003

Use the following codes on all necessary input forms:

Level	Part A	Part B	Part C
2	01 (Analyzing Classroom Prob)	01 (Tests A-F)	01 (Test A)
1	"	"	02 " B)
1	"	"	03 " C)
2	"	"	04 " D)
2	"	"	05 " E)
1	"	"	06 " F)
2	"	02 (Tests G-H)	01 " G)
2	"	"	02 " H)
1	"	03 (Tests I-M)	01 " I)
1	"	"	02 " J)
1	"	"	03 " K)
1	"	"	04 " L)
2	"	"	05 " M)
3	"	04 (ACP Problem Analysis)	
2	02 (Self Improvement)	01 (Interaction Analysis)	01 (Test I)
2	"	02 (Tests II-III)	01 " II)
1	"	"	02 " III)
2	"	03 (Locate References-Test)	01 " IV)
1	"	04 (Tests V-VIII)	01 " V)
2	"	"	02 " VI)
1	"	"	03 " VII)
2	"	"	04 " VIII
2	"	05 (Categorizing Questions)	01 " IX)
3	"	06 (SI Project #1 -Bloom)	
3	"	07 (SI Project #2)	
2	"	08 (SI Long-Term Program)	
1	03 (Individualized Instruction	01 (Tests 1-11)	01
1	" System)	"	02
1	"	"	03
1	"	"	04
1	"	"	05
1	"	"	06
1	"	"	07
1	"	"	08
1	"	"	09
1	"	"	10
1	"	"	11
2	"	02 (IIS Description)	
2	"	03 (IIS Design Task)	

Course Codes for MIS Assessment Forms

	Prefix	Number	Section
Course ID:	IDF	485	98

Instructor Name: ___ _ _ Instructor Code: 005

Use the following codes on all necessary input forms:

Level	Part A	Part B	Part C
3	01 (Manag. Skills)	01 (Student Control)	01 (Large Group)
3	"	"	02 (Small Group)
3	"	"	03 (Individ. Student
3	"	02 (Records/Routines/Procedures)	
3	"	03 (Materials/Supplies)	
3	"	04 (Physical Classroom Environ)	
3	02 (Instruc. Skills)	01 (Preplanning)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)
3	"	02 (Motivational)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)
3	"	03 (Evaluation)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)
3	"	04 (Indiv. Instruc.-Diagnostic)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)
3	"	05 (Indiv. Instruc.-Prescriptive)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)
3	"	06 (Small Group - Short Term)	01 (Math)
3	"	"	02 (Reading)
3	"	"	03 (Language Arts)
3	"	"	04 (Science)
3	"	"	05 (Social Studies)
3	"	"	06 (Art)
3	"	"	07 (Physical Education)

COURSE CODES FOR MIS ASSESSMENT FORMS

	Prefix	Number	Section
Course ID:	IDD	537	01

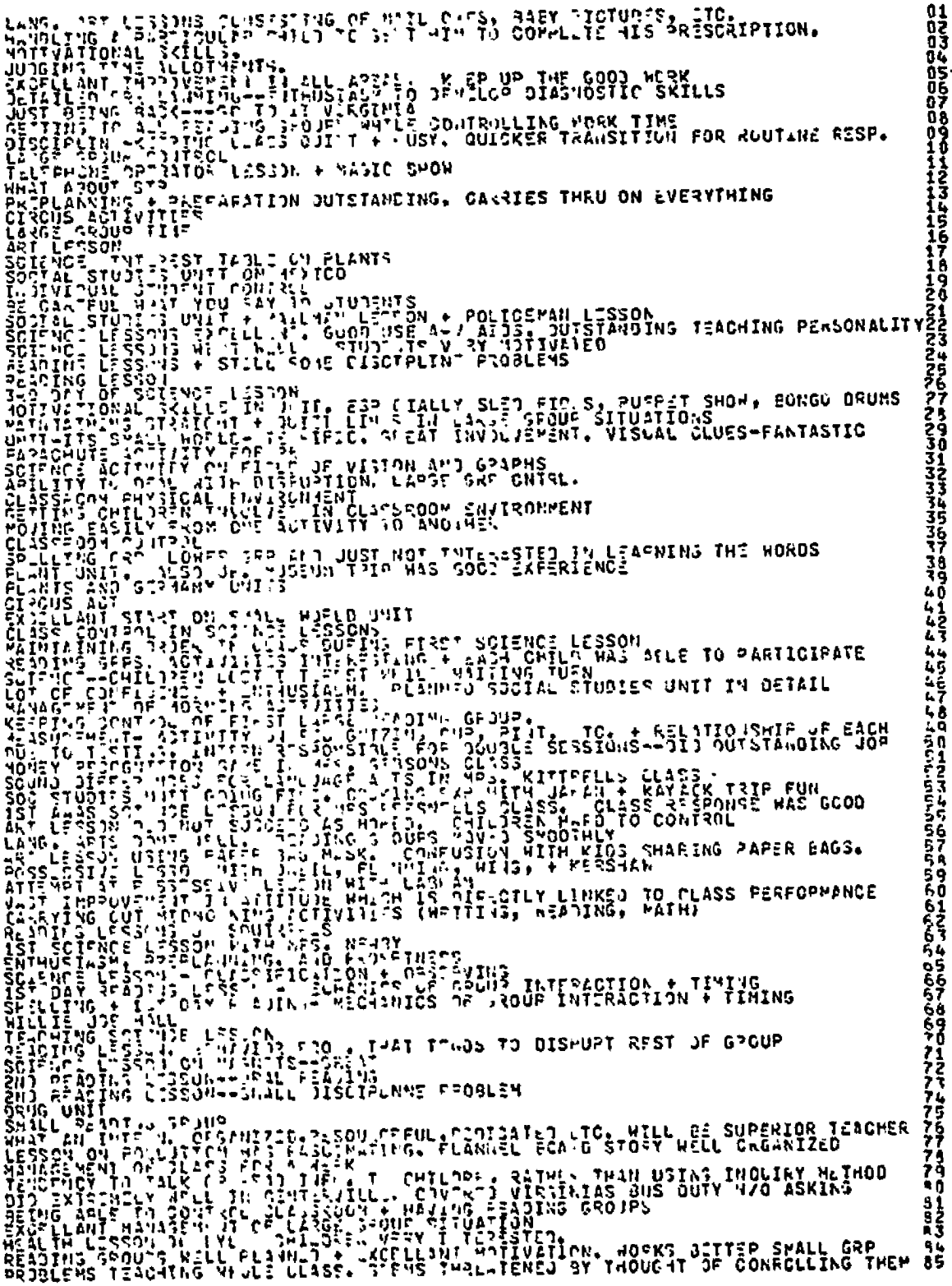
Instructor Name: [redacted] Instructor Code: 001

Use the following codes on all necessary input forms:

Level	Part A	Part B
1	01 (Unit 1)	00 (Pre-Test)
1	"	01 (Cognitive Objective #1)
1	"	02 " " #2
1	02 (Unit 2)	01 " " #1
1	03 (Unit 3)	01 " " #1
1	04 (Unit 4)	01 " " #1
1	"	02 " " #2
1	05 (Unit 5)	01 " " #1
1	06 (Unit 6)	01 " " #1
1	"	02 " " #2
1	07 (Unit 7)	01 " " #1
1	"	02 " " #2
1	08 (Unit 8)	01 " " #1
1	09 (Unit 9)	01 " " #1
1	"	02 " " #2
1	10 (Unit 10)	01 " " #1
1	"	02 " " #2
1	11 (Unit 11)	01 " " #1
1	"	02 " " #2
1	12 (Unit 12)	
1	13 (Unit 13)	01 (Cognitive Objective #1)
1	14 (Unit 14)	
1	15 (Tests)	01 (Multiple Choice)
1	"	02 (Essay Test)
2	16 (Final Product)	

APPENDIX L

OPEN-END RESPONSE LISTING



APPENDIX M

DETAILED PERSONNEL COSTS

APPENDIX M
DETAILED PERSONNEL COSTS

Person Performing	Type of Activity (During Typical Term)	Total # of Activites	Total Time	Avg. Time	Salary Equiv. Per Hr.	Total Cost	Avg. Cost Per Activ.	Numb. Students	Avg. Cost Per Student
CIM	Drawing Graphs for Profile Summary	14 Students	4.6 hr.	20 min.	$8.62	$40.17	$2.86 (Studnt)	14	$2.86
CIM	Spoke to Classes to Explain Procedures	5 Classes	1.6 hr.	20 min.	8.62	14.39	2.87 (Class)	106	.13
CIM	Coding Profile Input Forms	9 Weeks	10½ hr.	1.6 hr. week	8.62	90.51	9.99 (Week)	14	6.46
CIM	Proofing & Correcting MIS Assessment Forms	678 Forms	14.2 hr.	1.25 min.	8.62	122.83	.18 (Form)	106	1.16
CIM	Setting Procedures, Codes etc. with Course Instructors	20 Meetings	10 hr.	30 min. meet.	8.62	86.20	4.31 (Meet)	106	.81
CIM	Interaction with Programmer to Establish Codes, Proffiing etc.	20 Meetings	5 hr.	15 min.	8.62	43.10	2.15 (Meet)	106	.41
CIM	Drafting Handout of Procedures for Courses	5 Courses	2½ hr.	30 min	8.62	21.55	4.31 (Crs.)	106	.20
CIM	Interaction with Course Instructor to Explain 1st Few Reports	10 Meetings	2½ hr.	15 min. inst.	8.62	21.55	2.15 (Meet)	106	.20
CIM	Interaction with Course Instructors to Determine If Everything is OK	10 Meetings	1.7 hr.	10 min. meet.	8.62	15.08	1.37 (Meet)	106	.14
CIM	Proofing & Coding Resource Forms	102 Forms	5 hr.	3 min.	8.62	43.10	.42 (Form)	96	.44

APPENDIX M (Continued)

Person Performing	Type of Activity (During Typical Term)	Total # of Activities	Total Time	Avg. Time	Salary Equiv. Per Hr.	Total Cost	Avg. Cost Per Activ.	Numb. Students	Avg. Cost Per Student
CIM	Proofing & Coding Attitude Forms	46 Forms	2.25 hr.	3 min.	$8.62	$19.39	$.42 (Form)	41	$ .47
Keypuncher	Punching Course Codes For System	20 Cards	10 min.	30 sec.	2.00	.32	.02 (Card)	106	.003
Keypuncher	Punching Initial Student Information	106 Cards	53 min.	30 sec.	2.00	1.76	.02 (Card)	106	.02
Keypuncher	Punching Instructor Information	9 Cards	4½ min.	30 sec.	2.00	.15	.01 (Card)	106	.001
Keypuncher	Punching MIS Forms	678 Cards	11.25 hr.	1 min.	2.00	22.50	.03 (Card)	106	.21
Keypuncher	Punching Resource Forms	286 Cards	7 hr.	1½ min.	2.00	14.00	.05 (Card)	96	.14
Keypuncher	Punching Attitude Forms	162 Cards	5.3 hr.	2 min.	2.00	10.66	.06 (Card)	41	.26
Keypuncher	Punching Profile Forms	399 Cards	13.25 hr.	2 min.	2.00	26.50	.06 (Card)	14	1.89
Student Assistant	Messenger Service to Retrieve Forms	100 Trips	8.3 hr.	5 min.	1.80	14.99	.15 (Trip)	106	.14
Student Assistant	Delivering Reports	50 Trips	12½ hr.	15 min.	1.80	22.50	.45 (Trip)	106	.21
Course Instructor	Interaction with CIM to Discuss Codes etc.	4 Meetings	2 hr.	30 min.	N/A	N/A	N/A	N/A	N/A
Course Instructor	Interaction with CIM to Discuss 1st Few Sets of Output Reports	2 Meetings	30 min.	15 min.	N/A	N/A	N/A	N/A	N/A

APPENDIX M (Continued)

Person Performing	Type of Activity (During Typical Term)	Total # of Activities	Total Time	Avg. Time	Salary Equiv. Per Hr.	Total Cost	Avg. Cost Per Activ.	Numb. Students	Avg. Cost Per Student
Course Instructor	Interaction with CIM to Review Course Procedures During Term	2 Meetings	20 min.	10 min.	N/A	N/A	N/A	N/A	N/A
Course Instructor	Reviewing Output Reports	10 Weekly Reports	Varies	N/A	N/A	N/A	N/A	N/A	N/A
Student (Ex. of 1)	Listening to CIM Explain ICMIS	1 Class	20 min.	20 min.	N/A	N/A	N/A	N/A	N/A
Student (Ex. of 1)	Preparing MIS Forms	Varies	Varies	1.25 min.	N/A	N/A	N/A	N/A	N/A
Student (Ex. of 1)	Preparing Resource Forms	Varies	Varies	1½ min.	N/A	N/A	N/A	N/A	N/A
Student (Ex. of 1)	Preparing Attitude Forms	Varies	Varies	1½ min.	N/A	N/A	N/A	N/A	N/A
Student (Ex. of 1)	Preparing Profile Forms	Varies	Varies	2 min.	N/A	N/A	N/A	N/A	N/A

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REFERENCES

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Personal Vita

Name - Herbert F. Rebhun

Home Address - 2325 W. Pensacola St. #134 Home Phone - (904) 575-1347
Tallahassee, FL 32304

Date of Birth - September 17, 1933

Marital Status - Married - Three Children

Education - Pennsylvania State University - September 1951 - February 1953
St. Vincents College - February 1953 - June 1953
University of Pittsburgh - September 1953 - June 1955, B.B.A.
(Major - Business Administration)
University of Pittsburgh - September 1955 - August 1956, M.L.
(Major - Marketing and Advertising)
Duquesne University Law School - September 1960 - June 1961
Florida State University - September 1971 - Present, Ph.D. Candidate
(Major - Instructional Systems), August 1974 Projected Graduation,
Dissertation - "The Development, Implementation and Evaluation of a Computer Support System for the Management of Combetency-Based Individualized Programs"

Employment Information

I. Florida State University, Tallahassee, Florida
A. September 1973 - Present
Position: Director of The Offices of Academic Advisement and Management Information Systems; Temporary Instructor - Instructional Design and Development Program.
1. Direct a staff of 14 graduate students acting as para-professional academic advisors by providing centralized academic advisement for students majoring in Elementary Education and Freshmen and Sophomores in all areas of teacher education.
2. Direct a professional staff who maintain the academic records of all graduate and undergraduate students in the College of Education (COE).
3. Direct a computerized student information management system and staff who provide academic information to all COE undergraduate advisors.
B. September 1971 - September 1973
Position: Graduate Assistant to the Assistant Dean of Research and Development - College of Education
1. Wrote and processed various computer programs for the college.
2. Coordinated in developing the Computer Management Information System for the College of Education.

II. University of South Florida, Tampa, Florida
August 1967 - September 1971
Positions: Coordinator of Computer Planning; Assistant Professor; Faculty Consultant
A. Computer Research Center
1. Coordinator of all administrative computing systems for the University - August 1967 - July 1968.
2. Coordinator and Instructor in non-credit seminars offered by Computer Research Center - January 1968 - September 1971

3. Faculty Consultant on computer information to College of Business Administration (July 1968 - August 1969) and to College of Education (September 1969 - September 1971).

B. College of Business Administration
1. Assistant Professor for instruction in Computer and Systems Classes - March 1968 - August 1969.

C. College of Education
1. Assistant Professor for instruction in computer classes to Graduate Adult, Vocational, and Business Education students - July 1969 - September 1971.

D. Department of Continuing Education
1. Instructor in Adult non-credit computer classes - Fall 1968 - Fall 1969.

III. Hillsborough Junior College, Tampa, Florida
September 1969 - August 1971
Position: Part-time Faculty
1. Instructor in Computer Programming Classes.

IV. Indiana University, Bloomington, Indiana
February 1965 - August 1967
Positions: Associate Registrar; Instructor
A. Associate Registrar
1. Coordinated all computer registration.
2. Coordinated all University student record keeping.
3. Coordinated development of all University Class Schedules.
B. Part-time Instructor
1. Taught part-time adult courses in "Introduction to Data Processing."

V. Frostburg State College, Frostburg, Maryland
August 1963 - February 1965
Positions: Assistant Registrar; Data Processing Manager
A. Assistant Registrar
1. Coordinated all Class Schedules, Registration, final exam schedules, and classroom assignments.
B. Data Processing Manager
1. Developed (from beginning), organized, and managed installation of a tabulating data processing system.

VI. International Business Machines Corporation, Pittsburgh, Pennsylvania
January 1962 - August 1963
Position: Systems Engineer
1. Assisted in the organization of, installation of, and programming of computer systems for customers.
2. Taught classes in computer information and languages to customers.

VII. Blue Cross of Western Pennsylvania, Pittsburgh, Pennsylvania
May 1959 - January 1962
Positions: Assistant Supervisor; Programmer
A. Assistant Supervisor
1. Supervised 40 employees in the function of processing Blue Cross claims.

B. Programmer
1. Developed computer programs and systems for the Association.

Other Positions Held

Faculty Consultant - Computer Consultant at Kentucky Wesleyan College
Systems Consultant - Model Cities Program, Tampa, Florida

Computer Equipment and Language Knowledge

IBM 650, 1401, 1440, 1460, 1410, 360/65
BURROUGHS B-3500, NCR CENTURY 100, CDC 6500
S.O.A.P.; S.P.S.; AUTOCODER; FARGO; RPG; COBOL; FORTRAN; PL/1; CUPL; APL; MARS

Outside Activities and Membership

Association of Educational Data Systems (AEDS)
Florida Association of Educational Data Systems (FAEDS)
American Educational Research Association (AERA)
Florida Educational Research Association (FERA)
Phi Delta Kappa
Kappa Delta Pi
Omicron Delta Kappa
Sigma Chi Alumni Association
Past President - Tampa Bay Chapter of A.C.M. (Computer Professionals)
Past President - Bloomington, Indiana Junior Chamber of Commerce
Past President - Frostburg, Maryland Junior Chamber of Commerce

Military Service

U.S. Army - Medical Corps, December 1956 to December 1958
Honorable Discharge