DOCUMENT RESUME

ED 112 723 HE 006 652

AUTHOR	Ericksen, Stanford C., Ed.
TITLE	Development and Experiment in College Teaching, No. 11.
INSTITUTION	Committee on Institutional Cooperation.
PUB DATE	75
NOTE	65p.
AVAILABLE FROM	Stanford C. Ericksen, Center for Research on Learning & Teaching, 109 E. Madison Street, Ann Arbor, Michigan 48104 ($1.00)
EDRS PRICE	MF-$0.76 HC-$3.32 Plus Postage
DESCRIPTORS	Annual Reports; *College Instruction; Educational Administration; Educational Change; *Educational Experiments; *Educational Research; *Higher Education; Instructional Innovation; Instructional Programs; *Professional Education; Program Descriptions; Teaching Quality

ABSTRACT

Educational experiment and development in the disciplines and professional schools at 11 midwestern universities is examined in a compendium of reports. The purpose is to exchange information among college teachers, administrators, and educational researchers about ways to improve the conditions for learning. Most of the reports focus on changes in a particular discipline area, but many of the arrangements can easily be adapted for use in other departments and interdisciplinary programs. Department-based projects are described along with those dealing with institutional support. The latter covers institutional facilities, instructional media arrangements, and broad programs which span different disciplines. The last section of this report is the cumulative index to all 11 reports, which has been updated by deleting references to projects that are no longer active. (LBH)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED112723

Development and Experiment in College Teaching

No. 11
Spring 1975

Prepared and distributed
by the CIC Panel on Research
and Development of Instructional
Resources

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRO
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRE
SENT OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY

ERIC

Foreward

These annual reports comprise collections of experimental instructional projects and educational programs generated by teachers at the Big Ten universities. Our purpose is to exchange information among college teachers, administrators, and educational researchers about ways to improve the conditions for learning. Most of the reports focus on changes in a particular discipline area, but many of these arrangements can be easily adapted for use in other departments and interdisciplinary programs.

The entries in Section I, Subject-Matter Area, describe department-based projects. Section II, Institutional Support, includes descriptions of institutional facilities, instructional media arrangements, and broad programs which span different disciplines. Section III is the Cumulative Index to all eleven reports. This index has been updated by deleting references to projects that are no longer active (the Archival Index lists these inactive projects).

Examination copies of earlier reports are on file in the office of each institutional representative (see p. iv), and at the CIC central office. Requests to purchase back issues should be sent to the address below. This publication is not copyrighted and teachers and administrators are encouraged to make free use of the material.

BACK ISSUES ARE AVAILABLE
at $1.00 per issue from:

Stanford C. Ericksen
Center for Research on Learning and Teaching
109 E. Madison Street
Ann Arbor, Michigan 48104

Professor Ericksen is chairman of the CIC Panel on Research and Development of Instructional Resources and editor of these reports.

University Representatives Panel on Research and Development of Instructional Resources

These Panel members served as the Board of Editors of this Report.

University of Alberta
William D. Patterson
Department of Geography

University of Illinois
Charles J. McIntyre, Director
Office of Instructional Resources

Indiana University
A. Gene Faris, Dean
Learning Resources

University of Iowa
Lowell F. Schoer
Lindquist Center for Measurement

University of Michigan
Stanford C. Ericksen, Research Scientist
Center for Research on Learning and Teaching

Michigan State University
Robert H. Davis, Director
Instructional Development and Telecommunication Services

University of Minnesota
Russell W. Burris, Director
Consulting Group on Instructional Design

Northwestern University
B. Claude Mathis, Director
Center for the Teaching Professions

Ohio State University
George P. Crepeau
Associate Provost for Instruction

Purdue University
Warren E. Seibert, Associate Director
Measurement and Research Center

University of Wisconsin
Donald N. McIsaac, Associate Dean
School of Education

Contents

Foreword iii

Universal Representatives

I. SUBJECT-MATTER AREA

ARCHEOLOGY

INSITE: A Simulation of Archeological Site Excavation 3

ART ARCHITECTURE

Videotapes in Architecture and Sculpture Classes 4

CHEMISTRY

Audio-visual Instruction in a Chemistry Laboratory 5

The Chemistry of Life: A Series of Short Videotapes 6

CHEM TIPS: Individualized Instruction in Teaching Chemistry Courses 7

CULTURAL STUDIES

Research in Latin American Studies Through Case Problems 8

AV Modules on the People's Republic of China 9

Interdisciplinary Courses and Programs in Middle Eastern Studies 10

The Classical Humanities Learning Center 11

EDUCATION

Computer Exercise in the Diagnosis and Treatment of Adult Illiteracy 12

ENGINEERING

Computer-administered Quizzes in Engineering 13

Engineering Counselor-Tutorial Program 14

ENGLISH

Program for Teachers of Freshman Composition 15

5

GEOGRAPHY

Teaching Preparation for Graduate Students in Geography 16

LAW

Videotape Review of Teaching Techniques in Law Courses 17

MEDICINE

Medical Education Resources Program 18

Workshop for Developing Self-instructional Materials 19

NURSING

Learning Resources Center for Nursing 20

PHARMACY

Audiotutorial Instruction in Medical Pharmacology 21

PHILOSOPHY

The Development of a Computer Assisted Course in Introductory Logic 22

PSYCHOLOGY

A Contingency-managed and Individualized Course in Behavior Modification 23

The Use of Color Film in a Large Introductory Psychology Course 24

Project OUTREACH: Psychology Students in the Community 25

PSI in a Child Psychology Course 26

Mini-courses in an Introductory Psychology Lecture Course 27

SOCIOLOGY

Study of Criminology Through a European Tour 28

The Use of Literature in Teaching Introductory Sociology 29

ZOOLOGY

A Microfiche System for a Self-instructional Laboratory in Zoology 30

II. INSTITUTIONAL SUPPORT

ADMINISTRATION LEVEL ARRANGEMENTS

Institute for Administrative Advancement 33

Changing the Graduation Requirements for Students in the Liberal Arts 34

Reorganization of an Instructional Services Agency 35

AUTOMATION AND TECHNOLOGY

College of Education Computer Lab 36

Instructional Media Distribution Center 37

FACULTY DEVELOPMENT

Handbook of Instructional Resources 38

A Faculty Fellow Program in the Center for the Teaching Professions 39

MEASUREMENT AND EVALUATION

Test Scoring Through Interactive Terminals 40

GRADER: A Computerized Record Keeping System 41

Computer Programs Provide Better Management of Large Enrollment Courses 42

EXTRA-DEPARTMENT PROGRAMS FOR THE INDIVIDUAL STUDENT

A Residential Academic Program: The Living Learning Center 43

III. Cumulative Index 47

I. Subject-Matter Area

ERIC Full Text Provided by ERIC

ARCHEOLOGY

INSITE: A Simulation of Archeological Site Excavation

INSITE is a computer-based simulation of an archeological excavation developed at Purdue University to resolve several critical problems in teaching anthropologically-oriented archeology. While the structuring of archeological research has become more complex, involving more explicit research designs, sophisticated sampling strategies, and computer assisted data analysis, the lack of adequate training facilities in many programs hampers field training. Since the problem formulation stage of archeological fieldwork must begin at a lower level of training to accommodate the complexity of archeological research, simulations compensate very well for the lack of training facilities.

INSITE involves the simulated excavation of an artificially created archeological site by teams of students. Through the experience of actually carrying on an "independent" research project, students learn the interconnection of the various phases of archeological fieldwork. The "site" consists of a series of maps including land contour, architectural features, burials, and workshop areas. The information regarding the site is divided into bits of data representing natural excavation units (either stratigraphic layers or arbitrary levels). Data on counts of artifacts, stratigraphic information, mortuary patterns, and ecological data are stored on magnetic tape for retrieval by the student teams.

The simulation is run in a series of sessions: surface collection and test excavation; larger scale excavation and deep sounding. Since each team samples only 15-20% of the total site information, each must decide on an excavation strategy. After a sampling strategy is determined, additional information is acquired by submitting the strategy as a job request using the Purdue batch processing system. Upon receiving the requested information, each team must then modify its strategy of excavation for the following session. Thus, the research flexibility is analogous to the actual conduct of site excavation. In addition to the data stored in computer files, each team receives Xerox copies of the maps and architectural information correlating with the units chosen.

Upon completing the simulation with the exhaustion of the team's supply of excavation units, a final site report is prepared. Each team member specializes in analyzing one category of data, preparing one section of the final report. In addition to the written report, all teams prepare brief oral reports which are presented in a single session. In this way, each team can debate the effectiveness of approaches used by other teams. After all discussion ceases, the overall structure of the site is revealed and students may evaluate their methods.

For additional information, contact Professor Robert E. Fry, Department of Sociology and Anthropology, Purdue University, West Lafayette, IN 47907.

Videotapes in Architecture and Sculpture Classes

Under the direction of Professor Lester Lader, Architecture and Urban Planning courses at The University of Michigan employ portable monitoring cameras to project realistic representations of three-dimensional models of cities. With the aid of a three-wheel cart or boom arm, the camera winds its way down streets, peering under the balconies and into the windows and narrow passageways of models designed by students. Lighting may be adjusted to simulate any time of the day. Because the monitor registers to some degree the perspective of a person walking down the street, students can more readily determine where design alterations will improve their models. In a sense, students learn design through development as they evaluate their models represented on the monitor, change them and observe the effects of the alteration.

Frequently, students encounter design problems because they cannot visualize the effect of particular modifications. In projecting a picture which corresponds to reality, the videotapes alleviate the problem. The improvement in student performance as a result of the videotapes has encouraged planning for a multidisciplinary course to serve students from other disciplines who are faced with similar design problems.

Art professor Jon Rush incorporates an equally interesting application of video as an integral part of his sculpture classes. Twenty black and white videotapes demonstrate sculpturing techniques used with a variety of materials such as bronze, wax, plastic, metal, wood, or plaster. Each videotape focuses on a particular medium and describes all steps in the process. Several of the tapes record recognized artists demonstrating their unique methods.

As in the architectural design classes, the videotapes remedy a recurring problem. Ordinarily, sculpture students work in different mediums at different times, therefore, classroom demonstrations are of necessity hurried to allow enough time to meet the needs of other students and, of course, they are fragmented because most processes require several days to complete. The videotapes, which replace all lengthy classroom illustrations, are available to students in the library as they are needed. Fragmentation ceases to be a concern since taping was done in short clips, earmarking the various stages in the process. Students judge the taped demonstrations as highly satisfactory with the further advantage of freeing the instructor to personally assist them in their artistic development.

Both video applications were supported by Instructional Development grants from the Center for Research on Learning and Teaching.

For further information, contact Professor Lester Lader, 3126 Architecture and Design, and Professor Jon N. Rush, 2066 Architecture and Design, The University of Michigan, Ann Arbor, MI 48104.

CHEMISTRY

Audio-Visual Instruction in a Chemistry Laboratory

A revision of the undergraduate chemistry curriculum at the University of Iowa replaced the traditional lecture laboratory course with separate lecture and laboratory courses. The revised laboratory course requires three hours of laboratory work and increases the emphasis on quantitative experiments. Consequently, large numbers of first year students (about 750 annually) must be taught to use expensive and delicate instruments that in previous years were used only by a few students at the second and third year levels. To relieve some of the one-to-one instructional time required of teaching assistants, continuous loop film material which utilizes 16 mm film strips and magnetically recorded sound have been developed to teach students how to use these instruments.

Seven programs describe the use and care of the single pan chemical balances, pH meters, spectrophotometers, the magnetic stirrer, and the technique of pH titrations. The films were produced in two versions: the lab instructor usually presents a 5-10 minute version to several students or to the whole class at once, a shorter review of 2-3 minutes is available with a viewer near the instrument in the laboratory. This allows the individual student to review operations and procedures when necessary. An Audiscan Projector provides viewing on an internal screen with either loud speaker or ear phone audio output. In addition, 35 mm slide and tape versions of the presentation are available.

The response from students and instructors has been positive and the films appear to have accomplished their purpose. The instructor must still answer questions and check on initial operation by the student, but abuse of instruments has been reduced and the instructor can more easily manage the entire class on days when instruments are first used. Further programs are being developed which will include other laboratory techniques and deal with the typical mathematical calculations that beginning chemistry students find difficult.

The development of these instructional aids was supported by a grant from the University of Iowa through its summer Teaching Fellowship Program.

Further information can be obtained from L. David Cater, Department of Chemistry, University of Iowa, Iowa City, IA 52242.

CHEMISTRY

The Chemistry of Life: A Series of Short Videotapes

At the University of Illinois, introductory chemistry courses are taught in groups of 25 students under the immediate direction of a graduate teaching assistant. During each class meeting, a twenty-minute videotape introduces chemical concepts which are later elaborated by the teacher. Student preference for small group activities rather than large lecture courses encouraged chemistry instructors to experiment further with smaller classes augmented by videotapes. Thus, a second semester chemistry course for biology majors called "The Chemistry of Life" is dominated by a series of videotapes which describe the principles and applications of chemical bonding, molecular interaction, molecular energetics and reaction kinematics using examples from the biological sciences. As in the introductory course, graduate teaching assistants present additional information, answer questions, lead discussions, and administer tests.

In an effort to depart from the traditional lecture format, the text of each tape is spoken by two voices, one male and one female. The speaker appears infrequently on the monitor and only for short periods of time.

Considerable effort has been expended to produce stimulating and interesting content for each videotape. Filmed in color by the Office of Instructional Resources, the tapes display structural drawings, rules and tables, written material is presented by filming the images on a PLATO screen. Using PLATO, the computer-based education system operative at the University of Illinois, writing is dramatized, as words are written and erased at appropriate moments in the script. As a medium for computer animation, PLATO is quite effective and several videotapes include PLATO animations of molecules, graphs and bonding orbitals. More complex molecular graphics have been prepared off-campus and introduced in the lessons. Additional tapes record laboratory experiments conducted on campus. Acted scenarios illustrate some ideas. For example, a gambling scene demonstrates the laws of probability, a soap-making scene illustrates the chemistry of soap and the idiom of dance simulates certain features of molecular processes and interactions.

Although the project evaluation is incomplete, early indications suggest that students react quite favorably to the new videotapes.

For information concerning the course content and philosophy, contact Professor I. C. Paul, Department of Chemistry, University of Illinois, Urbana, IL 61801.

CHEM TIPS:
Individualized Instruction in Teaching Chemistry Courses

CHEM TIPS (Chemistry Teaching Information Processing System) is a diagnostic computer program which individualizes instruction in undergraduate chemistry courses at the University of Wisconsin. Based on TIPS, a more general program developed by Dr. Allan C. Kelley (see Report No. 3, Spring 1967), CHEM TIPS monitors each student's progress, identifies specific weaknesses and strengths in the grasp of course material and prescribes individual study assignments.

Every week students take a ten-minute multiple choice "survey" designed by the professor to measure their understanding of course content. These surveys are not used for grading; their purpose is to assess student difficulties and assign appropriate remedial exercises. CHEM TIPS processes student responses by measuring them against "decision rules" previously prepared by the professor. From these data the program generates individual reports for the students along with reports to the professor and teaching assistants.

The student's report, available in two or three hours, identifies precisely where the student excels or needs assistance, suggests ways deficiencies might be overcome, and details an individually tailored assignment for the period immediately ahead. Special review sessions are recommended for the consistently poor student.

Teaching assistants receive a separate report for each of their sections to allow instructional modifications for the groups according to performance. The reports contain detailed statistical analyses of student responses by groups of questions or concepts and by single problems. In addition, CHEM TIPS lists assignments and instructions prescribed for each student, although numerical scores are not indicated. The report prepared for the professor includes statistical analyses but reflects a consolidated profile of the entire class.

Using CHEM TIPS, professors and teaching assistants can modify their courses in ways based on highly specific student feedback. The program is a viable demonstration of the computer as a useful teaching tool, particularly for large courses where face-to-face individualized instruction is impossible.

CHEM TIPS has been used at the University of Wisconsin-Madison since 1972 in several undergraduate courses taught by different instructors. In the 1974-75 fall semester, CHEM TIPS was implemented in courses at UW-Milwaukee, UW-Stevens Point, UW-LaCrosse and UW-Superior. Both faculty and students respond favorably to this approach.

For further information, contact Bassam Z. Shakhashiri, Department of Chemistry, University of Wisconsin-Madison, 1101 University Avenue, Madison, WI 53706.

CULTURAL STUDIES

Research in Latin American Studies Through Case Problems

"Latin American Research Materials and Methods" is an interdisciplinary course at the University of Minnesota which trains graduate and advanced undergraduate students to use bibliographic sources and various methods of research to explore problems in Latin America. In previous years, each student prepared an exhaustive bibliography on a relatively narrow theme related to the student's major and an area of interest in Latin American Studies. However, the single major paper failed to provide a systematic development of research knowledge and skills appropriate for the many disciplinary areas represented in the program, exposure to important bibliographic sources was marginal. As an alternative approach, specific Latin American issues of regional or comparative importance were formulated into case problems emphasizing the complexity and contradictory nature of resource information.

Initial class sessions define bibliographic organization, present various search strategies and introduce evaluative criteria for assessing the bibliographic construct in various fields. Students review the principal works upon which more specialized Latin American materials are based and study their basic text, a 67-page guide to major Latin American bibliographies and reference sources compiled by the course instructor.

After mastering the background material for systematic research, the student proceeds to employ that knowledge in the case problems which are carefully sequenced according to skill development, resources consulted and problem difficulty. Each student maintains a log in which he/she records case perception and the exact sequence of sources consulted as the problem resolution is pursued. In the course of the quarter, each student handles cases utilizing official publications, statistical sources, colonial records, periodical literature and maps. Case solutions are presented individually and are evaluated according to student differences, mastery over the materials and methods discussed in the class lectures, the number and sequence of bibliographic manipulations, the application of appropriate research methods, and the accuracy of the solution.

Cases completed by both graduates and undergraduates exhibit a significantly greater sophistication in identifying information as well as an appreciation of the potential and limitations of specific sources.

For additional information, contact Professor Peter T. Johnson, Latin American Studies, 111 Johnston Hall, University of Minnesota, Minneapolis, MN 55455.

AV Modules on the People's Republic of China

Courses dealing with various aspects of the People's Republic of China are attracting increasing numbers of students from various disciplines. Regrettably, audio-visual materials on contemporary China are virtually non-existent, partly because of linguistic and technical difficulties and partly because of the stringent Chinese screening processes which discourage audio taping.

Michigan State University professor Dr. Joseph J. Lee proposes to eliminate this educational gap by preparing AV modules from some 2,000 slides and 25 hours of tape on Chinese society, culture and leaders he produced while visiting China in the summer of 1972. Under a grant from International Programs and the Educational Development Program, Dr. Lee interviewed Chinese leaders of communes and factories and participated in a rare five-hour discussion with Premier Chou En-lai. The uncensored tapes and slides provide insight into the style and thought patterns of Chinese leaders and describe the structure and functioning of the society they govern.

In order to make this rare group of materials available to faculty and students, Dr. Lee, with support from the Educational Development Program, is reorganizing the slides and tapes into a series of AV modules covering subjects such as communes, women in China, art and theater, industrialization, education, family planning, day care, and government.

A somewhat unique development process is utilized to create the AV modules. The audio tapes, all in Chinese, were first duplicated to prevent damage to the original masters, the duplicated tapes were transcribed into Chinese script and subsequently translated into English. This two-step transcription-translation process is necessary to insure accuracy of the final translation and also to permit editing of politically sensitive translated materials. Using the edited English manuscript and the 2,000 slides, Dr. Lee is developing individual modules. As each module is completed, it is tested in Dr. Lee's Humanities course and revised to meet module objectives.

All modules will be completed by the summer of 1975. The series will by used in various on-campus courses and marketed through the MSU Instructional Media Center.

For further information, contact Dr. Joseph J. Lee, Department of Humanities, 298 Ernst Bessey Hall, Michigan State University, East Lansing, MI 48824.

CULTURAL STUDIES

Interdisciplinary Courses and Programs in Middle Eastern Studies

Cooperation among various departments to implement new degree programs and interdisciplinary courses has significantly enriched and broadened the curriculum in Middle Eastern Studies at The Ohio State University. The Office of Academic Affairs and the College of the Humanities currently offer two International Studies programs for undergraduates, Middle East and Islamic Studies, in which students combine extensive work in a Middle Eastern language with courses in a wide range of disciplines.

Two popular interdisciplinary courses, "Introduction to the Modern Middle East" and "The Golden Age of Islamic Civilization," combine the talents of faculty in Middle Eastern and Jewish history, Arabic language and literature, Hebrew language and literature, anthropology, economics, political science, philosophy, and the history of art. Another related course, "History of Religions," hosts guest lecturers from anthropology and various fields of history. Middle East faculty also cooperate informally in courses and programs; for example, in a history course entitled, "The City: Ancient and Medieval," the instructor, a Byzantinist, arranges guest lectures on the Middle Eastern city.

To provide stimulation outside the classroom, the Office of Academic Affairs sponsors several interdisciplinary faculty committees. One of the most active groups, the Committee on Near and Middle Eastern Studies, provides a forum for informal contact among the twenty Middle East-related faculty. The Committee frequently sponsors national and international meetings and conferences, such as the American Oriental Society, and invites guest lecturers to speak at OSU.

Students in all of these courses receive a much broader exposure to the area under study than if they were confined to only one lecturer or discipline. Faculty who lecture in these courses are intellectually stimulated through their contact with colleagues in related fields. In summation, Middle Eastern Studies at OSU are wide-ranging--in time, from ancient to contemporary; in space, from Spain to India; in perspective, from art to political science. This broad spectrum of interests creates a richer and more exciting program for all concerned.

For further information, contact Marilyn R. Waldman, Department of Middle Eastern Studies, The Ohio State University, Columbus, OH 43210.

The Classical Humanities Learning Center

In an attempt to present an integrated picture of the influence of classical mythology on the shape of Western art, music and literature, The Ohio State University established the Classical Humanities Learning Center to complement courses in classical myth.

With support from a federal Title VI grant, the Center maintains 10 taped slide lectures, or review units, which focus, reinforce and illustrate the student's readings, whether they are from a mythology text or from a collection of primary sources in translation or both. The lecture on each tape discusses the origins, character, appearance, worship and attributes of the Greek gods and the most influential stories from Greek myth and saga. Each tape includes a sound track of music influenced by classical myth. The slides depict art objects (as well as maps and genealogies), ranging from Mycenaean vases to modern painting and sculpture.

The presentation of the materials is completely controlled by the student in an audio-visual carrel equipped with a built-in slide projector and tape recorder. The student study guide outlines the slide lectures; in this way, students viewing the lecture can associate proper names with correct pronunciation and a visual representation. Students usually spend an hour a week listening to the 30-40 minute tape and examining the 70-80 slides. A teaching associate or professor is available in the Learning Center to answer questions, pursue topics further and counsel students.

Freed from the burden of "telling stories" in class, the teacher can pursue whatever areas in the interpretation of myth students might enjoy, such as the origins and nature of myth, mythopoeic thought, myth in religion and literature, and archetypal patterns in myth. The full literary presentation of the subject offered by the texts is essential to the course. The taped slide lectures focus the student's study on those essential aspects of mythology in such a way that the artistic interest and personal delight which the artists of the Western world took in classical myth become the vehicle through which the student encounters the subject matter.

Student reaction to the materials has been excellent. Ninety percent of the students indicated the materials made the course more interesting and, perhaps more important to them, an equal number believed that using the materials had improved their grade.

For further information, call Professor John Davis, Department of Classics, The Ohio State University, Columbus, OH 43210, 614/422-7810.

EDUCATION

Computer Exercise in the Diagnosis and Treatment of Adult Illiteracy

The Consulting Group on Instructional Design at the University of Minnesota is designing a set of four case studies illustrating problems typically encountered by instructors of Adult Basic Education. The first case study, initiated in the 1974-1975 seminar/workshop on instructional design for faculty, emphasizes the importance of examining reading and math errors to diagnose and treat adult illiteracy.

The initial case study is a computer program which guides the student through several stages of diagnosis in the hypothetical case of a semi-literate adult with no job skills; the client's reading level is below grade 4 and reading errors are influenced by the Black dialect. In the first stages of the program, the student collects background information on the client and selects appropriate math and reading tests to administer. The program responds with test results which review the math and reading errors and indicate correct and incorrect choices. During successive stages of the diagnosis, the program comments on the relevance of certain information and directs the student to books and articles which elaborate on the learning problems exhibited by the client.

When the student determines the counseling and case management needs of the client, he/she implements a remedial program to which the computer program responds with commentary on the usefulness of the teaching methods and the accuracy of the student's analysis of reading and math deficiencies.

The high level of interest expressed by both faculty and students reflects the computer program's helpful instructional value.

For further information, contact Assistant Professor Rosemarie J. Park, Department of Curriculum and Instruction, 206 Burton Hall, University of Minnesota, Minneapolis, MN. 55455.

ENGINEERING

Computer-administered Quizzes in Engineering

A sophomore electrical engineering laboratory course at the University of Indiana employs a computer program to generate quizzes for students and perform routine record-keeping chores. Currently operating on the IUPUI DEC-10 timesharing system, the quiz-administering program is written in the BASIC language because of its extensive string and data file capabilities. The system format permits access in either a student program or an author program.

To access the student program, the student identifies him/herself to the computer and requests the program and one of ten quizzes. After the program locates the specified quiz, an interactive testing session ensues. During the quiz, the program refers the student to a set of figures contained in a notebook to use in formulating answers. At any time, the student may also request a review of quiz objectives or a record of previous quiz scores. Although the quizzes were originally intended for use following the performance of associated experiments, quite often students refresh their knowledge by taking quizzes a second time. Because the BASIC number generator selects random questions each time a quiz is executed, the student is not limited by the mechanical repetition of questions he/she has already viewed.

The author program maintains individual student record files containing student identification, the number of times the student accessed the system, the number of times each question was viewed before it was passed and quiz scores. The program prints student records in summary or in detail and allows the instructor to edit individual records.

The computer-generated quizzes not only relieve the instructor of a good deal of record-keeping, but also permit students to proceed at their own pace and review lessons as they choose.

For additional information, contact Professor Richard H. Turpin, Division of Engineering, Indiana University-Purdue University at Indianapolis, 1201 East 38th Street, Indianapolis, IN 46205.

ENGINEERING

Engineering Counselor-Tutorial Program

The Department of Freshman Engineering at Purdue University conducts a special Counselor-Tutorial program to assist new engineering students who appear to be academically marginal or academic risks in engineering curricula. While the C-T students satisfy minimum entrance requirements, they invariably have SAT-Math scores below 550, lack a good background in trigonometry, and show various other academic deficiencies. Eligible students are invited to participate during their first pre-registration, and virtually all accept this invitation. In 1971, the program's first year, about 20 students participated, now in its fourth year, the program aids nearly 100 students.

Within the C-T program, students are required to enroll in a special three-credit course in "Math-Science Problem Solving." The remedial course teaches students to use the slide rule and provides individual tutoring in mathematics, chemistry and physics. Class attendance is required five days a week in order to form habits of regular attendance. Class sessions try to offer students early experience with successful learning in their mastery of the slide rule.

Whether or not participants continue during their second semester is optional, although the majority do continue. The program generally expands at this time as freshmen engineers who experienced academic difficulty in the first semester join the tutorial. For the majority of participants, their undergraduate program develops conventionally after the first semester's work, but in a few cases, the pace remains slow and, in effect, extends the normal four-year curriculum to five years.

Evaluation of the C-T program yields a mixed but promising picture. On the whole, students' retention rate in the University, if not always in engineering, is satisfactory and especially good for the first participant group. The grade point averages of C-T students are generally satisfactory, varying around a central value of B- or C+. Thus, even though broad generalizations about program success cannot be made, the results contain sufficiently bright spots to justify the continuing confidence and interest of faculty, students and administration.

For further information, contact Professor Geraldine Deputy, Department of Freshman Engineering, ENAD, Purdue University, West Lafayette, IN 47907.

ENGLISH

Program for Teachers of Freshman Composition

Each year Indiana University appoints 15 to 25 graduate students to teach freshman composition. Although the new instructors possess a thorough grasp of literature, they frequently have no teaching experience and little knowledge of techniques for successfully teaching composition skills. To insure that these instructors acquire an understanding of the objectives, materials and methods for teaching a useful course, the Indiana University Department of English has instituted a program centering around videotapes which demonstrate strategies and designs for teaching composition.

In a course in which all new instructors enroll, a rationale and model for teaching composition are introduced. Parts of the overall model are demonstrated through a series of videotapes filmed in two freshman composition courses taught by experienced graduate students. A handbook, entitled "Getting Started in Classroom Composition," further explains the theory, approach and methods employed in the videotaped models and assists instructors in organizing their own courses. Through exposure to a variety of objectives and techniques for achieving them, new instructors enhance their skills over a period of several months.

Under the direction of Michael C. Flanigan, Director of Freshman Composition, the program is currently being modified to insure its usefulness over a period of years for composition instructors at the University of Indiana-Bloomington campus and perhaps at other campuses throughout the state. Eventually, the program will be available outside the state of Indiana.

For further information, contact Michael C. Flanigan, Director of Freshman Composition, English Department, Indiana University, Bloomington, IN 47401.

GEOGRAPHY

Teaching Preparation for Graduate Students in Geography

Repeated efforts have been made during the past half-century or so to organize and sustain programs for preparing graduate students to teach in colleges and universities. Generally, these are independent, ad hoc programs drawing students from several departments within a given university. As interdisciplinary programs, they tend to emphasize general skills and seldom focus on techniques which are particularly applicable to the student's discipline.

As an alternative approach, the Association of American Geographers established an interuniversity project in 1973 to incorporate teaching preparation into the curriculum for doctoral students in geography. With assistance from the National Science Foundation, Teaching and Learning in Graduate Geography (TLGG) links geography departments across the nation and promotes the exchange of ideas and programs which seek to improve the quality of teacher preparation. Specifically, the national project tries to strengthen these programs by promoting interaction on three levels: among the departments, between the programs and the rest of the disciplinary community; and between the programs and the greater environment of educational practice and research. With considerable variation from campus to campus, the departmental programs sponsor orientation sessions, seminars on teaching and learning, practicums, and diagnostic observation of teaching.

In the program's first year, six universities participated, three of which were CIC representatives: the University of Iowa, the University of Illinois, and the University of Chicago, where TLGG headquarters are located. In 1974, ten more universities joined TLGG including the University of Indiana, Michigan State University and The University of Michigan. A report describing insights gained from TLGG activities of the first year, both at the departmental level and at the project level, shapes activities as the project expands.

For a copy of the TLGG report or other information, contact Professor William D. Pattison, TLGG Project Director, Department of Geography, University of Chicago, Chicago, IL. 60637.

LAW

Videotape Review of Teaching Techniques in Law Courses

In the Spring of 1974, The University of Michigan law faculty met each week for a month to participate in a rather unique seminar--they viewed videotapes of their peers conducting classes and followed the presentation with an active discussion of the varying teaching methods. Because most law schools provide little training in the techniques of teaching, the seminars fulfilled a recognized need as confirmed by the attendance of more than 85% of the faculty at each seminar.

Eight professors, including the Dean of the Law School, were videotaped in black and white during a typical class session. A special-effects camera created a split-screen and the viewers could observe the teacher and the class simultaneously. Each professor previewed his session, selecting segments representative of his particular teaching style. The 15-20 minute segment was later viewed by the seminar participants who then questioned the professor regarding his approach to the subject and the details of his method.

As an impetus to discussion, each videotape was analyzed according to specific criteria aimed at creating a profile of the professor's performance. Data were used to measure a variety of factors, including the amount of time the teacher spent talking, the number and type of questions addressed, and the length and frequency of student responses. The raw data yielded some fairly subtle revelations, i.e., law is considered a highly interactive discipline, but teachers spent better than two-thirds of the time talking. As one might expect, such conclusions provoked much lively discussion.

Although no formal post-seminar evaluation was pursued, the positive responses indicate that these sessions provided valuable in-service training. Mr. Charles Borgsdorf, Assistant Dean and program coordinator, believes the exposure to videotape procedures has encouraged more extensive use of video in law classes. Courses in family law and written and oral advocacy, for example, use simulated client interviews and role playing to explore interviewing techniques.

Certainly peer evaluation of one's classroom performance presents a potentially threatening situation, even to the teacher with many years' experience. Fortunately, the spirit of this venture inhibited unpleasant developments. The faculty recognized the possibilities for professional growth and seized the opportunity to glean valuable insights into effective teaching through observing more experienced peers and re-evaluating their own techniques.

For further information on the seminars, contact Mr. Charles W. Borgsdorf, Assistant Dean of Law, 316 Hutchins, The University of Michigan, Ann Arbor, MI 48104.

MEDICINE

Medical Education Resources Program

The Medical Education Resources Program (MERP) at the University of Indiana produces videotapes, audio cassettes, slides, and motion pictures to support a statewide program in medical education. In addition to an instructional media center for undergraduates and a medical center for undergraduates, MERP operates a statewide, closed-circuit medical television network and disseminates videotapes for continuing medical education at teaching hospitals throughout the state. At each level of education, media materials reflect the needs of the student.

Lectures and experimental laboratories in undergraduate education are supplemented by videotapes which document demonstrations and illustrations and record special lectures and classic patient demonstrations. Enrichment materials provide additional information for advanced students and review materials assist students having difficulty. Books and accompanying cassette tapes from small group projects are loaned to students from the Instructional Resources Center. The Center, a 45-carrel unit, maintains a library of software and a catalog of learning materials and permits students to borrow cassettes and cassette players and duplicate permanent tapes at no expense. Services extend to the state's seven Regional Centers for Medical Education where first year medical students in basic science courses consult the Center for media software.

More than half of the approved hospitals in Indiana use MERP videotapes in their continuing education programs. Twenty-six hospitals receive closed-circuit telecasts from MERP'S broadcasting station. The station broadcasts more hours a day to more viewers than any other medical facility in the world. The potential audience is more than 80% of Indiana's interns and residents and more than 25% of the state's physicians.

The expansion of MERP services in recent years attests to a growing acceptance of the independent study concept. Data indicate student utilization of media software is increasing and instructors are recognizing its usefulness in presenting remedial and enhancement materials.

For further information, contact Dr. Elmer Friman, Director of Medical Education Resources Program, 1100 West Michigan Street, Indianapolis, IN 46202. Phone: 317/264-4083.

Workshop for Developing Self-instructional Materials

Self-instructional materials are frequently used in medical education, and for the last three years staff at the Center for Educational Development at the University of Illinois has provided assistance to medical faculty members interested in developing such materials. During the 1973-1974 academic year, a special workshop was introduced by Center staff to aid in the development of self-instructional materials.

The major purpose of this workshop has been to assist teachers in designing instructional units which relate to specific curricular topics. The aim is to provide a set of coordinated and sequential learning aids for students in particular departments. Membership is limited to 10-15 workshop participants each of whom represent a discipline, theme, or an integrated curriculum module. Each workshop is preceded by a pre-planning session to assist potential participants in delineating areas of instruction, for which the development of self-instructional materials is appropriate. During this session, sets of self-study aids related to the area of instructional design are distributed to allow each participant to review these materials before the actual workshop activities begin.

The content of the workshop covers areas such as curriculum assessment, learning principles and their application in scriptwriting, evaluation techniques and storyboarding for media production. The Center staff guides the whole group through a common exercise on the process of designing self-instructional materials. Following this exercise, participants are divided into groups of three to work on individual units of instruction within one large segment of a curricular topic. Such teamwork provides an opportunity for the participants to draw upon the resources of their colleagues and insures integration among the various instructional units. The work session ends with a concrete plan for the technical production and assessment of student and faculty feedback on the quality of instructional materials. A Center staff member is formally assigned to work with the individual team on a continuing basis.

As a result of this workshop, participants not only develop skills in planning self-instructional materials, but also gain carefully designed instructional products for immediate use by their students. To date, teams of faculty from three colleges at the medical center have participated in these workshops. Their efforts have produced twenty self-study units, and other programs are in the process of completion.

For further information regarding the workshop, write to Dr. Abdul Sajid, CED, or to Dr. Phyllis Bogner, Department of Pharmacology, Medical Center, University of Illinois, Urbana, IL 61801.

Learning Resources Center for Nursing

In 1975, the College of Nursing at the University of Iowa established the Learning Resources Center (LRC) to enhance and supplement the learning of various nursing skills and concepts through the use of audio-visual materials. Integral to the philosophy of the LRC is an emphasis on self-paced learning and the presentation of consistently high quality learning materials to reinforce and augment classroom study.

The physical facilities for the LRC comprise almost the entire second floor of the new nursing building. Four rooms contain fifteen viewing stations where students study film strips, listen to cassette tapes and practice psycho-motor skills. Three rooms which simulate hospital settings are equipped with hospital equipment for mastery testing. One room, designated as headquarters, serves as a central checkout for all the other services offered by the LRC.

Student reaction to the LRC and self-paced learning has been varied but mostly positive. The faculty, relieved of a number of information presentations and demonstration tasks, can focus on other teaching responsibilities, such as identifying and diagnosing student learning problems.

For additional information, contact Ms. Pat Ostmoe, College of Nursing, University of Iowa, Iowa City, IA 52242.

PHARMACY

Audiotutorial Instruction in Medical Pharmacology

The audiotutorial mode of instruction is becoming rather popular in health-science education, although the empirical evidence for its effectiveness is sketchy. To obtain a more definitive evaluation, a research study was conducted by the Center for Educational Development at the University of Illinois on a self-instructional audiotutorial program in the area of diuretic drugs. A random sample of 66 sophomore medical students selected from a total enrollment of 109 were divided into two groups. One studied diuretic drugs via the audiotutorial method; the other used the lecture method.

In the audiotutorial mode of instruction, students were expected to accomplish a specific set of objectives through the exclusive use of five sets of instructional guides accompanied by audiotapes. The study guides outlined the objectives of each unit and contained illustrative diagrams, tables, clinical self tests and other data. Each unit of instruction, ranging from 15 to 21 minutes in duration, was based on principles of learning, i.e., active involvement of the learner with immediate feedback during the study session. For example, the audiotape directed students to stop the tape and test themselves after short segments of material had been discussed. With the second group of students, lectures covering identical material were given by the designer of the audiotutorial units.

The test results measuring differences in achievement indicated that the audiotutorial group fared significantly better than the lecture group. A second test which measured attitudes toward the audio method revealed strongly positive views among the students.

Since the data obtained in this study indicate that the student can learn in the absence of an instructor, these audiotutorials can be distributed to distant institutions for student use without requiring the physical presence of the author. An identical study in two outlying schools within the College of Medicine yielded similar results.

For further information regarding the study and other programs, write to Dr. Abdul Sajid, CED, or to Dr. Phyllis Bogner, Department of Pharmacology, Medical Center, University of Illinois, Urbana, IL 61801.

PHILOSOPHY

The Development of a Computer Assisted Course in Introductory Logic

In an effort to improve and personalize instruction in introductory logic courses, the Philosophy Department of The Ohio State University developed a computer-tutorial program to teach students to use various methods of logic in the analysis of commonplace arguments.

The computer program provides supervised drill and practice for two hours each week to students already exposed to the course material through lectures and reading. Computer programs have been written for various topics, including truth and validity, propositional arguments, syllogisms, Venn diagrams, induction by enumeration and analogy, necessary and sufficient conditions, and Mill's methods. Using the computer as a supplementary teaching tool affords a more personalized course in two ways. First, the immediate and individualized computer feedback allows students to proceed at their own pace. Second, the student having persistent difficulty with some aspect of the subject matter is referred to graduate teaching associates or to regular faculty. In addition to supervising student exercises, the program administers and grades the course examinations.

The computer-tutorial program is quite versatile. The propositional argument and syllogism programs, for example, present the student with arguments in ordinary English. The student rewrites the argument in logically standard English which the program evaluates for serious grammatical errors and logical improprieties. Random problem generation and solution eliminate extensive memory storage and security. The program constructs problems, solves them, compares its solution with the student's response, and on the basis of comparison, generates the appropriate comments. The use of cathode ray tube terminals instead of teletype terminals permits different formats for tabular presentations and graphic displays of Venn diagrams for the analysis of categorical arguments.

The managerial capabilities of the program allow the instructor to choose any or all of the topics programmed and to determine their order. The instructor can also add new content or modify program parameters such as grading curves and the number of required exercises. None of these capabilities require that the course instructor know the technical features of the program.

The program has been used on an experimental basis with small course sections for three quarters. Finally, overall student response has been extremely enthusiastic and has greatly exceeded expectations.

For further information, contact Ronald Laymon, Department of Philosophy, The Ohio State University, Columbus, OH 43210.

PSYCHOLOGY

A Contingency-managed and Individualized Course in Behavior Modification

The conversion of the course in behavior modification at the University of Iowa from a traditional lecture format to an individualized approach involves substituting reserve readings for lecture material, encouraging open discussions during class periods, and scheduling weekly true-false quizzes on the assigned readings.

The quizzes play a pivotal role in the instruction. Students may take a quiz as scheduled (and potentially earn bonus points) or take an alternate form during the week after the scheduled quiz. Feedback on quiz performance is immediate. Students who obtain 75% or greater earn a 10-point bonus while those who score below 75% may take an alternate test over the same material to raise their scores, although no bonus points are awarded. In this way, the weekly readings and discussions afford increased interaction between students and instructor, while the contingency system provides frequent assessment, immediate feedback and bonus point rewards for study behavior that results in meeting a weekly performance criterion.

The alternate quizzes are administered by a computer-based system (the Hewlett-Packard Instructional Dialogue facility) programmed by the course instructors. Thus, the course provides individualized contingency-managed options without requiring additional teaching personnel.

During the Fall semester of 1974, two instructors taught separate sections of the course. Both taught the first half in the conventional lecture format with a mid-term exam and the second half in the contingency format outlined above. In the Fall semester of 1975, the format sections will be reversed to provide a counterbalanced assessment of the effects of the two formats. Complete data on the project will be available in early 1976.

The development of the materials used in this course was supported by a grant from the University of Iowa through its summer fellowship program for the improvement of instruction.

For further information, contact Thomas B. Borkovec or John F. Knutson, Department of Psychology, University of Iowa, Iowa City, IA 52242.

PSYCHOLOGY

The Use of Color Film in a Large Introductory Psychology Course

Searching for an effective yet economical way to teach an introductory course to some 5,000 students each year, the psychology department at the University of Minnesota tried both television and the live lecture. Both media were found wanting and so the department then produced the entire one-quarter course on color film.

This new approach was undertaken by three experienced psychology professors, James Jenkins, David LaBerge and Kenneth MacCorquodale. The forty 45-minute films were produced under the direction of James Butler of the University Media Resources. They were done in short segments to allow for more development of visual possibilities and attention to detail, although the method required an enormous investment of time in the preparation and actual production.

The color films have one important advantage over television: they produce a quality image large enough to have impact even in a gigantic auditorium, and thus are more likely to capture and hold the students' attention. Film has several other advantages as well: It is better able to show actual objects in detail, giving the students a better view than they could have in a crowded classroom. Activities which go on outside the classroom are brought in. Graphic illustrations are built element by element as the lecturer develops the explanation. Some filmed lectures are augmented with portions of other films.

The films are shown at an appointed hour each day and are supplemented by assigned text readings. Review sessions, conducted by a graduate student course coordinator, are offered prior to each of the three examinations given during the quarter. The professors confer on selection of text readings and preparation of test questions and supervise the activities of the course coordinator.

Student opinion of each lecture and of the course as a whole is sampled regularly. During the period the course was taught through closed-circuit television, the students did not like the course, and many said they would not recommend it to a friend. In contrast, student evaluations of film indicate that 97% of students surveyed believe that the course's use of film is at least adequate or above, 95 think the course's overall effectiveness is adequate or above, and 77% believe the course is stimulating to thought.

For further information, contact John G. Darley, Chairman, Department of Psychology, University of Minnesota, Minneapolis, MN 55455.

Project OUTREACH Psychology Students in the Community

Report No. 2 (1966) of this series described Project OUTREACH which offered field placements in 16 community agencies to introductory psychology students at The University of Michigan. In the nine years since this preliminary venture, OUTREACH has expanded and currently offers field placements to 400 students each semester in 40-50 institutional and non-institutional environments.

The choice of a field placement depends, of course, on the interests of the student, and a variety of experiences are possible. A student interested in criminal justice may, for example, work with adjudicated juveniles through the Juvenile Court, group homes or training schools; or he/she may choose to join a group dedicated to preventing reincarceration of offenders. Other placements include work in mental institutions with populations ranging from early adolescents to geriatrics, homes for physically and emotionally handicapped children, halfway houses for released mental patients, elementary schools, and children's wards in hospitals. The two credit course may be elected three different semesters.

Most field placements include a weekly discussion period where students have an opportunity to discuss problems with six or seven others in similar situations. Two hundred students whose past participation in a project have identified them as able, enthusiastic leaders supervise the placements and group discussions.

Project OUTREACH also offers a series of non-credit workshops designed to develop leadership skills through studying such diverse subjects as Gestalt therapy, consciousness-raising, dance therapy, re-evaluation counseling and problem-solving. A network of all campus field placements is being formed to coordinate and share resources.

OUTREACH placements offer a critical opportunity for undergraduates to develop entry skills as professionals and to assess their vocational interests. Institutions welcome the additional contact for their clients and a chance to implement experimental programs. Participating students pose interesting research problems for graduate students in Community Psychology. Since OUTREACH employs undergraduate supervision in a setting outside the classroom, it provides a challenging model at a time when students and faculty are eager for educational innovation and universities are faced with shortages of staff and funds.

For a detailed description of Project OUTREACH, contact Ms. Shula Reinharz, Director of Project OUTREACH, 554 Thompson Street, The University of Michigan, Ann Arbor, MI 48104.

PSI in a Child Psychology Course

Each semester Psychology 235, an introductory child psychology course, serves about 250 students with diverse undergraduate majors at Purdue University. A modification of the Keller Personalized System of Instruction (PSI) is utilized to provide an individualized, self-paced teaching format.

Following a course manual written by the instructor, students independently study each course unit. When a student feels he/she has mastered the unit, he/she requests a quiz which is created when the student randomly selects five question cards from a shuffled deck constituting the pool of questions available for that unit. As many as three alternate-form quiz attempts are permitted for each unit without penalty. Quiz feedback and remediation are immediately provided by "proctors," previous students of the course selected on the basis of their excellent performance, maturity, and reliability. Demonstration of unit mastery results in points which then accumulate to determine part of each student's grade.

Points are also derived from scores received on two summative hour exams and for completion of extra projects. Projects allow students to pursue topics of special interest in greater depth. They may include written or oral reports on films, tapes, outside readings or field observation. A "mid-semester" exam is initially offered as soon as about 20 students indicate their readiness; it is then available in an alternate form at the semester mid-point. The final examination is given two weeks early for those who choose to take it and in alternate form at the end of the semester. If they wish, students may take either major examination twice and record only the higher score of the two. To discourage procrastination, students must attempt the mid-semester exam no later than mid-semester and the final no later than the end of the semester. In addition to individually paced study sessions, the class meets as a group once each week for group presentations, films, or demonstrations.

The course is rated highly by students and is widely preferred over more traditional lecture methods. The PSI method is also more effective than the lecture in promoting retention and decreasing test anxiety during examinations.

For additional information, write Professor David A. Santogrossi, Department of Psychological Sciences, Purdue University, West Lafayette, IN 47904.

Mini-courses in an Introductory Psychology Lecture Course

At Northwestern University, an introductory psychology lecture course enrolling several hundred students each semester has been restructured using the assistance of forty advanced undergraduates who teach mini-courses to small groups of students in the course. The advanced undergraduates are members of "Special Problems in Psychology," a course in which the student's primary responsibility is to serve as a resource person for students in the introductory course.

To allow introductory psychology students an opportunity to choose among several areas of study, the resource persons design two-week mini-courses on subjects ranging from mental illness or personality theory to very specific topics, such as biofeedback and psychological testing. Topics selected by the resource persons complement other class activities and provide the introductory students with a diversity of subjects for independent research. During the mini-courses, the advanced undergraduates guide small group discussions, evaluate essays and papers, and supervise independent, self-paced research projects. The instructor meets with each resource person weekly to review proposed readings and use of class time and to suggest directions in which the mini-course might proceed.

Evaluations indicate that employing advanced undergraduates as resource people in a large lecture class is beneficial for both the introductory psychology students and the resource people themselves. The introductory student becomes actively involved in the learning process in a way uncharacteristic of large lecture courses, and the advanced undergraduate gains useful experience as a teacher while also pursuing areas of special interest.

For further information, contact Ms. Camille B. Wortman, Department of Psychology, Northwestern University, Evanston, IL 60201.

Study of Criminology Through a European Tour

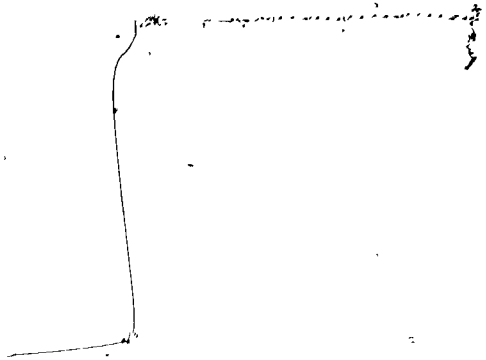
Students in an interdisciplinary Criminology course at the Ohio State University were dismayed to learn that very little substantial penal reform was occurring in the U.S. They were, however, impressed by successful programs operating in several European countries. In an effort to explore these alternative systems for dealing with offenders, fifteen students participated in an independent study course which culminated in a seven-week tour of Scandinavia, The Netherlands and Great Britain.

The course, for which students received 10-15 hours of credit, began with an intensive five-week course on campus in which students studied all aspects of criminal justice in Great Britain, Scandinavia, and The Netherlands to prepare them for the tour. Comparative application of the law, judicial court operation, prison rehabilitation programs, citizen cooperation with rehabilitated offenders and general attitudes were studied in depth and compared with current U.S. penology codes and attitudes.

Under the direction of sociology professor Joseph E. Scott, the tour group visited Institutes of Criminal Law and Criminology, prisons, the courts and police departments in their investigations. In an informal assessment of their discoveries, students concluded that Scandinavia possessed the most humane programs for dealing with offenders, although both Great Britain and The Netherlands were free of the traditional punitive attitudes characteristic of the U.S.

The participants, who were students of law, social work, mental health and other areas, evaluated the course as exceedingly stimulating and useful to their individual courses of study.

For further information, contact Dr. Joseph L. Scott, Department of Sociology, The Ohio State University, Columbus, OH 43210.



The Use of Literature in Teaching Introductory Sociology

With the support of the Undergraduate Instructional Awards Program, a phenomenologically-oriented, multidisciplinary approach to teaching introductory sociology has been introduced at the University of Illinois. Students are encouraged to understand society from the standpoint of their own subjective experience as well as from the viewpoint of the professional sociologist; to assist students in cultivating a sociological perspective, fictional literature is incorporated into the course curriculum.

Specifically, students are asked to read passages from selected literary works prior to the weekly lecture. The selections are then discussed by the lecturer as substantive examples of more abstract sociological concepts and generalizations such as bureaucracy, stratification, socialization and deviance. In later discussion sections, students consider the selection and the lecturer's interpretation, adding judgments and insights of their own.

A thorough evaluation of the project is being conducted by the Office of Instructional Resources of the University. The evaluation data collected include responses to questionnaires containing both closed and open-ended items and in-depth interviews with students in the course. According to the questionnaire findings, 91% of the students agree that teaching sociology through literature is an effective method for instilling sociological perspective, and many wish to extend the length of selections and promote more discussion in both lecture and discussion sections. In evaluating each literary selection, students identified particular passages as more "helpful" or "interesting" than others; nevertheless, all selections received more positive than negative responses on both criteria. In the interviews, students assert that literature "expresses it in a more human way, in a way students can more easily identify with"; and that "it helps bring sociology from a theoretical to a concrete plane."

Perhaps the major challenge in teaching introductory sociology rests in bridging the enormous gap from abstract sociological concepts to the student's actual, subjective experience. Literature provides a third, intermediary level of understanding. It describes experiences which are "outside" the student and allows him/her to empathize and generalize beyond his/her personal consciousness while simultaneously avoiding the systematic and often obfuscatory formulations that make sociology appear, to the introductory student, totally unrelated to human reality.

For further information, contact Robert Alun Jones, Department of Sociology, University of Illinois, Urbana, IL 61801. Also, see Jones, "The Use of Literature in Teaching Introductory Sociology," Teaching Sociology (forthcoming).

ZOOLOGY

A Microfiche System for a Self-instructional Laboratory in Zoology

During the past year, the Michigan State University Zoology Department conducted an extensive revision of the laboratory portion of an undergraduate course in the fundamentals of invertebrate zoology. With a grant from the Educational Development Program, zoology professors converted visual presentations from 35mm slides and Carousel projectors to microfiche cards and readers.

This conversion offers several practical advantages: The Department now utilizes a much larger number of slides in the laboratory sequence than was possible before due to limitations on the number of slides in a Carousel tray. Production costs for microfiche cards are considerably lower than the production costs for an equivalent number of 35mm slides. Maintenance costs are declining since microfiche bulbs burn out less frequently than Carousel bulbs. Current projections indicate that the long-term operating costs of the microfiche system are at least two-thirds less than operating costs for a comparable number of Carousel projectors.

Student response to the microfiche delivery system is somewhat mixed. Students are reluctant to purchase the $4.50 set of microfiche cards in addition to other course materials, arguing that the University is responsible for supplying software for laboratory use. However, as classroom tools, students indicate their preference for microfiche cards over the 35mm slides. Because the microfiche readers generate less heat and noise than Carousel projectors, the laboratory experience is more enjoyable. Color rendition and clarity are better as well. Perhaps most importantly, the microfiche cards become part of the student's professional library and may be reviewed any time to reinforce laboratory activities.

In general, the Zoology Department is convinced that the microfiche delivery system is equal to or better than 35mm slides in this undergraduate course.

For further information, contact Dr. Ralph A. Pax, Department of Zoology, 341 Natural Science Building, Michigan State University, East Lansing, MI 48824.

II. Institutional Support

ADMINISTRATION LEVEL ARRANGEMENTS

Institute for Administrative Advancement

The Institute for Administrative Advancement at the University of Wisconsin is an intensive six-week training program in university management which prepares faculty members for academic administrative positions. Supported with grants from The Ford Foundation and The Carnegie Corporation of New York, the Institute was established to promote women into academic administration, although the program now includes qualified men as well.

Admission is limited to 35 tenured faculty members who have been nominated by an administrative superior at their institution. Participants are generally recent appointees to the position of dean, department chairman or associate chancellor.

On arrival at the Institute, which is held annually from late May through June, participants receive an anthology of recent articles pertaining to higher education and an extensive bibliography of literature in the field. During the first week of the program, each participant is assigned a problem for analysis and solution. The problems are very real ones posed by University of Wisconsin administrators currently involved in resolving them. Individual problem-solving activities are augmented by group discussions in a series of mini-courses emphasizing current trends and problems in higher education. Guest lecturers frequently meet with participants in informal gatherings. The combination of these instructional activities offers a distillation of knowledge and experience in the subject area to prepare the administrators for their new responsibilities.

Members of the IAA faculty are senior administrators or educators with expertise in higher education administration. To offer Institute participants the broadest possible exposure to current trends in higher education, the President, Chancellor, Vice Chancellors, Deans and other university administrators meet with the participants and serve as resource people in formulating solutions.

The Institute for Administrative Advancement was first held at the University of Michigan in 1973. It is currently sponsored by the Department of Educational Administration and the Graduate School of Business at the University of Wisconsin. Institute directors anticipate continuation of the program on a co-educational basis.

For further information, contact Professor Virginia Davis Nordin, Institute for Administrative Advancement, 1025 West Johnson Street, Madison, WI 53706.

ADMINISTRATION LEVEL ARRANGEMENTS

Changing the Graduation Requirements for Students in the Liberal Arts

In the Fall of 1972 the Dean of the College of Literature, Science and The Arts at The University of Michigan formed a Commission on Graduation Requirements composed of 14 faculty members and 5 students. For more than one year, this group reviewed admission policies, degrees, courses, evaluation, student life and teaching--the first systematic assessment of the LS&A curriculum in 30 years. They held open hearings on controversial topics, maintained contact with each department through a faculty liaison, polled the alumni and invited leaders in educational reform to speak at their meetings.

Some 70 proposals (of the 74 recommendations) were passed during the course of a year's debate by the LS&A faculty. The Commission's rationale for proposing curricular changes and new organizational devices was threefold: to help undergraduates play a more active role in shaping their own education, to help them become better informed about the intellectual community of which they are part, and to extend the definition of teaching beyond formal courses.

The report proposed mechanisms for increasing the flexibility of admissions as well as for curricular change and arrangements for the counseling of undergraduate students. Other significant changes were suggested as well:

Collegiate institutes in which small groups of faculty and students explore interdisciplinary problems such as urbanization, the effects of space exploration, or the nature of matter.

Student-designed distribution programs which take into account the individual's major and advanced work already done.

An English Composition Board (composed of faculty aided by teaching fellows) to improve the quality of student writing through individual tutoring or special writing sessions in conjunction with a class, such as geography or sociology.

Increased flexibility in the residency requirement permitting off-campus credit in the last two years of study (provided that at least half the credits required for the degree are earned in residence).

Boards of Study to supervise and grant credit for work-study programs or special examinations taken and passed independent of course work.

Opportunity for students to request transcripts indicating both courses and grades, courses only, or pass/fail evaluations.

For further information on the work of this Commission or for a copy of the revised report, contact Professor Raymond Grew (History), Chairman of the Commission, 4607 Haven Hall or Mr. John Meeker, Assistant to the Dean, LS&A, The University of Michigan, Ann Arbor, MI 48104.

Reorganization of an Instructional Services Agency

Michigan State University recently consolidated several instructional support and broadcasting agencies into a unified administrative division. The basic nature of this reorganization administratively places WKAR Radio and Television which are community-oriented agencies into the instructional services component which directly serves students and faculty. The consolidation is expected to facilitate communication among consultants in instructional design, production and evaluation, thereby maximizing on- and off-campus educational opportunities.

Under the direct supervision of the Provost, the Instructional Development and Telecommunication Services (ID&TS) provides the following instructional services:

1. Learning and Evaluation Service. Advises faculty regarding psychological, technological, or evaluation aspects of learning.
2. Instructional Media Center. Supplies faculty with free audio-visual equipment, delivery service, a film library, tape duplication, and graphics production at cost, as well as marketing University-sponsored materials.
3. Instructional Television. Provides free design, production, and distribution of credit courses for on-campus students.
4. Film and Multi-Media Production. Assists faculty in designing and producing educational, documentary, and public information films.
5. WKAR Radio. Broadcasts educational and service programs.
6. WKAR TV. Broadcasts educational and public service programs, including off-campus courses for credit.
7. Educational Development Program. Sponsors faculty initiated projects and studies which will improve the quality of teaching and learning at Michigan State.

The services of WKAR Radio and Television will expand to include the programming of Instructional Television Services to serve as a vehicle for promoting off-campus broadcasting of credit courses for lifelong education audiences. All professional staff consultants within ID&TS are now consolidated within the Learning and Evaluation Services. Thus, the service is much better prepared to assist faculty using the combined expertise of the entire staff rather than the experience of a few consultants. The close administrative relationship insures communication between consultants and administrators. Consequently, ID&TS will be more aware of University problems with respect to teaching, learning, curriculum and changing enrollment patterns; resources, both human and financial, can be more equitably allocated.

For further information, contact Dr. Robert H. Davis, Director, Instructional Development and Telecommunication Services, 428 Administration Building, Michigan State University, East Lansing, MI 48824.

College of Education Computer Lab

The College of Education Computer Lab at the University of Iowa provides support for faculty interested in developing or using computer programs in undergraduate instruction. The Computer Lab is staffed by a coordinator, a programmer, and a monitor who assist faculty using any of the eight terminals which are serviced by a Hewlett-Packard Interactive 2000 F mini-computer.

Programs in current use come from several sources. A library of programs, many of which are standard statistical and mathematical packages, was provided by Hewlett-Packard. Other programs in the library were written at other installations and translated for use on Hewlett-Packard systems. A large number of programs have been developed locally by faculty and students in the College of Education.

Increased interest in the development of computer programs suggests that faculty members are becoming more aware of the potential of the computer for instruction. Student reaction to these programs is generally very positive.

For additional information, contact Dr. Ray Muston, Associate Dean, College of Education, University of Iowa, Iowa City, IA 52242.

Instructional Media Distribution Center

The School of Education at the University of Wisconsin-Madison operates an Instructional Media Distribution Center which assists faculty in developing audio-visual materials and provides facilities for presenting media sequences. Instructional design personnel, artists, photographers, television production specialists, and electronic technicians serve more than 100 faculty members and produce over 80,000 student contact hours of instruction each semester.

The Center possesses a four-room instructional complex; seating capacity of the rooms ranges from 25 to 300 persons. A central projection area supplies all four rooms with rear screen projection and a stereo sound system. Each room is furnished with remote-control audio-visual equipment which is capable of both single image presentation through 35mm slides and more complex presentations involving multiple image slide projection and 16mm or video projection.

In addition to these presentation areas, the Center houses two microteaching studios equipped with remote-control cameras, an audio production unit, and a television studio which produces color films.

Fourteen years of experimentation with the use of multi-media multi-image instructional presentation has yielded the following information. Students must learn to learn with multi-media multi-image methods, although this learning period is short and generally takes only one or two class periods. The use of instructionally designed media results in more rapid presentation of information with students showing no significant cognitive difference. Students prefer media presentation of materials and, in general, class size increases as media utilization increases. The use of multiple images has been shown to be a powerful instructional tool when contrasting and comparing information. The use of multi-media for large group instruction is cost effective when compared with other methods such as computer assisted or televised instruction.

For further information, contact Dr. Don Didcoct, Director of Instructional Media Distribution Center, School of Education, 1025 West Johnson Street, University of Wisconsin, Madison, WI 53706.

FACULTY DEVELOPMENT

Handbook of Instructional Resources

"Instructional Resources," a handbook distributed to all University of Minnesota faculty members, guides the reader to instructional resources available on the Minneapolis-St. Paul campus. Brief descriptions of services are grouped in general areas to assist the reader who is uncertain or unaware of the particular services of resource units. Under the five categories of Media Services, Library and Information Services, Computer Services, Instructional Support Services, and Equipment Services, the handbook details services provided by a particular unit, notes special conditions (e.g., restrictions on availability of resources, billing procedures), and cites an address, phone number, and name of a person to contact for further information. The index is organized by type of service as well; categories such as audio-visual equipment, computer use, evaluation of instruction, motion picture production, and self-evaluation television taping offer additional assistance to readers.

The 48-page book was researched and published by staff at the Center for Educational Development who identified the need for a guide to instructional resources through extensive work in support of faculty development efforts for the improvement of instruction. Because the CED manages a number of grant programs, it is generally well-known and is often the first organization contacted by a faculty member with an idea. On a large and complex campus, learning where and under what conditions a particular service may be obtained is often difficult. Neither the university's handbook for new faculty nor its telephone directory furnishes all of the necessary information, and in each case one must already know the name of the unit to proceed. As the idea for a handbook developed within the CED, a committee of the University Senate concerned with media services came to similar conclusions and therefore lent its interest and support to the project.

The handbook describes only those services available on the Minneapolis-St. Paul campus, since there is less need for such a guide on the university's four smaller campuses where communication is more direct. However, the book is distributed to faculty on all campuses. "Instructional Resources" was first issued in 1972 and a second edition was published in January, 1975.

For further information, contact James H. Werntz, Jr., Director, Center for Educational Development, 317 Walter Library, University of Minnesota, Minneapolis, MN 55455.

A Faculty Fellow Program in the Center for the Teaching Professions

When the Center for Teaching Professions was established at Northwestern University in 1969 (see Report #6), a Faculty Fellow Program was initiated to support selected faculty members interested in exploring experimental teaching methods in their disciplines. Sums of up to $500 provide faculty with some support and incentive to develop changes in teaching methods. Appointments are renewable each year if commitment to the purposes of the Faculty Fellow Program is evident. The Center currently supports twenty appointments.

During its six year history the program has been involved in many experimental activities. The following list represents the diversity of program activities.

1. A self-paced individualized instruction system on selected topics in obstetrics and gynecology assists medical students.
2. Refinements in an electronic piano laboratory enhance piano instruction in the School of Music.
3. Continuing education programs in dentistry serve teachers of dental auxiliaries in colleges throughout the United States.
4. Research on student evaluations of teaching has resulted in a nationally available evaluation system based on extensive data concerning reliability and validity.
5. A technique of instruction involving the transmission of slow-scan video images over phone lines has resulted in funding from a private foundation for further experimentation.
6. The production of computer-based simulation programs for generating learning curves are incorporated in undergraduate psychology courses.
7. A Seminar on College Teaching in the Department of Chemistry trains teaching assistants in charge of laboratory sections.
8. An innovative program for freshmen engineers (see Report #8) has been evaluated.
9. Self-teaching seminars are conducted for faculty on a wide range of topics in which faculty teach each other about their disciplines through interaction on the topics studied.
10. One book, one monograph, and three articles have been published in national journals about teaching methods and experiences.

For further information, contact B. Claude Mathis, Director, Center for the Teaching Professions, Northwestern University, Evanston, IL 60201.

MEASUREMENT AND EVALUATION

Test Scoring Through Interactive Terminals

The Laboratory for Experimental Design in the Department of Educational Psychology at the University of Wisconsin has developed a system for scoring multiple choice tests on interactive terminals connected to a computer via telephone lines. Using the program, instructors can score an examination, obtain a class roster of test scores and complete an item analysis of the testing instrument within a few minutes.

The DATUM Model 5098, an optical mark reader, scans student response choices from answer sheets fed individually into the optical scanner. Responses are interpreted using a modification of FORTAP, a widely used program for scoring and analyzing achievement examinations. The optical mark reader is connected to a Texas Instruments silent 700 keyboard terminal which permits the instructor to enter parameters into the program and communicate with the remote computer facility.

The speed of program execution is extremely valuable to both faculty and students since considerable time is saved and feedback of information is prompt, detailed and accurate. Because answer sheets must be individually fed into the scanner, relatively small batches of test answer sheets (under 500) are most conveniently handled, although the system can easily process larger batches.

For further information, contact Dr. Frank B. Baker, Laboratory of Experimental Design, Educational Sciences Building, University of Wisconsin, 1025 West Johnson Street, Madison, WI 53706.

GRADER: A Computerized Record Keeping System

The Computer Institute for Social Science Research (CISSR) at Michigan State University has developed a computer program called GRADER which relieves the instructor of large or multi-section courses from the tedious chore of recording student test scores, combining them with lab grades or other ratings and weighting each appropriately. After one year of developmental work, GRADER operates on-line on the CDC 6500 main MSU computer.

The program performs a number of functions tailored to the instructor's needs. GRADER maintains class lists of student scores for individual tests or weighted combinations of scores from several tests using either raw scores or standard scores. From these data, the instructor may then request course records which identify the student, his test scores and percentile rank; the program will perform this function for each section of the course if the instructor wishes. On a more sophisticated level, GRADER will calculate a mean and standard deviation for raw scores or weighted scores, determine frequency distributions and histograms for particular tests or weighted combinations of tests, and assign mid-term and final grades.

In addition to relieving the instructor from a time-consuming task, GRADER offers other advantages as well. The histograms and frequency distributions provide the instructor with tools for analyzing and evaluating test validity. GRADER virtually eliminates the inevitable clerical and arithmetic errors which occur when scores are tabulated manually. Though error may occur when input is keypunched, the program allows the instructor to correct stored information or drop selected tests from the calculation of weighted combinations.

In response to the interest expressed in GRADER, faculty workshops are being held to familiarize instructors and graduate students with the operational procedures of the program.

For further information contact Dr. Leighton Price, Computer Institute for Social Science Research, 508 Computer Center, or Dr. Leroy Olson, Evaluation Services, 200 South Kedzie Hall, Michigan State University, East Lansing, MI 48824.

MEASUREMENT AND EVALUATION

Computer Programs Provide Better Management of Large Enrollment Courses

Courses with large enrollments always challenge their instructors with problems of a very practical nature. In order to practice good course management, the instructor must have current, accurate information on the performance and progress of each student and each section, as well as of the entire class. Course instructors must be able, for example, to identify individual students or sections of students doing unsatisfactory work early enough to take remedial action, to detect significant differences in the grading standards of teaching assistants, to determine which course materials need special attention or review, and to evaluate each student and teaching assistant fairly and equitably.

To promote better management in large courses, computer programs have been developed at Purdue University to provide periodic reports of student performance to students, instructors, and academic advisors. Each teaching assistant receives a deck of mark sense cards for his/her course section, prepunched with section and student numbers. One card is maintained for each student by recording on the card all quiz, laboratory, and exam scores and all excused and unexcused absences. Each week the cards are read into the computer through a mark sense card reader. Options exist for obtaining section and class averages and distributions of numerical scores and letter grades for any single test or for sets of tests. A total score analysis provides additional options for dropping the lowest score in any set of scores, prorating excused absences, and generating summary tables for the course instructor, teaching assistants, academic advisors, and the students themselves.

The computer programs were first used in a large general chemistry course during the spring semester of 1973-1974 and are now being revised and extended to introduce greater flexibility. The revised programs, reorganized to serve any course, will allow the student to obtain a performance report at any time simply by filling out a mark sense card and submitting a job at the card reader. Although much work is still in progress, the present computer programs provide rapid feedback on student performance that otherwise would not be available in courses with large enrollments.

For further information, contact Professor Richard T. Yingling, Department of Chemistry, Purdue University, West Lafayette, IN 47907.

EXTRA-DEPARTMENT PROGRAMS FOR THE INDIVIDUAL STUDENT

A Residential Academic Program The Living Learning Center

The Living Learning Center is a residential academic program housed in a dormitory on the University of Indiana-Bloomington campus. The majority of the 400 program participants are underclassmen chosen by a student selection committee which conducts interviews and reviews application forms to identify students whose desire to participate in the Center's experimental courses is evident.

In an effort to integrate the residential and academic experiences of its members, the Center sponsors an experimental academic program for both freshmen and sophomores. Freshmen participate in seminars offered every semester by the Schools of Business, Music, Education, and Arts and Sciences. Each seminar provides topical introduction to the problems and methodologies of the area. Students are encouraged to explore subjects with which they are unfamiliar to expand their interests and knowledge. While the freshman studies focus on specific disciplines, the sophomore academic program emphasizes the interrelationships among disciplines through series of colloquia taught by teams of instructors from various disciplines.

To reintegrate the learning experience into the community, forums inviting questions from other Center members are regularly scheduled. The best writing and research from the courses are published in a student-edited literary magazine and a research journal.

In addition to participating in the experimental academic program, students manage a peer group tutoring program, sponsor faculty forums and roundtable discussions, and host formal and informal receptions for distinguished visitors to campus. Funding for these activities is authorized by a student programming board which exercises control over the combined student government and LLC administrative activities funds. Students wishing to sponsor receptions, non-credit courses or other activities submit requests to the programming board which then distributes funds based on need.

The project is staffed by a director, a coordinator for residence life, a faculty couple in residence, and ten resident fellows who often teach sections of regular university courses in the Center and handle academic advising and personal counseling.

Evaluations thus far are positive. The occupancy rate for the LLC dormitory is 9% higher since the program began in 1972 and the return rate averages 62% compared to 35-40% in other dorms. Additional evaluation efforts now in progress will assess some of the basic concepts of the LLC program.

For more information or to arrange a visit, contact Dean David G. Burnett, Director, The Living Learning Center, 812/337-9815 or the College of Arts and Sciences, Kirkwood Hall 104, 812/377-1646, University of Indiana, Bloomington, IL 47401.

III. Cumulative Contents

ERIC Full Text Provided by ERIC

I. SUBJECT-MATTER AREA	REPORT	PAGE
ACCOUNTING		
Self-instruction Via Text and Tapes	9	3
AGRICULTURE		
Auto-tutorial Instruction Relates Research and Demonstration	2	3
Experiment in Self-instruction	3	3
In-service Programs for Effective Teaching	10	4
AGRONOMY		
Audio-tutorial Teaching in Soil Science	5	3
Mediated English Counseling in Field Crops Instructional System	6	3
ANATOMY		
Individual Instruction in Microscopic Anatomy	5	3
ANIMAL SCIENCE		
Simultaneous Teaching of Animal Science at Multiple Locations	6	3
ARCHEOLOGY		
INSITE: A Simulation of Archeological Site Excavation	11	3
ARCHITECTURE		
Photogrammetry Offered in Graduate Architecture Program	5	4
Coordinated Design and Drawing Program for Architecture	5	4
Videotapes in Architecture and Sculpture Classes	11	4
ART		
8-mm Self-instructional Films Teach Basic Design Skills	3	3
Experimental Teaching of Studio Humanities Program	3	4
Photography in Drawing-Painting Design	3	4
Electroforming Workshop	10	5
Videotapes in Architecture and Sculpture Classes	11	4
ART HISTORY		
New Seminar Approach to Ancient Art History	7	3
Self-paced Modular Units in Ancient, Medieval, and Asian Art History	8	3
New Approaches to Teaching Art History: A Follow-up	9	4

	REPORT	PAGE
BIOLOGY		
Self-study Stations for Laboratory Instruction	1	3
Unified Curriculum in Biological Sciences	1	3
Self-instructional Mini-courses	8	4
Undergraduate Research Participation	9	5
BOTANY		
Cinemicrotomic Films for Botany Instruction	4	5
Audio-tutorial Instruction Revisited: Mini-course Credits	9	6
BUSINESS ADMINISTRATION		
Special Program in Accounting	3	5
Teaching-learning Seminar for Ph.D. Candidates in Business Administration	5	5
Business Opportunity Program for Inner-city Students	6	8
Audio-tutorial Decision Theory	8	4
Simulating Financial Decision-making Processes	8	5
Practical Experience in Business Administration	9	7
A Real Estate Salesman's Course Via State-wide Television	10	6
CHEMISTRY		
Television in the General Chemistry Laboratory	3	6
Use of TV and VTR in Undergraduate Chemistry Laboratory	4	3
Computer-based Teaching of Organic Chemistry	7	4
Development of a Modular Multipath General Chemistry Program	10	7
Audio-visual Instruction in a Chemistry Laboratory	11	5
The Chemistry of Life: A Series of Short Videotapes	11	6
CHEM TIPS: Individualized Instruction in Teaching Chemistry Courses	11	7
COMMUNICATION		
Using VTR to Test Film Strips	9	8
COMPUTER SCIENCE		
Development of a Self-paced Mastery Instructional System Using a Computer Management and Grading Program	10	8
CONSERVATION		
Integrated Course in Conservation Education	3	7

	REPORT	PAGE
COUNSELLING		
Computer Assist Counseling (COASCON)	6	4
Status Report on the UWM Computerized Guidance Programs	9	8
Interpersonal Communication Training in Residence Halls	10	9
CULTURAL STUDIES		
FOCUS: BLACK AMERICA	5	27
Introduction to Expository Writing	10	3
Research in Latin American Studies Through Case Problems	11	8
AV Modules on the People's Republic of China	11	9
Interdisciplinary Courses and Programs in Middle Eastern Studies	11	10
The Classical Humanities Learning Center	11	11
DENTISTRY		
Single-concept Films Supplement Instruction	2	1
CAI Training Course in Periodontics	5	6
Self-evaluation of Dental Training Through CAI Simulation	7	5
Audiovisual and CAI Programming in Dental Materials and Dental Hygiene	8	6
Individualized Programs of Study in Dentistry	10	10
Teaching Oral Cancer Recognition Through Computers and Slides	10	11
DESIGN		
Independent Study Units for Learning After-Image Color Perception	9	10
ECONOMICS		
Teaching Information Processing System	3	7
New Instrument for Measuring Student Performance in Economics	5	7
Simulation of a World Economy	7	6
Computer Test Scoring and Analysis	8	7
A Training Program for TAs Using Videotapes, a Seminar and a Tape Library	10	12
EDUCATION		
Systems Approach in a Professional Course	1	5
Teaching and Simulated Teaching on Videotape	1	6
Radio-telephone Networks for In-service Instruction	1	6
Instructional Systems in Teacher Education	2	5

	REPORT	PAGE
"Stimulus Films" as a Basis for Teaching Educational Psychology	3	9
Preparation of Pre-service Teacher-education Students in Educational Research and Development	4	5
Elementary School Science-mathematics Teaching Laboratory	4	6
Project MODELS: An Environment for Increasing Learning Efficiency and Conducting Research and Development	4	7
Special Training for Inner-city School Administrators	5	7
Iowa UPSTEP: A New Program in Science Education	7	6
A Self-instruction Lab for the Operation of AV Equipment and Production of Simple Instructional Materials	8	8
A Competency Based Reading Instruction Course	8	9
Improvement of College Instruction in the School of Agriculture	8	9
A Mastery Learning Course	9	11
Project RELATE: Interdisciplinary Instruction in Language Arts Teaching	9	12
Self-instructional Units on Evaluation and Research	9	13
Teacher Training Centers	9	14
Personalized Instruction in Educational Psychology	10	13
Computer Exercise in the Diagnosis and Treatment of Adult Illiteracy	11	12
ENGINEERING		
Mechanical Engineering: Computer Use in Senior Design Program	3	11
Instructional Use of the Computer in Civil Engineering and Hydraulics	3	11
Teaching Keypunch Operation Via Videotape	4	7
Use of ITV for Regional Engineering Programs	5	8
Advanced Professional Program in Engineering	6	5
TV Solves Logistical Problems in Fluid Mechanics Lab	6	6
Individualized Techniques Applied to Freshman Engineering Graphics	7	7
Interdisciplinary Engineering Studies	7	8
Use of Tape Recorders for Grading Engineering Papers	7	8
New Courses Related to Man and His Environment	7	9
Oral Exams and Varied Scheduling	8	10

	REPORT	PAGE
Team Teaching in Short Blocks	8	11
Technology and Society	8	11
Student-paced Learning in a Test-based, Multimedia Laboratory	9	15
The Professional Development Degree	9	16
An Experiment on Integration of Engineering Courses	10	14
A Packaged, Marketed Course in Vacuum Technology	10	15
Developing an Interface Between Engineering and the Social Sciences	10	16
"The Man Series": Interdisciplinary Courses on Technology and Social Problems	10	17
Computer-administered Quizzes in Engineering	11	13
Engineering Counselor-Tutorial Program	11	14
ENGLISH		
Film as Literature	7	9
Reading Skills Laboratory for Freshman Comprehensive English Course	7	10
Full-length Feature-film Adaptations to Stimulate and Improve Reading of Required Texts and Expository Writing	8	12
Poetry and Literary Study: A New Approach and New Materials	8	13
Self-paced Materials for Teaching Rhetoric	10	18
Student Led Discussion Groups in Large Lecture Courses	10	19
Program for Teachers of Freshman Composition	11	15
GEOGRAPHY		
Multimedia Experiment in Regional Geography	5	9
Teaching About the Natural Environment Through the Use of Visual Materials	10	21
Teaching Preparation for Graduate Students in Geography	11	16
GEOLOGY		
Earth Sciences Lab Uses Audio-tutorial Approach	5	10
HISTORY		
The Study of American History Via Discussion Groups	3	12
"The Film as Social History: World War II as Portrayed in the American Film, 1939-1945"	10	22

	REPORT	PAGE
HOME ECONOMICS		
Self-instruction: Textiles, Clothing, and Society	6	7
Development of a Peer Group Mediated Learning Model in Human Sexuality	10	20
JOURNALISM		
Using New Media for Journalism Instruction	1	8
Specialized Writing Program for Journalists	5	11
A Venture in Journalistic Simulation	7	11
LANGUAGE		
Self-instructional Format for Teaching Russian	1	9
Multiple-credit Elementary French Course	1	9
Research on Improved Methods of Measuring Proficiency and Achievement in Foreign Languages	1	10
System for Teaching German in Field Trial	2	8
New Approaches to the Teaching of Chinese	4	9
A New Course in Russian Civilization	7	12
A New German Grammar	8	16
Hebrew Language Study With a Programmed Text and Tape	8	17
CAI in Latin	9	17
Evaluation of Self-paced Instructional System for First-year Course in German	9	18
CAI in Beginning Ancient Greek	10	23
LAW		
Audio-visual Teaching Aids in Law	5	11
Clinical Training in Law	8	18
Computer Exercises for Law Students	10	24
Videotape Review of Teaching Techniques in Law Courses	11	17
LIBRARY SCIENCE		
Realism in Teaching Reference Work	8	19
Self-instruction on Library Procedures	10	25
MATHEMATICS		
Support from Main Campus to Branch College	2	8
Mathematics Laboratory Project for Elementary Teachers	4	11
Computer Instruction in Mathematics	7	12
Individualized Instruction in Mathematics	7	13
Individualized Supplementary Calculus Instruction (ISCI)	10	26

	REPORT	PAGE
MEDICINE		
Computer Simulations for Instruction and Evaluation	2	9
"Auto-didactic" Laboratory	5	13
New Programs in Medical Communications, Circulation Technology	6	9
MD Training Span Reduced, Patient Care Increased	6	10
Computer-assisted Independent Study in a Pilot Medical School	7	14
Intercalated-Year Program in Medicine	7	15
Self-Instruction in Pathology	7	15
Integrated Premedical-medical Program	8	19
A Medical Campus the Size of Indiana	10	27
Instructional Research and Development in Pediatric-cardiology	10	28
Learning Resource Development Center, College of Medicine	10	29
Simulation Technique in the Teaching and Testing of Problem-solving Skills	10	30
Systematic Inquiry and the Education of Health Sciences Faculty	10	31
Workshop for Authors of Written Simulations in Medical Diagnosis and Patient Management	10	32
Medical Education Resources Program	11	18
Workshop for Developing Self-instructional Materials	11	19
MICROBIOLOGY		
"Microbiology--What is it?": A Slide and Film Presentation	9	20
MUSIC		
Programmed Unit Added to Theory Sequence	2	10
An Integrative Teaching Model in Music Education	7	16
CAI for Music Theory	8	20
An Electronic Piano Laboratory for Piano Pedagogy	8	21
NATURAL RESOURCES		
Computer Simulation of Fish Populations	3	13
NURSING		
Video Tapes for Teaching Administration of Medications	1	12
Instructional Units in Posology, Vitamins, and Immunology	1	13

	REPORT	PAGE
Multimedia Project in Nursing	4	11
Multimedia Learning System in Nursing	6	10
Curricular Flexibility in Nursing Education	8	22
Independent Study and Multimedia Programmed Learning in Nursing	10	33
Learning Resources Center for Nursing	11	20
PHARMACY		
CCTV Used for Continuing Pharmacy Education	5	13
Continuing Education in Pharmacy Via Tele-communications Network	5	14
Cassette Tapes for an Extension Course	8	22
Teaching Through a Combination of Videotape, Computer and Printed Copy	10	34
Audiotutorial Instruction in Medical Pharmacology	11	21
PHILOSOPHY		
Graduate Student Teaching Internship Program in Philosophy	7	17
Evaluation of Academic Progress Through Weekly Cumulative Tests	10	35
The Development of a Computer Assisted Course in Introductory Logic	11	22
PHYSICAL EDUCATION		
Integrated Audiovisual Presentations and Workbooks in the Teaching of Physical Education	10	36
PHYSICAL THERAPY		
Media-based Instructional Variations	9	21
PHYSICS		
Computer Use in Physics Instruction	3	15
PHYSIOLOGY		
Programmed Preparation in Laboratory	2	11
POLICE SCIENCE		
Educational Programs for Law Enforcement Agencies	5	16
Hospital-based Ambulance Service	5	17
POLITICAL SCIENCE		
Simulation Laboratory for Inter-nation Decision Making	1	14
Advanced Research and Analysis Seminar on Selected Topics	2	12

	REPORT	PAGE
Evaluation of Televised Course in American Government	2	13
Using Multimedia in a Large Enrollment Course	8	23
Field Participation in Campaign Politics	9	22
Small-group Teaching of Social Science Research Methods	9	25
PSYCHOLOGY		
"Psychology of College Teaching": New Course at Purdue	1	15
Experimental Course Laboratory in a Mental Hospital	3	16
A Seminar in the Teaching of Psychology	4	13
Cafeteria of Learning for Introductory Psychology	7	18
Observing Interpersonal Behavior Via Videotape Recording	7	19
Teaching Students Sensitivity to Children	7	19
Computer Simulations for Teaching Research Design in Elementary Experimental Psychology	8	24
Videotapes Combined With Discussions	8	24
A Test Item Pool Designed to Stimulate and Measure Creative Thinking in Psychology	8	25
A Seminar on Teaching	9	24
Sliding Point, Contract Teaching in Psychology	9	25
Student-generated Multimedia Instructional Units	9	26
Undergraduate Participation in Setting Objectives and Evaluating Products	9	27
A Contingency-managed and Individualized Course in Behavior Modification	11	23
The Use of Color Film in a Large Introductory Psychology Course	11	24
Project OUTREACH: Psychology Students in the Community	11	25
PSI in a Child Psychology Course	11	26
Mini-courses in an Introductory Psychology Lecture Course	11	27
SOCIAL WORK		
Self-instructional Program to Teach Interviewing Skills	1	17
Interviewing Techniques Evaluated Via Videotape	5	17
Self-instructional Slide/Tape Presentations to Introduce Social Work Students to Community Services	8	26

	REPORT	PAGE
SOCIOLOGY		
Educational Games in Social Psychology	2	15
SIMSEARCH (Research Simulations)	10	32
Study of Criminology Through a European Tour	11	28
The Use of Literature in Teaching Introductory Sociology	11	29
SPEECH		
Videotape and Social Action in Discussion	3	16
STATISTICS		
Auto-tutorial Teaching in Social Science Statistics	9	28
TELEVISION/RADIO		
Revising Broadcasting Course Through Task Analysis	6	15
ZOOLOGY		
A Microfiche System for a Self-instructional Laboratory in Zoology	11	30
II. INSTITUTIONAL SUPPORT		
ADMINISTRATION LEVEL ARRANGEMENTS		
Experimental College at Michigan State	1	21
Coordination of Learning, Media, and Evaluation Services	1	21
Support for Departmental Self-study	1	22
University-wide Curriculum Revision	1	21
Center for Research on Learning and Teaching	4	19
"Credit by Exam" Offered in Experimental Program	1	20
New Careers and New Dimensions Programs	6	18
A Center for the Teaching Professions	6	20
Centralized Learning and Information Office	7	23
Educational Development Fund: A Fund for Improving Instruction and Educational Programs at Minnesota	7	25
Undergraduate Education Curriculum Development	7	25
University of Wisconsin Undergraduate Teaching Improvement Fund	8	29
University College: A College for Experimental Degree Programs	8	30
Curriculum and Faculty Liaison Between the University and High Schools	10	31
Institute for Administrative Advancement	11	33

	REPORT	PAGE
Changing the Graduation Requirements for Students in the Liberal Arts	11	34
Reorganization of an Instructional Services Agency	11	35
AUTOMATION AND TECHNOLOGY		
Dial-access Learning System	2	19
TV Network Links Two Universities and Extension Campuses	2	21
Systems Approach for Extension Campus	2	22
Off-campus Graduate Center Gets TV Links	2	23
Computer-based Education Research Laboratory	3	21
Videotape Recordings of Classroom Lectures as Device to Critique Conventional Teaching Performance	3	21
Dial-access Video and Audio Learning System	4	22
Educational Telephone Network as a Vehicle for College Instruction	4	23
Instructional Media Laboratory	4	21
Modular Film Design for Media Study and Teacher Education	4	25
Library With an Electronic Dimension	5	23
Multimedia Instruction in Extension	5	21
On-line Computer System for Instruction	5	23
A Programmed Course in Programming	5	29
Rural Adult Education Program		26
Open University by Radio	9	31
CATV as an Educational Resource	10	42
Development of the Educational Uses of Slow-Scan Televideo	10	43
Off-campus Electronic Media Programming for Engineering, Architecture, Mathematics and Applied Science	10	11
Project MU-CAI (Computer Aids to Teaching)	10	15
College of Education Computer Lab	11	36
Instructional Media Distribution Center	11	37
FACULTY DEVELOPMENT		
Seminar for Professors to Consider Science-Values Issue	2	23
Faculty Awards for Improvement of Undergraduate Instruction	3	21
Training Prospective College Teachers	3	27
Summer Grants to Improve Instruction	1	22
Instructional Development Project	1	27
System Training Program for Graduate Teaching Assistants	5	29
Seminar on College Teaching		29

	REPORT	PAGE
Residence Hall Training Program	8	33
Skills for the Beginning Teacher	9	32
A "Cafeteria" Program for Teacher Evaluation	10	46
Handbook of Instructional Resources	11	38
A Faculty Fellow Program in the Center for the Teaching Professions	11	39
INTERDISCIPLINARY PROGRAMS AND COURSES		
Behavioral Sciences Lab is "Active Learning" Center	2	24
Arts and Sciences Course Taught in Foreign Languages	3	25
Honors Humanities Core for Freshmen	3	26
Institutes Action Study Program	4	27
Interdisciplinary Course in Freshman Perspectives	6	21
The Social Science Program at Minnesota	6	22
The Project Community at The University of Michigan	7	27
Course Mart	8	31
An Interdisciplinary Course on Planning a Livable Future	10	47
Women's Studies	10	48
MEASUREMENT AND EVALUATION		
Development and Research on the Course Evaluation Questionnaire	1	25
Research and Development of Improved Way for Testing Placement and Proficiency of New and Continuing Students	2	25
New Instructional Rating Report	2	26
Pass-fail Grading Experiment	4	21
Faculty Seminar/Workshop for Instructional Development and Evaluation	5	27
Instructor Rating Scales	5	28
Student Instructional Rating System	6	25
Computer Generated Repeatable Testing for Large University Classes	8	32
Test Scoring Through Interactive Terminals	11	40
GRADER: A Computerized Record Keeping System	11	41
Computer Programs Provide Better Management of Large Enrollment Courses	11	42
EXTRA-DEPARTMENT PROGRAMS FOR THE INDIVIDUAL STUDENT		
Residential College for Community Studies	9	33
Human Potential: A Residential Seminar on Personal Development	9	34

	REPORT	PAGE
Individual Plans of Study for the B.A. or B.S. Degree	9	35
Man, Science and Society: An "Open Seminar"	9	36
Problem-focused Instruction and Student-initiated Learning	9	37
Student Involvement in Pilot Program	9	38
The Bachelor of General Studies Degree After Four Years	9	38
The Role of Students in the Residential College	9	39
Variable Credit Tutorial Course for Freshmen	9	40
A Residential Academic Program: The Living Learning Center	11	43

The following items are deleted from the Cumulative Index. They reference projects which, for one reason or another, are no longer active.

I. SUBJECT-MATTER AREA	REPORT	PAGE
BIOCHEMISTRY		
Developing the Knowledge Domain for Teaching Metabolism	-	5
BUSINESS ADMINISTRATION		
Three-faceted Approach for Teaching Accounting	2	5
Marketing and Political Action	8	6
DAIRY SCIENCE		
Non-pasteurized Learning	9	9
ECONOMICS		
Application of Principles of Programmed Instruction to a Televised Course	1	1
EDUCATION		
In-service Instruction Via "Tele-lecture"	1	6
Tutorial and Clinical Program in Teacher Education	3	9
Internship for College Teachers of Education	1	4
ENGINEERING		
Programmed Instruction in Pre-engineering Graphics	1	-
Multimedia Classroom for Faculty-to-be	2	7
Educational Films for Electrical Engineering	5	8
Computer Graphics in Electrical Engineering	6	6
ENGLISH		
Individualized Instruction in Composition	1	8
Measurement and Evaluation of English Proficiency	1	8
Evaluation of Written Composition	2	-
HISTORY		
Discussion Groups in Large Intermediate-level History Courses	8	14
Development of Options in a History Course	8	15
LANGUAGE		
Instructional Materials for German and French	1	10

ERIC

	REPORT	PAGE
LAW		
Students Work with City and State Officials in Two Law Seminars	5	12
LIBRARY SCIENCE		
Video Tape and Film Use in Library Orientation	1	11
Teaching an Extension Course Via Tele-lecture	4	10
MATHEMATICS		
Teaching Algebra with Programmed Materials	1	12
Programming Beginning Algebra	3	13
Drill and Practice Individualization by CAI for Algebra	9	19
MEDICINE		
Continuing Education for Physicians	3	14
MUSIC		
Use of Radio in Music History Course	5	12
PHILOSOPHY		
Philosopher Seminar Program	5	15
PHYSICS		
A Graduate Seminar in Physics Teaching	4	12
Evaluating Student Learning in Simulated Physics Lab Problem	5	15
PSYCHOLOGY		
Computer Assisted Instruction	1	15
Introductory Psychology: Lectures on Film	2	14
Project OUTREACH	2	14
Using TV to Instigate Class Discussion	4	14
Introductory Psychology for Inner City Blacks	6	12
SOCIOLOGY		
A Developing Sequence of Integrated Statistics and Methods	4	15
SPEECH		
Peer Group Ratings, Televised Lectures, Facilitate Handling of Increased Enrollment	2	16
Computerized Evaluation and Simulation of Group Discussion Processes	4	15
Evaluation of Learning in Introductory Speech	5	18
Video-taped Informative Speech Models	5	19

II. INSTITUTIONAL SUPPORT	REPORT	PAGE
ADMINISTRATION LEVEL ARRANGEMENTS		
The Pilot Project	2	19
College Within a College	4	19
Center for Curriculum Studies	4	26
Special Educational Opportunities Program	5	23
Bachelor of General Studies Degree	6	17
Special Programs for the Disadvantaged	6	18
University of Illinois' Commission for the Reform of Undergraduate Education and Living	7	26
AUTOMATION AND TECHNOLOGY		
Library of Non-print Instructional Materials	1	23
CAI Introduced at Purdue	2	20
Decentralized Instructional Television	3	22
Minnesota Television Feasibility Study	3	23
FACULTY DEVELOPMENT		
Plan to Maintain Teaching Standards	1	24
Broad-scale Study of TA Role	2	27
INTERDISCIPLINARY PROGRAMS AND COURSES		
Field Study in the City	5	26
Interdisciplinary Approach to Urban Problems	6	21
MEASUREMENT AND EVALUATION		
Freshman Placement and Proficiency System	6	24
Course and Instructor Evaluation	7	28
EXTRA-DEPARTMENT PROGRAMS FOR THE INDIVIDUAL STUDENT		
Pilot Program at The University of Michigan	7	24