DOCUMENT RESUME

ED 148 272 \ HE 009 546

AUTHOR   Peterson, Gary W.
TITLE   Curriculum of Attainments. Final Report.
INSTITUTION   Florida State Univ., Tallahassee. Center for
                Educational Design.
SPONS AGENCY   Fund for the Improvement of Postsecondary Education
                (DHEW), Washington, D.C.
PUB DATE   31 Aug 76
GRANT   G007408679
NOTE   218p.
AVAILABLE FROM Center for Educational Design, The Florida State
                University, Tallahassee, Florida 32306

EDRS PRICE   MF-$0.83 HC-$11.37 Plus-Postage.
DESCRIPTORS   Cost Effectiveness; *Curriculum Development;
                Educational Innovation; Educational Technology;
                *Experimental Programs; *Flexible Scheduling; Higher
                Education; Institutional Research; Manpower
                Utilization; *Open Education; *Performance Based
                Education; Program Descriptions; Program Evaluation;
                Research Projects; *State Universities
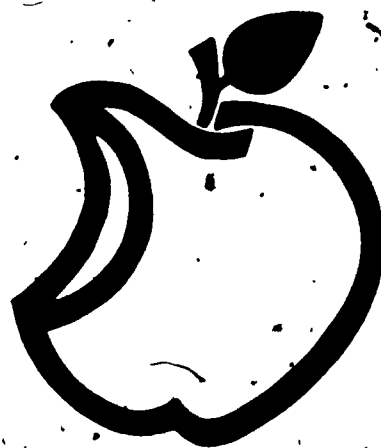IDENTIFIERS   Career Preparation; Educational Outcomes

ABSTRACT
                The final report describes a project at the Florida
State University at the end of its third year and an assessment of
the degree to which project goals were attained. The project goals
were to: (1) establish mastery standards for degree programs; (2)
create open, time-variable educational programs; (3) verify that the
program product can serve as a paradigm for the cost-effective use of
educational personnel and technology; (4) demonstrate and investigate
the characteristics of the Curriculum of Attainments learning
environment; (5) establish a more direct relationship between the
curriculum and the world of work; and (6) demonstrate a strategy for
curriculum reform in mass higher education. The attainment of each
goal is analyzed. It was found that some goals were achieved at a
level high above the minimum level of expectation for the project,
while others remain incomplete. General student outcomes are also
reported, as are the author's comments and conclusions about the
project and its implications for transfer to other institutions.
(Author/MSE)

Curriculum Of Attainments

Final Report
August 31, 1976

The Florida State University

2

Final Report
August 31, 1976

Curriculum Of Attainments

Gary W. Peterson
Project Director 1973-76

Instructional
Systems
Development
Center

ISD.

Center for Educational Design
The Florida State University
Tallahassee, FL 32306

ACKNOWLEDGEMENTS

A conservative estimate is that at least 100 faculty members and 250 students have thus far participated in the COA project from its inception to the present. It is impossible to give sufficient credit to all those who patiently and assiduously participated in the many project activities such as conceptualization, design, planning, production and review of materials, implementation, negotiation, and evaluation that are required to conduct a good pedagogical experiment that is more than cosmetic. The following credits are by no means presented in order of importance or in order of magnitude of contribution. My only apology is that I may have not included all who contributed in a significant and meaningful way to the conduct of the project. Credits are heretofore extended to

John Harris, formerly Director of the Division of Instructional Research and Services and now staff member of the Tennessee Higher Education Commission, who formulated the basic concepts of attainment-based education and introduced it to FSU. He identified the roles of mentor and jury as essential to the conduct of this method of pedagogy.

Daisy Flory, now Dean of Faculties, for assisting John Harris in introducing and in promoting the experiment before the Faculty Senate Steering Committee. She also stood by the experiment through the difficult stages of conceptualization and implementation and assisted in addressing the myriad of policy issues raised by implementing attainment-based education in the midst of a conventional time-bound, course-bound educational system.

The mentors, Al Collier (Biology); Pauline Haynes and Anne Belcher (Nursing); Ed McClure, Richard Rubino, and Robert Mitchell (Urban and Regional Planning); Wes Collins (Music); Charles Swain (Religion); Art Dorlag and Donald Stowell (Theatre); and Hal Korn (Psychology) for their unfailing and exhaustive efforts in designing and implementing a COA program in their respective disciplines. They all took on

"overloads" to design and to produce the learning materials required to test the concept of attainment-based instruction. They endured the criticism, and in many cases, isolation and neglect from their collegues. To most, it was a "labor of love" for which they received neither monetary nor promotional rewards for their efforts. They were driven only by their desires to become better instructors and to offer students in a large public university an educational experience that is of higher quality than existing modes of instruction. They were all in search of a "better way."

Joe Grosslight and members of the Project Committee for supporting and defending the project before the faculty at large. They gave the project both credibility and legitimacy as a worthwhile experimental effort. They stood for the maintenance of academic standards and will remain as members of the Project Committee for the duration of the experimental phase of the project until the COA is formally presented for approval before the Faculty Senate in 18 months. The Project Committee is composed of Dr. Joe Grosslight, chairman of the committee and chairman of the Department of Psychology; Odell Waldby, Government; Ed Mellon, Chemistry; Augustus Turnbull, chairman of the Department of Government; and Wiley Housewright, Dean of the School of Music.

· Faculty consultants from the Center for Educational Design, who included John Merrill, Director, Robert Stakenas, Al Oosterhof, and Nelson Towle all helped individual programs in the design of instructional materials and in the assessment procedures required for attainment-based education.

Members of the registrars office, Steven Mausert (now registrar at the University of South Florida); Jacqueline Long, Harriet Byquist, Mary Hattie Taite for helping design and manage the registration and record keeping for the COA programs. Without their cooperation, the time-variable aspect of the COA could not have been implemented.

labored many hours in the typing and revisions of this document.

Finally, a special note of gratitude is extended to Professor David Riesman of Harvard University for selecting the COA project at FSU as his case study for a nation-wide project supported by the Fund for the Improvement of Postsecondary Education, to study the development and feasibility of competency-based education, Gerald Grant of Syracuse University, project director. Professor Riesman's astute and sensitive observations added a magnificent dimension of reality to the COA project which extended its thrust beyond merely an attempt to implement competency-based educational programs in a large public university to a more comprehensive study of innovation in postsecondary education.

Gary W. Peterson
Project Director

TABLE OF CONTENTS

Appendices Continued

LIST OF TABLES

CHAPTER I

Introduction and Methodology of Investigation

INTRODUCTION

The Curriculum of Attainments Project, conducted under the auspices of the Center for Educational Design, Florida State University, has culminated the third year of a three year project funded by the Fund for the Improvement of Postsecondary Education. The Final Report represents a description of the project and an assessment of the degree to which the project goals were attained. The project goals stated in final form are to:

1. Establish mastery standards for degree programs

2. Create open, time-variable educational programs

3. Verify that the COA can serve as a paradigm for the cost-effective use of educational personnel and technology

4. Demonstrate and investigate the characteristics of the Curriculum of Attainments learning environment

5. Establish a more direct relationship between the curriculum and the world of work

6. Demonstrate a strategy for curriculum reform in mass higher education

The Final Report presents an analysis of the attainment of each goal. The reader will find that some of the goals were achieved at a proficiency level well above the minimum level of expectation for the project, while other goals remain incomplete and require further self-assessment and/practice before the standard is achieved. Following the analysis of the attainment of goals, general student outcomes are reported, followed by the author's comments and conclusions regarding the project and the implications of attainment-based instruction for dissemination and transfer to other institutions.

Methodology of Investigation

Observations: When taken, circumstances, limitations and caveats.

Data collection for the summative evaluation of the COA Project goals consisted of both formal and informal observations. Formal observations were drawn from the following sources over the course of the year (AY 1976):

1. Manpower Utilization survey

2. Biographical Information survey

3. Transaction - Interaction survey

4. Use of Resources survey

5. General Outcomes survey

6. Student Academic records

7. Departmental records

The Manpower Utilization Survey was administered to COA mentors at the conclusion of each quarter. Mentors, tutors, and jury members were requested to inidcate the percentage of time spent performing various COA activities and the people with whom these activities were performed. To some extent, the responses may reflect inaccurate recall since the data was not collected until the conclusion of each quarter. In addition, the study is subject to the common criticisms of self-report data.

A Biographical Information Survey was administered to the students in the COA programs. The survey asked questions concerning education and work experience background, age, sex, marital status, and ethnic group. In addition, students were asked to list any employment they held while attending school as COA students. The survey was conducted in the Winter quarter.

In order to describe the interpersonal aspects of the learning environment, a Transaction - Interaction Survey was developed and administered during Spring quarter. The survey addressed peer learning, mentor roles, tutor-student and juror-student relationships. Survey items asked students to indicate frequency and

effectiveness of different kinds of transactions with mentor, tutors, jurors, and other students.

The <u>Use of Resources Survey</u> asked students to estimate the number of hours per month spent in using such resources as learning packages, University library, COA study rooms, etc. It was administered in the Spring quarter.

The <u>General Outcomes Survey</u> asked students to evaluate the effectiveness of COA in accomplishing many of its objectives, such as development of self-confidence, discipline in establishing one's own "production schedule," establishing collegial relationships with professionals. The General Outcomes Survey was administered during the Spring quarter.

Data were also collected systematically from student academic records and departmental records to provide an indication of academic progress in the Stage I COA programs. Data concerning the number of credit hours enrolled and completed were obtained from academic records and data regarding FTE faculty input were taken from departmental and University records. These data were collected for the most part, during the Summer of 1976.

Informal observations were made by project staff members throughout the year during their contact with COA personnel in the three program areas. Frequent meetings were held to facilitate communication and to organize evaluation activities. The informal observations were discussed periodically among project staff members, especially in relation to the corroboration that was given by the formal data that was collected. Although the informal observations are subject to obvious biases inherent in the unsystematic collection method and limited vision of project per-sonnel, these observations provided considerable direction in developing hypotheses concerning program operation.

In the following sections, both informal and formal observations have been combined in reporting the progress the COA project has made toward the attainment of the established goals. Attainment relative to each goal is discussed separately in order to facilitate comprehension by the reader.

CHAPTER II.

An Historical Outline
of the Curriculum of Attainments
1972-1976

Included below are some of the important milestones in the inception and development of the COA project. Professor David Riesman has documented a more comprehensive and detailed version of the "FSU story" through research associated with Dr. Gerald Grant of Syracuse University's "Competency-based Education Project", another project funded by FIPSE. This report may be obtained by writing either Professor Riesman at Harvard University or Dr. Gerald Grant of the Educational Policy Research Center, Syracuse, New York.

Early events preceding the conceptualization of the COA began in February of 1972, when Florida Senate Bill 455 was introduced by Jerry Thomas, which required the Division of Universities to "revise the requirements for the granting of baccalaureate degrees and to grant degrees after three years academic work, unless there are accreditation conflicts." The bill was unanimously passed by the Senate, but was defeated in the House. Later in the spring, Commissioner of Education Floyd Christian appointed a Task Force "...to explore the feasibility of a baccalaureate degree program which can be completed in three academic years."

In the fall of 1972, Dr. Daisy Flory, Acting Vice President of Academic Affairs, received a directive from Board of Regents Chancellor Robert Mautz that each university in the State University System submit a proposal to implement programs which may shorten the time normally required to obtain the baccalaureate. Subsequently, Dr. Flory called a committee to develop models for a time-shortened baccalaureate degree program. Models explored were CLEP, early admission, departmental examinations, and the Curriculum of Attainments. Dr. Flory received a memo shortly afterward from Chancellor Mautz encouraging models for new degree programs emphasizing competency-based instruction. On December 15, a proposal,

Curriculum of Attainments: An Alternative to Time-Based Degree Programs, was written and submitted by Dr. Daisy Flory and Dr. John Harris, Director of the Division of Instructional Research and Service, to the Board of Regents of the State University System which strongly advocated that time was irrelevant to the awarding of degrees. Dr. Harris brought the notion of awarding degrees on the basis of attainment rather than exposure with him from his previous employment at the University of Georgia.

In the winter of 1973, the Commissioner's Task Force on Time-Shortened Degrees recommended the adoption of the College Level Examination Program (CLEP), advanced placement programs, year round matriculation, dual enrollment in high school and college, early admission, and self-paced learning with demonstrated proficiencies. It did not recommend the adoption of nine-quarter degrees.

A proposal for full funding for planning and implementation was submitted to the Fund for the Improvement of Postsecondary Education (FIPSE). Prior to its submission, Dr. Charles Wellborn, on behalf of the Faculty Senate Steering Committee, authorized support for the COA experimental program. This proposal was a more operational and comprehensive version of the Flory-Harris proposal sent to the Board of Regents. On July 1, 1973, the Planning Project for the Curriculum of Attainments was awarded to Florida State University by FIPSE in the amount of $49,386.

During the late summer and early fall of 1973, a comprehensive survey was conducted of all sixty departments and upper division bachelors and masters level degree programs at Florida State University. On September 30, the COA Project Committee, chaired by Dr. Joe Grosslight of the Psychology Department, selected nine programs for intensive exploration. The programs were Biology, Nursing, Urban and Regional Planning, Mathematics, Geography, Speech Pathology, Library Science, Psychology and Music. Later during the fall quarter faculty members from the nine selected programs were interviewed regarding interest and feasibility

for implementing Curriculum of Attainments programs. On November 30, B.S. programs in Biology and Nursing and a M.A. program in Urban and Regional Planning were selected for planning Curriculum of Attainments programs. In December, the Florida Legislature authorized the appointment of a Standing Committee on Time-Variable Education to explore competency-based instruction (under the Department of Education).

July 1, 1974, funds in the amount of $98,861 were received from FIPSE for the "Implementation of the Curriculum of Attainments" with programs in Marine Biology, Nursing, and Urban and Regional Planning, and to design programs in Music Education, Religion, Theatre, Psychology, Business and Library Science. In the fall quarter of 1974, COA programs in Nursing, Marine Biology, and Urban and Regional Planning were implemented with fifteen students in Nursing, Pauline Haynes, mentor; seventeen students in Marine Biology, Al Collier, mentor; and sixteen students in Urban and Regional Planning, Ed McClure, Richard Rubino and Robert Mitchell, mentors. During the winter of 1975, stage II programs in Music Education, Theatre, Psychology, Religion, Library Science, and Recreation and Leisure Studies began planning COA programs for implementation in the fall of 1975.

On July 1, 1975, funds were awarded from FIPSE ($62,500) for the direct assessment of competence and dissemination of the Curriculum of Attainments. On August 15, the COA was proposed to the State of Florida Articulation Coordinating Committee as a method of articulating between lower division and upper division programs.

Stage II programs in Music Education, Theatre history and costuming, Religion, and Psychology began implementing COA programs in the fall, 1975, with Wes Collins in Music Education, Art Dorlag and Don Stowell in Theatre, Charles Swain in Religion, and Hal Körn in Psychology as mentors. Vocational Technical Education began planning a COA program for implementation in the fall of 1976. Recreation

and Leisure Studies continued to plan and pilot-test learning materials during
the 1975-76 academic year.

On January 10-14, 1976, FSU was host to a conference of the Competency-Based
Education Project, Dr. Gerry Grant of Syracuse University, project director.
Professor David Riesman of Harvard University was in charge of the FSU case study.
The conference was funded by FIPSE.

External funding for the Curriculum of Attainments Project was terminated
on June 30, 1976.

Description of the Curriculum of Attainments:
A Complete Model for Competency-based Education

The principal concept of the Curriculum of Attainments is that degrees
are awarded solely on the basis of knowledge or skills (i.e., attainments)
demonstrated before faculty juries without regard to the location or the amount
of time it takes a student to master them. When fully operational, the COA is
a completely time-variable, location-free curriculum which allows for continuous
progress toward degrees.

There are now nine programs in various stages of development at Florida
State University ranging from the planning phase to full operation. The first
three programs were junior and senior year programs in Marine Biology and Nursing
and a masters degree program in Urban and Regional Planning. Other programs
currently in development and field testing include Music, Psychology, Religion,
Theatre, Recreation and Leisure Studies, and Vocational Education. In the spring
of 1976, baccalaureate and masters degrees were awarded to students who partici-
pated in the first three programs.

A fully implemented COA program included five basic components:

1. A set of generic and specific attainments required for the degree or certificate.
An attainment consists of three elements--a behaviorally stated knowledge or
skill, assessment tasks, and standards of performance. There are two levels of
attainment used to structure a program--a general level and a specific level.
The general level (generic attainments) indicates broad-based areas of knowledge
or skill. Generic attainments may number anywhere from 4 (as in the Music Educa-
tion program) to 27 (as in the Urban and Regional Planning program).

Specific attainments are the sub-skills or knowledge which form the building
blocks of generic attainments. Typically, the number of generic attainments

describing the learning outcomes for the program varies from 6 to 12. The
number of specific attainments for each generic attainment often ranges from
5 to 25. Specific attainments serve as developmental tasks to the mastery of
a generic attainment.

Here are some examples of the relationship between a generic attainment and
a specific attainment.

Biology

Generic attainment: knows and applies basic principles of
descriptive oceanography.

Specific attainment: defines tide wave types--semi-diurnal,
diurnal, and mixed.

Nursing

Generic attainment: recognizes abnormal patterns of behavior,
communication, or adaption and initiates
appropriate action.

Specific attainment: identifies barriers to interpersonal
communication, e.g., lack of attention,
non sequitur responses, lack of feeling
responses, overly aggressive or hostile
responses, moralizing or judgmental
responses, etc.

Vocational Education

Generic attainment: applies the principles and techniques
of teaching which help students apply
what they have learned.

Specific attainment: directs shop/laboratory learning
experiences.

2. <u>A jury to certify the achievement of generic attainment.</u> Each jury in the
COA consists of a minimum of two faculty members and an outside practicing
professional. The jury convenes to assess student achievement of generic level
attainments. In this way it examines a student's capacity to integrate broad

areas of knowledge or skills. This kind of evaluation requires nontraditional assessment techniques such as oral exams, portfolios, videotaped performances, live demonstrations, and anecdotal records.

The jury primarily evaluates student behavior in higher-order cognitive skill areas or in complex problem-solving situations. Higher-order cognitive skills include such skills as analysis and synthesis, while an example of a complex problem-solving situation might be the administering of a patient-care program. The evaluation of lower-level cognitive skills and routine psychomotor skills can be accomplished with objective tests or through faculty or supervisor observation. Attainment of these lower-level skills can also be inferred from the demonstration of complex behaviors in a jury examination. The use of juries is one of the most important characteristics of the COA since it allows the separation of instruction from certification of attainment.

3. <u>Mentor to guide students in the mastery of attainments.</u> The mentor advises students on the acquisition and use of learning resources in order to help them reach mastery. Since the objectives of an educational program are clearly defined, the student, in consultation with the mentor, may use any number of available resources to achieve the intended outcomes. The mentor also designs instructional materials which enable students to acquire knowledge and skills.

An important point to be mentioned about the mentor role is that the mentor "teaches" as little as possible. The mentor is not viewed as a guru or the sole fountain of knowledge and wisdom. The mentor's primary role is to help a student integrate knowledge and skills gained from a variety of educational resources. The mentor also assesses student progress toward attainment and schedules jury examination when students are ready to demonstrate mastery of an attainment. Although the mentor may be present during the jury assessment, the mentor does not participate as a voting member of the jury.

One privilege accorded to a mentor is the opportunity to know a student over a long period of time and over a large portion of the curriculum. Mentors are able to observe students develop intellectually and mature personally--an element often missing in piecemeal, assembly-line approaches to mass education.

4. Individualized learning resources. The learning package is the unit of instruction in the COA, as opposed to a course. Each learning package (or module) is assigned a title and a specified number of credit hours. The module contains a set of specific attainments; pre- and posttest; learning materials such as print materials, slidetapes, and videotapes; study guides; handbooks; a bibliography; practice exercises; and other materials that may help students master the specific attainments.

Specific attainments included in a learning package are a cluster of related attainments leading to a generic attainment. A 90-quarter-hour COA program may contain 30 learning packages, averaging 3 credit hours per package, that cover 10 generic attainments and 120 specific attainments.

Learning packages are designed to be as self-instructional as possible. The more self-instructional a package becomes, the more flexible a program is in terms of allowing students to learn away from the classroom. This is not to say that COA results in depersonalization. In fact, the opposite is true. The mentor meets with individual students frequently and with groups of students in seminars once or twice per week to discuss issues related to the field or discipline. Guest speakers are often brought in to give presentations and demonstrations. In seminars, students also have the opportunity to discuss any difficulties they have encountered in mastering the specific attainments learning packages.

In addition, students participate in tutorials and workshops. These workshops may be conducted in the evening or on weekends to accommodate the needs of

nonresidential students. [They are also encouraged to consult faculty or lay tutors who are specialists when they need special assistance.] Students also use internships and field experiences as methods of mastering attainments.

5. An administrative support system. A special attainment-based transcript contains information unique to a CBE system. The transcript lists generic attainments mastered, dates of registration and completion of learning packages, the dates when attainments were demonstrated before juries with signatures of jury members, and types of assessments used. An open registration procedure allows students continuous progress toward the fulfillment of degree requirements. A retroactive grading procedure enables juries to assign grades to learning packages based upon the student's performance in the terminal jury assessments. At the undergraduate level, a grade of B is awarded to students who demonstrate minimum level of mastery of an attainment before a jury, an A grade for superior performance, or an I (incomplete) when a student fails to demonstrate the minimum performance standard. A student who earns an I grade for an attainment is allowed to take the jury exam again but can earn a grade no higher than a B. A more detailed account of the COA record keeping system, transcript, grading policies, and jury policies is appended in this document.

Students register for 15 credit hours of learning packages upon entering the program. After these are completed, they register for 15 more, and so on, until they are ready for jury review of one or several attainments. A degree is awarded when a student completes all learning packages comprising the program and demonstrates successful mastery of all required attainments.

CHAPTER IV

The Experimental Programs

The Stage I programs in Biology, Nursing, and Urban and Regional Planning
were designed in the winter, spring and summer quarters of 1974, and have been
in operation for two years. The Stage II programs in Music, Religion, Psychology
and Theatre were designed in the winter, spring and summer quarters of 1975, and
have been in operation for one year. The total external funds invested in the
three Stage I programs was $108,100, while the total external funds invested in
four Stage II programs was $29,400. The Stage I figure represents combined support
for three programs spread over three years, while the Stage II figure is the support
given to four programs spread over two years.

Biology

The COA Marine Biology program, two years in operation, represents an addition
to the previous course offerings of the Biological Sciences Department. The
program's aim is to prepare students for graduate school and/or immediate employ-
ment in the field of Marine Biology. Estimates are that half of the COA students
will enter graduate school. There were 28 students enrolled in the COA program
at the close of the spring quarter.

Since Marine Biology majors must complete the extensive departmental requite-
ments of other Biology and parallel courses, the COA packages are treated, in
effect, as electives. To the extent that COA represents small proportions of
student workload and is time-variable, procrastination is very evident. Though
35 credit hours of learning packages have been developed, 13 hours have not yet
been employed.

It is doubtful that the COA program will continue in Marine Biology.
Dr. Collier will retire at the end of fall quarter, and it is likely that his
replacement will be assigned to areas recently hurt by major cutbacks in personnel
in the Biological Sciences Department.

Nursing

The School of Nursing has two types of attainment-based programs, a generic
program and a RN program. The aim of the generic program is to provide a parallel,
self-paced route for those students who have completed their basic studies require-
ments and who are pursuing a Bachelor of Science degree in Nursing. For two years,
Dr. Anne Belcher, who specializes in medical/surgical nursing, has been the
program mentor. Fifteen students enrolled in the generic program in the fall of
1974; and by the end of spring quarter 1976, 14 of these students had completed
the course of studies, which included 34 learning packages totaling 68 credit
hours. A list of learning packages and generic competencies is found in Appendix I.

In the fall of 1975, an attainment-based RN program was instituted with an
initial enrollment of 28 students. The RN program is designed to offer accelera-
tion to those students who have already had extensive field experience but who
wish to receive a Bachelor of Science degree in Nursing. Students entering this
program are licensed nurses who hold an Associate of Arts degree or a diploma
from a hospital-based program. Currently, three RN students have completed the
COA program of 68 credit hours, and three to four are expected to be finished by
the end of summer quarter 1976.

Unlike COA programs in other departments, the School of Nursing certifies
all 20 generic competencies at the end of the program in a terminal jury process.
Tutoring assistance from specialized faculty and outside practicing professionals
is encouraged and frequently obtained. After completing all learning packages
and receiving any tutoring felt necessary, the students proceed through jury
examinations. Jury members include four departmental faculty and one practicing
professional per student. The program mentor estimates that two years are required
to complete the generic program, and an average of four quarters will be necessary
for the RN program.

Urban and Regional Planning

The Curriculum of Attainments program (COA) in the Department of Urban and Regional Planning is designed to expand the scope and flexibility of graduate planning education by providing a competency-based alternative to certain portions of the conventional degree program. The conventional degree program requires 72 quarter hours plus a summer internship. Formal study typically requires six quarters. Ten courses, or 30 credit hours, constitute what is known as the core requirement; all degree seeking students must complete these. Beyond the core, each student and his committee designs a program of study which embraces one or several functional specialty areas.

The COA is designed as an alternative to the core requirements. Although learning packages are available for competencies beyond the core, they are purely elective and do not address any particular specialty area. In completing degree requirements, in the conventional sense, a COA student's competency-based program must dovetail with specialty courses offered in the conventional program. Students admitted to the program with advanced standing may complete degree requirements without specializing.

The COA core program consists of 17 learning packages in 4 competency areas. The learning packages total 36 quarter hours. Four learning packages totaling 13 credit hours are available as electives for those students who complete the COA core program.

Dr. Edward McClure, an architect who specializes in design, has been the mentor of the program which currently has twelve active students. Of the total, eight are first year students (Core) and four are second year. One student has graduated. The second year students are those from the original class who elected to take learning packages beyond the core requirements. It should be noted that of the 14 original students, 13 completed the COA core requirements.

The COA core program (first year) calls for each student to stand for five formal juries. Each jury requires two hours, on the average. A student stands for a formal jury after he has completed a series of linked learning packages. The learning packages cover a broad range of planning skills and knowledge areas. The faculty in the Department of Urban and Regional Planning serve as tutors for the learning packages. It should be noted that because of the level of development of the learning packages and small number of students in the COA program, not all faculty were called on to be tutors. On the average, a student would require about 3 hours of tutoring for a 3 hour package. Another two hours were needed for evaluating the package assessments completed by the students.

Music Education

The COA program in Music Education is designed to provide comprehensive training in the teaching of music for future music teachers and band masters. Its concentration is on developing basic mastery level skills in the playing of a large variety of instruments rather than achieving virtuoso performance on any one. In addition, the program emphasizes effective conducting and instructional skills.

Prior to the COA program, the Music Education program consisted of a series of courses primarily aimed at the mastery of various groups of instruments. The COA mentor, Wes Collins, taught courses in brass instruments prior to his involvement in the COA. Recognizing a broad range of skill levels among his students, Collins sought a more effective means for initiating his instruction to each student at his or her skill level. The individualized and time-variable aspects of COA offered a workable solution.

Mentor Collins sees the program as addressing three domains of learning: cognitive, performance and teaching. He feels that the COA program and its

individualized instruction format is a means of developing an artistic Gestalt in these domains.

There were 18 COA students. Approximately six have completed 12 or more credit hours of COA learning packages and another six have progressed less than 12 hours, while six have made virtually no progress.

Religion

The purpose of the COA program in Religion is to provide upper level course offerings for those students who are pursuing a baccalaureate major in the field of religion. Designed as an alternative to traditional courses, the COA curriculum is structured in order to meet the entry level requirements of both graduate schools and seminaries. Dr. William Swain, the program mentor who specializes in Eastern Religions, and other departmental faculty developed the generic competencies which were eventually incorporated into eight learning packages, comprising a total of 45 student credit hours. In the fall of 1975, eight students initially enrolled in the department's COA program; two of these students dropped out during the year. The remaining students registered for a total of 32 hours. Twenty-four of these hours are currently being carried as incompletes, with the probability that 12 of the 24 hours will be completed. As of this writing, no learning packages have been finished; but by the end of summer quarter 1976, the program hopes to have at least one student experience the jury process.

Psychology

The Psychology Department is one of the largest departments on the ESU campus both in terms of numbers of student credit hours produced and in number of faculty. It is highly research-oriented, with its major academic reputation gained from the areas of behaviorial psychology and physiological psychology. The area of humanistic psychology is generally held in low esteem by the department.

The COA program in Psychology is a nine credit hour program to help
psychology majors develop behavioral observation and interpretation and facili-
tative skills. The program was offered by Hal Korn, the mentor, whose training
is in clinical psychology, to a total of 12 students throughout the year. The
program was offered as a series of directed individual study (DIS) courses in
which the whole group met at least once per week. Small group sessions were also
conducted. The courses were organized into modular units and included respond-
ing to one another in groups, viewing films and analyzing novels in addition to
textual materials. The mentor did not develop formal learning packages nor did
he use juries to evaluate outcomes of this sequence of instruction.

Theatre

The purpose of the Theatre History program in the School of Theatre is to
develop a broad yet relatively in-depth knowledge of theatrical forms, their
origin and transition, and an understanding of the social and political forces
on the theatre through history. The COA programs in Theatre History were
developed primarily for theatre majors, with emphasis on providing sufficient
background for its graduates to enter post-graduate degree programs.

The COA program was developed in parallel to the existing theatre history
courses in terms of objectives and content. There are presently 18 credit hours
of COA learning packages completed. Nineteen students entered the program.
None of the students have completed all of the learning packages, but most have
completed a major portion.

Dr. Arthur Dorlag was initially mentor of the program and has been teaching
conventional courses in Theatre History for a number of years. Doctoral candi-
date William Klapp, who initially helped the mentor design and produce learning
packages, assumed the role of mentor when Dr. Dorlag resumed teaching conventional
courses. The costuming portion of the COA program in Theatre concerned the

development of skills in the areas of costume history, fabrics and construction,

and costume design and management. It is a four credit hour sequence with an

enrollment of approximately 100 students per year. Dr. Don Stowell is the

mentor of the costuming segment of the COA theatre program.

CHAPTER V

The Project Goals

GOAL 1: To Establish Mastery Standards
for Degree Programs

Introduction

The central concept of the Curriculum of Attainments is that degrees are
awarded on the basis of scholarly attainments demonstrated before faculty juries
without regard to the time or place in which they were acquired. An attainment
consists of three principal elements: 1) a generic behavior or knowledge area;
2) an assessment task(s) and 3) a preset standard of performance made public in
advance of the assessment. The concept of attainment is considered different
than competence in the sense that attainment is referenced primarily to the
performance requirements needed to complete an educational program, while compe-
tence is considered to be linked primarily to the demands of meeting the require-
ments of professional certification or to the qualities deemed desirable for entry
level to an occupation,[1] although attainments may also encompass occupational
competencies in career oriented programs.

Unlike small autonomous colleges within a large university complex (e.g.,
College III at University of Massachusetts) or small private liberal arts colleges
(e.g., Alverno or Mars Hill), no one administrative authority assumes primary
control over the whole four-year curriculum. At FSU, the academic department is
both an administrative unit and a curricular unit. Hence the establishment of
attainment-based education in a large university is, by and large, in the short
term, relegated to discrete programmatic units instead of encompassing an entire

---

[1]A paper was presented by the author at the 1976 AERA National Convention in
San Francisco on the elaboration of the difference between attainment and compe-
tence with implications for assessment.

four-year baccalaureate degree curriculum. Thus statements of attainment are less global and less abstract than the statements of competence found at smaller schools and colleges which have implemented competency-based educational programs.

The Attainments

Statements of generic attainment which indicate the desired outcomes of educational programs were derived from a number of procedures: content analysis of existing course curriculum (i.e., what attainments are being taught now?); job task analysis (i.e., what skills and knowledge are required to perform effectively in an occupational role for which the program prepares students?); revelation (i.e., what attainments should a student know or possess in order to adapt to a changing job market?); and negotiation (i.e., in order to maintain departmental harmony, attainments are added without any obvious rationale even though they represent an out-moded portion of the curriculum). Appendix I, pages 106-116 presents a listing of Generic Attainments for each COA program.

The final lists of attainments were agreed upon as a result of a variety of procedures. The obtaining of agreement ranged from soliciting approval by secret ballot (Nursing) to benign neglect by departmental curriculum committees (Psychology). In some cases entire departments participated in the attainment definition (Nursing, Urban and Regional Planning, Music, Religion, Vocational-Technical Education), but in other programs the entire effort to state attainments resulted primarily from the work of a mentor, several colleagues, and a graduate student (Biology, Psychology, Theatre). In all cases, statements of attainment were sent to peers for review, but not in all cases was there a response (Psychology). In most cases (except in Religion) the statements of attainment were reviewed by at least one external consultant. The philosophy of the COA is that practicing professionals would review the attainment statements and standards for mastery. However, the use of external examiners to evaluate standards in juries was consistently employed in

only three programs: Biology, Nursing, and Music Education. Other programs either did not seek to employ professionals in juries because of ideology (no external referent for standards, as in Religion) or did not see the value in going to the trouble of arranging for the external examiner to attend juries, even though funds were provided for them to participate. On a more positive note, the programs in which external practitioners were employed found they were generally helpful, and that the professionals often donated their time to help academic programs in this way.

Through the implementation of seven programs in a variety of disciplines, an optimal number of generic attainment statements with which to state the outcomes of an educational program appears to be about 8-12. (The programs ranged from 8 to 68 credit hours). This number of attainments allows for sufficient breadth of skills and content without trivializing the outcomes. In addition, the proliferation of attainments begins to tax juries for their certification. Urban and Regional Planning with 27 generic attainments and Nursing with 17, appeared to have almost too many. It is this author's impression that many of the statements of attainment could be collapsed into a more highly abstract statement. One contributing factor in determining the number of generic attainments was the size of the program in terms of "curricular turf." It influenced both the number of attainment statements and their level of abstraction. The larger the program in terms of credit hours, the more attainments it took to describe the intended outcomes. In addition, there was a correlation between the size of the program and the degree of abstraction. The larger programs encouraged the use of statements that were more global.

Again, at the outset of the project, there was no policy regarding the number or kind of statements of attainment for any given program. Each program was told to devise a list of validated attainments which faculty juries could use to formulate assessment strategies and set minimum criteria for performance, and at the

same time to comprehensively describe the intended outcomes of their respective program. While the quality of the attainment statements varies from program to program, they nevertheless have proved to be useful.

Assessment of Attainment: The Jury

As stated previously in the description of the COA, the primary function of the jury is to certify that minimum performance standards for the generic attainments have been demonstrated. The following seven guidelines were established for the conduct of juries in the COA:

1. The assessment tasks demonstrating an attainment are consistent with the statement of attainment. Content validity was the primary criterion used to establish correspondence between the assessment task and the attainment statement.* The only difficulty in addressing this aspect of the certification process was that, among all the programs, the juries tended to resort to primarily the traditional assessment practices (e.g., written essay exams or oral exams) to certify attainment. However, the Nursing program and the Music Education program did use videotape performances and simulations with pre-established criteria. [The Nursing program also used testimonials by practicing supervisors in the field as evidence of attainment.] Nevertheless, there remains a constant search for more efficient but yet valid use of juries to certify attainment.

2. The assessment task should be as independent as possible from the learning processes. At the inception of the COA project it was thought that assessment would be completely independent of the learning process, but the author has come to realize that if a student is to demonstrate the desired intellectual or psycho-motor capacities of an attainment, he/she must first know the appropriate symbols

---

*Due to the brevity of time to plan and implement COA programs, empirical research-type studies could not be performed to establish concurrent or predictive validity. The Nursing program used a form of concurrent validity by informally comparing student performance with practitioner performance in the field.

or skills required to demonstrate the desired outcome, and secondly, manipulate them in ways which are familiar to the resident faculty jury. [The author has come to believe that no student, however skillful, could ever "test out" of an attainment-based academic program at FSU. There will always be an FSU method for demonstrating attainment.] For example, in the RN program in Nursing where students actually possess many of the important basic clinical skills upon entry to the program, the most a student was able to shorten the normal five-quarter time span to graduate was to three quarters.

3. The mentor is not a voting member of the jury. One tenet of the Curriculum of Attainments is that the instructional function be separated from the certification function. This separation allows a mentor to function as a guide and advocate for the student rather than a judge. As a result, a more personalized student-teacher relationship arises. The mentor is, however, encouraged to attend jury examinations in order to supply additional information about the student upon jury request. Sometimes it is helpful for a jury to know whether the student's performance represented a maximum performance for that student. Other times, the jury needs to be tempered, as when in oral exams questions extend beyond the intended scope of the attainment.

One difficulty in operationalizing this concept is that in departments with few faculty members, the tutorial role and the assessment role are performed by the same faculty member because of his/her special expertise. It was not infrequent that the faculty member who served as a tutor for an attainment also served on the jury which certified it. While there may have been an ideological problem with this situation, there was no apparent operational difficulty (probably because the instructors are accustomed to serving the two roles simultaneously). There were no reported incidences of disagreement among jurors as to the rating of a performance when one member happened to serve as a tutor for it as well.

4. <u>The minimum standards of performance for an attainment are consistent
among the juries.</u> The assessment of generic attainments most often involve the
demonstration of complex cognitive and psychomotor skills which are both poly-
dimensional in nature and contain a high degree of subjectivity. A jury is able
to evaluate a generic attainment because a team of professionals is better able
to cope with subjectivity by arriving at consensus and to resolve individual
perceptual differences. Reliability of judgment is accomplished by requiring a
consistency of membership for a given attainment and a consistency (but to a
lesser degree) of membership across different attainments as well. For example,
the Nursing jury is drawn from a pool of 6-7 faculty members, Biology from a
pool of 9-10, Urban and Regional Planning from a pool of 15, etc. The assigning
of one specialist to serve on all juries for a given attainment is highly desirable
to help maintain consistency of judgment.

One difficulty in the establishing of consistent standards has been that the
external examiners have at times been more critical of a student's performance
than the resident faculty members. There have been other reports of an occasional
individual faculty member rating performances consistently lower than his peers.
Generally, however, after several jury reviews by the same members, differences
among jurors' ratings mitigates. In fact, once the degree of consistency among
jurors stabilizes, having the entire membership present for the certification
of a given attainment may not be required, thus economizing in manpower for the
use of juries.

5. <u>The assessment of attainment should be comprehensive.</u> Again, the concept
of a generic attainment requires that an attainment represent a broad and complex
cognitive or psychomotor behavior. An attainment is never an attitude although
there may be affective components that underlie a given performance. The philos-
ophy of the COA is that an educational institution can never certify an attainment

on the basis of the possession of a given attitude. One can only infer that a desired attitude is present when the desired behavior for certification is observed. Nevertheless, it is recognized that complex behaviors have a knowledge base and psychomotor elements as well as attitudinal components. Attainments comprising the outcomes of the educational programs developed in COA are, by and large, comprehensive in nature, as in the development of a master plan for urban renewal (Urban and Regional Planning), or the development of a comprehensive-mental health care plan (Nursing), or the possession of a complex cluster of skills, knowledge, and attitudes required for the teaching of a musical instrument (Music Education). Given the complex nature of generic attainment, multiple assessments are mandated and used. Examples are noted in the programmatic descriptions of assessment practices that follow later in this section.

6. The mentor is responsible for formative evaluation in the development of capacities for the demonstration of attainment. To emphasize, the instructional role in the COA is separated from certification, but not from evaluation. The mentor is responsible for assisting students in the preparation for jury exams by providing them with constant feedback on the progress they are making toward developing the capabilities required to demonstrate attainment. In operation, the mentor "passes" a student on the completion of a learning package and determines when a student is ready to move on the next package. The mentor also plays, in some respects, a "gate-keeper" role by permitting a student to go before juries when he/she feels the student is ready. Since it is the mentor who arranges for the convening of the jury, and must call upon colleagues to donate time for which they receive no monetary reward or professional recognition, the mentor is extremely careful in determining whether a student is ready to undergo a jury review. Thus there is a tendency on the part of mentors to allow students to over-prepare for jury exams. Another contributing factor to this

phenomenon is that mentors feel their instructional competence is at stake, and
they do not want their students or the program which they have toiled untold
hours to create to look academically equivocal. Furthermore, students, especially
at the undergraduate level, are extremely apprehensive about appearing before
juries. Students have indicated to the author that they are willing to "blow"
tests in a course, but they do not want to look bad in front of a jury. All
these factors appear to result in a high level of student performance demonstrated
before the juries.

    7. <u>The mentor provides feedback to students from the juries.</u> Following the
jury reviews, the mentor meets with the student to advise him/her in areas where
they may need further work or development and where the student exhibits strength.

Minimum Standards for Performance

The philosophy of the COA holds that minimum standards for performance are
established from faculty estimation of the desired minimum performance levels
representing the degree and from consultation with practicing professionals who
represent the consumers of the skills or knowledge taught in an educational insti-
tution. If a program prepares students for direct entry into the labor market,
then minimum standards for performance for successful entry to the market heavily
influence the performance criteria. If students in a program generally go on to
graduate school, then entry level skills required for successful graduate perfor-
mance influence the standard. Unfortunately, in the COA project neither of these
sources for establishing performance levels were empirically investigated. In
operation, however, minimum standards of performance were established by consensus
among the jury members present during a given jury session.

Most juries voted to determine whether a performance reached was at the
minimum level (for which a grade of "B" is assigned) or if a performance repre-
sented an honors performance (for which a grade of "A: is assigned) or if a student

failed to reach minimum level (for which an "Incomplete" is assigned). A

complete description of the COA grading policy is presented in Appendix 3.

When the minimum standard was not reached, the student was invited to return for

another jury review. However, when a student failed to demonstrate minimum

standard on the first jury review of a given attainment, the student could earn

no higher than a "B" on a retrial on that given attainment. From the author's

impression, there was more difficulty in arriving at an agreement for an honors

grade than for what constituted a minimum performance, even when explicit criteria

were established. On the Biology juries, a unanimous vote among jurors is required

to award a student an honors grade, while in other programs (Music, Nursing, Urban

and Regional Planning) only a simple majority is required. A more explicit

description of the rationale and procedures for the jury is appended to this

document in the Appendix.

One very real and pragmatic consideration influencing the establishing of

standards is that standards in the COA tend to be influenced by the standards in

the conventional program. Students often remark that if they have to learn more

in the COA, they should get more credit. Thus if students feel the COA requires

more effort for the same pay-off, they will opt for the conventional curriculum

which is less demanding in terms of performance and requires less initiative and

self-discipline. Therefore, even though an external juror may indicate that a

student's performance is not adequate for successful entry level job performance

on a given attainment, he/she may be overruled and the standard may remain low

because the conventional program does not require such a standard. This phenomenon

has led occasionally to overt dissension between the faculty and the external

examiner.

Some students volunteer for the COA because of high standards, as in Biology,

where the COA program is an "honors" program. Other students are attracted to

the program because they can earn a grade no lower than a "B". However, these

students are sometimes disappointed to find out that the effort required is too much or that they cannot choose to earn a lower grade with a lesser amount of effort. These students most often drop out of the program. The program has been established in such a way that there is no room for the "gentleman-C" type of student. Needless to say, the setting and maintaining of consistent standards in comprising between the ideal and the real is a difficult task in attainment-based education. The setting of standards is even more difficult when "attainment-based" educational programs operate as an alternative to the conventional programs where there are powerful and complex social forces influencing the standard.

Assessment Techniques

Again, the direct assessment of generic attainment requires that the indicators of attainment are sufficiently extensive in scope and variety to capture the essence of the intended global behavior. The Nursing program devised the most sophisticated assessment system to evaluate attainment. The jury in this program required the deployment of at least three different kinds of performances for a given generic attainment. Their list of assessment actualizations and performances included independently graded written essays and objectively scored tests to measure a knowledge component of a generic attainment, demonstrations and simulations to measure a psychomotor component, and an oral inquiry by a jury to assess aspects of an attainment that required the demonstration of spontaneous problem-solving skills. For the certification of attainments that were highly developmental and required many observations over a long period of time, diaries, anecdotal records and mentor evaluations in the formative stages provided useful information.

If the conventional reliability and validity criteria are applied to the assessment of attainment, validity is achieved through the use of comprehensive assessment techniques where the "Beta weight" for each of the assessments is

determined often non-empirically by jury interaction, even though weighted
criteria are preset and explicit. Biases in assessment sometimes result from
individual persuasiveness by one particularly strong personality on the jury
and from the presence or lack of presence of skill manifested by a preceding
examinee. Halo effects arise in jury exams--a performance by a preceding student
can make it easier or more difficult for the next examinee. Fatigue is also
another factor affecting consistency. A tired jury tends not to be more lenient
in their evaluations.

As previously stated, competency is established through the use of the same
jury members for a given attainment and through the "overlap" inherent in the
use of varieties of different assessment techniques employed for a given attain-
ment. There appears to be a general competence factor in the demonstration of
an attainment regardless of the assessment technique. After several jury sessions
are held in the assessment of a given attainment together with several different
performance indicators for that attainment, reliability in the assignment of
grades does not become a question. What follows is the question of which indica-
tor provides the most reliable and valid information to assess a given attainment,
so that both jury time and student evaluation time can be minimized. Jury time
is one of the most precious resources in the COA program. Mentor time can be
obtained from existing "departmental slack", but jury time is clearly an add-on
activity that is devoted "in-kind". Where program commitment is not strong, the
burden of intensive evaluation threatens the existence of the COA as a viable
alternative curricular tract in a program. The jury makes the COA program unique--
it compels responsibility on both the part of students and faculty to insure that
quality education is attained.

A number of research questions emanate from the project to address the issues
of reliability and validity of assessment practices, the assessing of global

behavior as well as how the assessment of attainment may be achieved most
efficiently. Perhaps economy may be achieved through randomization of certi-
fidation of generic attainments or the evolution of more objective performance
criteria requiring less reliance on subjective consensus or the determining of
which assessments are the most predictive of successful performance in several
attainments. These possibilities cannot be achieved until there have been many
jury examinations for many students over many more attainments. Until now, the
preponderance of effort has been devoted primarily toward administering the juries.

Assessment Practices

The assessment practices employed by the programs are described as follows:

Biology

The jury system in the COA program has also "evolved" considerably since
its beginning. In the first months of COA, course credit was given in one hour
increments when students demonstrated mastery of very specific content areas.
Difficulties began to arise early in the program. Students felt that the degree
of mastery and the range of knowledge required were excessive considering the
amount of course credit given, and the frequency of jury sessions began to make
substantial demands on the time of jurors. Presently, juries certify competence
in generic areas for which 3 to 5 credit hours are assigned. This system has
proven much more workable.

The composition of juries reflects the interdisciplinary character of the
program. In addition to other Biology faculty, jurors were drawn from the
Departments of Geology and Oceanography and field biologists from the Florida
Department of Natural Resources. Dr. Collier is FSU's only specialist in Marine
Biology and for this reason, he also served on the jury, but not as a voting
member.

The jury system was beset with difficulties throughout the project, especially
in the initial months of operation. Frequently jury sessions were cancelled due

to the unavailability of jurors (scheduling problems). Jury examinations were requested by students when they had passed the mentor's exams and, when appropriate, they obtained proper results in laboratory experiments.

The content graduate assistant, Ralph Montgomery, who also attended many jury sessions, reports that jury exams tend to be exhaustive--lasting 40 minutes to 1 1/2 hours per student per competency. He sees a shortcoming of the jury system arising from the possibility that a student's grade is frequently more of a result of his ability to express himself than his knowledge and expertise in the subject area. Montgomery also notes that students tend to be graded lower by jurors when they follow excelling students. He felt that jurors begin by asking rudimentary questions and progress to more challenging ones--frequently questions requiring knowledge beyond that indicated by the competency statements. Often, after questioning an excelling student, the jurors do not return to the more basic questions for the next student. In fact, Montgomery admits to selective scheduling of juries to avoid this tendency. Upon occasion, the mentor, Al Collier, intervened in the jury process to inform the jury that they were perhaps exceeding the limits of the scope of the attainment.

Music Education

Jurors were School of Music faculty, Harry Schmidt and Janet Worth, and Mr. Lewis Jones, bandmaster from a local high school. The faculty jurors were selected for their expertise in certain instrument groups, while Mr. Jones was the practicing professional.

Jurors were familiarized with the concepts of COA prior to their assessments. Before meeting with students, jurors reviewed all written exams, special projects (such as lesson plans from practice teaching) and videotapes of the student performing with instruments. Jurors did meet with the students for oral examinations primarily to "fill in gaps" and retest any weak areas indicated by the assessment tools mentioned above.

42

Grades of A and B were given. "Incompletes" could have been given if the jury had considered the student not prepared. However, students were not allowed access to jury review until they had passed Mr. Collins' screening.

Nursing

Assessment in the Nursing program consisted of two parts: formative juries when students completed learning packages, and comprehensive terminal assessment conducted prior to graduation. Jury sessions, both formative and terminal, were conducted with a minimum of four jurors, including when possible, a practicing professional. Each juror made an independent evaluation of A, B, or I (incomplete). After the jury session, assessments were compared and an overall grade was given. There was generally a very high consensus among jurors. The mentor did not participate in the jury and only one juror also served as a tutor.

When a student had earned a passing grade on all attainments and was prepared to take the terminal assessment, he/she requested the jury in writing. Within a week the student would be provided with a schedule of assessment activities and assigned a coordinating juror.

The terminal jury procedure consists of four parts:

A. A comprehensive written exam (including essay, open book, short answer and objective questions).

B. A clinical practicum of "grand rounds", a comprehensive formal presentation of a patient/client nursing care experience. The practicum includes development of a nursing care plan in which the student demonstrates evidence of integration of all terminal competencies. The student is required to give an extemporaneous oral presentation and discussion of the health care plan. That presentation and discussion will come under "cross examination" by jurors.

C. A simulated clinical situation in which the student is presented with a case study and required to recommend proper approach to a nursing care plan.

D. Personal interview between student and two jurors to clarify areas of question in completing the assignments and to give the student feedback as to strengths and weaknesses shown in the assessment.

A letter grade of A, B, or I (incomplete) is assigned within 24 hours of the assessment.

Theatre

The Theatre COA program never fully implemented the jury assessment concept. Faculty jury members found it difficult to arrange schedules for the jury sessions. When a jury was held early in the program, the jurors declined to give a grade because the student was "grossly ill-prepared." Since this program was in its first year of implementation, this "formative" jury quickly identified inadequacies in the educational processes in operation.

Because of a lack of consistent support to maintain jury examinations, the mentor resorted to awarding grades based on students' performances on written and oral exams and on research projects.

Urban and Regional Planning

Assessment in the Urban and Regional Planning program followed fairly closely to the theoretical model. Jurors were selected from the Urban and Regional Planning faculty on the basis of their expertise in content areas. The juries were convened for oral exams when students requested them after completing learning packages.

Practicing professionals were not used. Attempts were made to employ them, but the cost was thought to be beyond the resources of the department.

Jury measurements were both oral and written. There were no grades given, merely pass or fail. There were efforts to make the juries criterion referenced, yet Mr. McClure noticed a tendency among jurors to evaluate students' performances normatively. In essay examinations, papers are graded by two readers, if they

are consistent, a grade of S (satisfactory) or I (incomplete) is awarded. If there is disagreement, a third reader is required.

Mentors were briefed before the jury as to procedures and were given copies of learning packages. They also had the opportunity to review pretests and research projects of the students.

GOAL 2: To Create Open, Time-variable Educational Programs

In order to implement a location-free, continuous progress educational program in the midst of a location-fixed, time-fixed educational system, certain policies had to be established (or at least exceptions acquired to current policies). These policies were developed as the program progressed over the span of the project. These are outlined as follows (a complete documentation of COA policy statements is Appended):

1. Early registration to permit continuous progress. The problem of how to allow students to progress at a continuous rate toward the mastery of attainments was one of the first issues that had to be surmounted. A constraint on the project was that the existing fiscal accounting and record-keeping systems had to be employed since special procedures could not be implemented at FSU to accommodate an experimental instructional program, no matter how worthwhile the project. A method of circumventing this constraint in order to introduce the element of continuous progress was to establish an early registration procedure for use by COA students exclusively, instead of creating a more universal open registration procedure for all students. Early registration merely allows a student to register early for an upcoming quarter, thereby creating, in effect, an open registration system. Thus if students register for learning packages in September and complete them by the end of October, they are able to register early for the upcoming Winter quarter without having to wait until January's formal Winter quarter registration in order to continue progress.

The early registration procedure was found most useful in programs where students had acquired much prior learning experience. For example, the Nursing RN program (students who already possess RN certificates and who are returning to FSU for the baccalaureate), used the early registration procedure extensively. One RN student registered for and completed 48 quarter hours in the Spring quarter

of 1976 to set an all-time FSU record for student progress. This procedure
was not used in programs where progress through learning packages was less
rapid--in fact, this procedure was used exclusively by the Nursing COA programs.

2. <u>Holding fees in abeyance</u>. The policy was adopted that students were
required to pay fees for the learning packages at the time of registration.
Therefore, when students registered early for an upcoming quarter, a procedure
was implemented to hold fees in abeyance in the comptroller's office until the
regular registration period. Then the learning packages for which a student had
previously registered and fees already paid were submitted with the regular
course file for conventional students to the Board of Regents at the time of
regular registration.

3. <u>Assigning credit hours to learning packages</u>. Since the COA was imple-
mented in a public university, a means had to be devised to translate attainment
into the funding currency--namely the student credit hour. Since the unit of
instruction in the COA is the learning package, a certain amount of credit was
assigned to each learning package. The number of credit hours assigned to each
package was devised by first taking the number of credit hours required to com-
plete the program <u>via</u> conventional courses. For instance, a major in Religion
is 45 credit hours; in Nursing 68; in Biology 45; in Music Education 27; etc.,
and assigning that sum as the total number of credit-hours earned in the parallel
COA program. This sum was distributed among the learning packages comprising a
given program. The exact number of credits assigned to each package was set
a <u>priori</u>, according to the estimated effort expended by a naive student to complete
a package. The more difficult and time consuming packages received more credit
than easier and less time consuming ones. By assigning credit hours to a package,
the registrar could relate to a learning package in the same way as a course--
even though these are conceptually quite different. A paper written by the
project director entitled "Guidelines for the Development of Learning Packages"

is appended which contains a complete description of a COA learning package as well as a comparison between the characteristics of a conventional course and those of a learning package.

4. <u>The creation of an attainment-based transcript</u>. The FSU course-based transcript was an inappropriate document with which to record the achievements of students in attainment-based programs. Therefore, a new transcript was developed on which is recorded not only the title of the learning packages with dates registered and completed, but also grades earned in the jury examinations on attainment, the dates the jury exams occurred, the faculty members and outside professionals who served on the jury panels, and the nature of assessments used to determine attainment. In compliance with university regulations, the conventional transcript was also used in parallel, but contains only a record of learning package completion. Both are official documents certified by the registrar's office. A copy of an attainment-based transcript is appended.

5. <u>Retroactive grading</u>. The philosophy of the COA is that the jury evaluation of student outcomes required for certification takes place toward the terminus of the program--not during the process of mastering the attainments (even though there was a good deal of student objection for not having received "credit" for demonstrating enabling attainments). Thus, in the COA certification is based on the evaluation of learning outcomes, not on how these were attained. Hence a procedure was developed whereby satisfactory grades (S) were assigned upon the satisfactory completion of learning packages by the mentor while the grades (B) for minumum level attainment or (A) for honors attainment were assigned following a jury performance for an attainment. However, a method had to be devised for converting jury evaluation on attainments into a grade point average since both the university and future admissions officers at graduate schools or professional schools require a GPA. One method used to address this issue was to

terms of student credit hours), combine both COA learning packages and conventional courses. These results also indicate that at the beginning stages in the development of attainment-based educational programs, conventional courses must be depended upon as an instructional resource. Secondly, many students in the COA programs have related to this project director that they prefer the option of taking conventional courses along with COA learning packages because a formal course provides the better setting in which to master some-specific attainments, or that they like the opportunity to take a course under a professor whom they have heard much about from peers. The combining of both learning packages and conventional courses allows both time-variable attainment and the selection of the best course offering.

TABLE 1. Mean Number of Credit Hours Enrolled and
Completed by Students in COA Learning
Packages and Regular Courses for 1975-76
Academic Year (9 mos.)

Program	COA Package Hours		Regular Course		Total Hours	
	Enrolled	Attained	Enrolled	Attained	Enrolled	Attained
NURSING - 1st yr. RN (N = 26)	28	25	18	18	46	43
NURSING - 2nd yr. generic (N = 14) summer, fall, winter qtrs.	34	37**	5	5	39	42
UPL resident (N = 6)	30	14	10	10	40	24
UPL external (N = 2)	9	4	0	0	9	4

RN student Thelma Jenkins set an FSU record of completing 48 quarter hours in one quarter. Registered and achieved in second quarter.

**Includes packages carried over as incomplete from 1974-75 academic year.

assign grades retroactively to the learning packages which prepared a student
for a given attainment. This required changing the previously assigned "S" grades
on completed learning packages to letter grades A and B following the jury exam
on attainments related to the learning packages. In this way the registrar is
able to derive a grade point average at the time of graduation by taking the
credits assigned and grades awarded to each learning package in the program. If
a student drops out of the program prior to jury exam, "S" grades remain on the
transcript and learning package grades are not computed for the student's final
GPA.

    6. <u>Graduation requirements</u>. A student graduates when he/she has completed
all learning packages (to generate student credit hours for the university) and
has demonstrated minimum standards for performance on all required attainments
(to demonstrate mastery).

    7. <u>Exceptions to existing rules and regulations</u>. Exceptions were required
in the amount of time required for on-campus residents; the maximum number of
credit hours which could be taken in a quarter; the maximum amount of time
required to remove an incomplete grade (one year was adopted in the COA); and
the minimum number of class contact hours required by a full-time instructor
(Florida 12 hour contact law). Each of these exceptions required approval by
the Dean of Faculties and the Graduate and Undergraduate Policy Councils.

<div align="center">

Operational Indicators of
Time-variable, Continuous Progress Attainment
</div>

    In all programs, students used varying degrees of both learning packages
and courses to master their attainments. The philosophy of the COA is that the
formal course is one resource available to students acquiring the skills and
knowledge needed to demonstrate an attainment. Table 1 below presents data
indicating the extent to which students in two of the largest COA programs (in

One problem in mixing of learning packages and courses is that students "put off" the learning of the material included in the packages when the demands of the time-structured courses become great. Often, students carry incomplete packages for a considerable length of time. However, there is an auspicious perspective to this phenomenon. In the case of the Music Education program, where students often participate in marching bands or in concerts, students may put off working in the COA temporarily but the attainment standard never goes away. According to the mentor, Wes Collins, there is a tendency in the conventional courses on the part of the instructor, when time constraints and conflicting obligations occur and when students perform less skillfully than desired, to sympathetically respond to student time demands and accept a lower standard of performance at the end of the term "in light of the circumstances." However, in the COA program, standards are not sacrificed.

TABLE 2. Variable Academic Progress
of Students by Program

Academic Rate	Nursing RN (n = 26)	Nursing Generic (n = 14)	UPL Resident (n = 6)	UPL External (n = 2)
Rapid Paced (46 credit hours or more per year)	13	2	0	0
Normal Paced (36-45 credit hours per year)	2	10	0	0
Slow Paced (35 credit hours or less per year)	11	2	6	2

Table 2 above indicates the degree to which students maintain normal progress in the COA programs. Data are used only from the Nursing program and Urban and Regional Planning program since these are the largest in terms of total credit hours and most self-contained of the COA programs. The pace of attainment in other programs is so much determined by the extensive amount of course work required from the conventional program that it is insufficient to draw inferences about student pacing in attainment-based education. The Nursing RN program indicates a bi-modal distribution of rate of progress (i.e., completion of learning packages). Students in this program tend to either rapidly complete the requirements for the B.S. degree and move on to full-time employment or to take jobs and progress at a slower pace. Most (if not all) of these students are older than the generic students and have important life responsibilities other than school. Many of the RN students work at least 20 hours per week as nurses in local hospitals while they are in the program. The COA provides the flexibility for these students to help them achieve educational and professional goals while at the same time they can receive advanced professional training. As an example, one of the students in the RN Nursing program was able to work 32 hours per week while completing 60 credit hours during three quarters of residence. Table 3 presents the differences in age and work patterns between generic Nursing students and RN students.

TABLE 3: Comparison of Age and Work Characteristics of
Generic Nursing Students and RN Students

Characteristic	Generic (n = 14)	RN (n = 17)
1. Age Range	21 - 30	21 - 52
2. Mean Age	22.5	29.8
3. Hours per week in employment		
(a) 0-7	10	7
(b) 8-15	3	0
(c) 16 - 23	2	1
(d) 24 - 31	0	1
(e) 32 - 40	0	7

The generic Nursing students (those students beginning the program at the junior year with no prior nursing training) indicated a rate of progress commensurate with students in the conventional program. Time-variable progress was indicated by the fact that two students finished the program in four quarters, one quarter early, and two finished after the normal time of graduation, approximately six weeks. It appeared as though the students in the generic program paced themselves according to the normal rate of progress in the conventional program. Seemingly, many students could have finished earlier had they been more motivated. Many students, while procrastinating during the mid-stages of the program, made a mad scramble at the end of the Winter quarter to finish in time for the school graduation ceremonies. Both students and juries worked overtime at the end of the Winter quarter to meet normal graduation deadlines.

The COA program in Urban and Regional Planning is far more demanding in terms of academic standards than the conventional program. Students must not only withstand more rigorous assessment procedures, but must structure their own time and do their own "digging" of the material. Therefore, it is not surprising that students progressed at a slower pace than the conventional students. In the second year of operation, there were not enough volunteers to take advantage of peer learning nor were there enough students continuing on from the first year of the program so that these more experienced students could serve as "big brothers" for neophytes and be able to advise them of pitfalls and shortcuts. Again, time-variable progress in Urban and Regional Planning is demonstrated by the capability of moving at a slower pace. Some students in the first group completed learning packages over the summer break and were ready for juries in the fall.

First attempt at an open university. The Urban and Regional Planning program took the first strides in the COA project to implement an open university concept. Two students matriculated this past year in the COA program from Fort Myers, Florida, a city about 400 miles away. One of these students was able to complete seven credit hours of learning packages working on her own. She was required to come to Tallahassee to register for the packages and to attend jury reviews. She was able to demonstrate that a student could learn on his/her own away from the university. However, her colleague from Fort Myers has not fared as well and has not completed any of the packages to date, for which he had registered last fall. It is this author's opinion that many of the COA programs are only one step away from developing sound open university programs. The Nursing RN program and a developing Vocational-Technical Education program, which may be implemented this coming fall quarter, 1976, appears to have both the exportable materials, procedures and clientele to conduct successful experiments in implementing an "open university" from within a closed one. (However, the author

was informed during the writing of this document that the Vocational-Technical Education program will not be implemented this fall due to the fact that both the administrator of the program and his assistant have recently located jobs elsewhere.)

GOAL 3: Verify That the COA Can Serve as a Paradigm for Cost-Effective
Use of Educational Personnel and Technology

Cost-Parity Analysis

by
David L. Fisher
Fiscal Analyst

Theory. In normal times the acceptability of an experimental governmental
(educational) program is determined primarily on the basis of its success in
accomplishing some socially valued objective, such as "teaching children to read."
When the program is offered as an alternative to an existing program, the emphasis
switches to a comparative measure of accomplishing the objective, i.e.,"teaching
children to read better."

In times of tighter budgetary constraints and slowed economic growth, the
acceptability criteria begin to shift away from an emphasis on attaining the ob-
jective to an emphasis on doing so in a way beneficial to, or minimally adverse to,
the budget, i.e.,"teaching children to read inexpensively." As in normal times,
when the program is offered as an alternative, the comparative measure is more
meaningful -- "teaching children to read less expensively."

Sadly, as economic (hence, budgetary) conditions reach the point of severe
contractions, the budgetary aspects of a proposed program may be the single most
decisive factor in determining its acceptability. During the 1974-75 fiscal year,
the State of Florida experienced severe revenue shortages -- to the extent that
budgets then appropriated were cut during the year. Appropriations for the current
year were reduced even further. This problem has been aggravated even more by the
economic erosion of inflation. According to Florida Board of Regents spokesmen,
the State University System would need approximately $35 million in additional funds
in 1975-76 just to stand still -- to provide the same level of services as were
provided last year. [1]

---

[1] York, E.T., Jr., BOR Chancellor. Address before Subcommittee of Florida
House Appropriations Committee, March 1975. Reprinted in Florida State, Vol. 8,
No. 30

However, Florida's new Legislature was composed of individuals whose campaigns were waged from platforms of reduced government spending. That Legislature's leadership, in fact, was outspoken in its perception that far too great a proportion of Florida's revenue was directed to higher education. "Holding the line on taxes" and a "watchdog" scrutiny of Board of Regents spending have continued to play major roles in Florida politics.

If an attainment-based, time-variable curriculum program is to be instituted in full scale in Florida's State University System, it must be justified not only on the basis of its conceptual advantages over the conventional curricular system, but perhaps, more on the basis of its "comparative cost-effectiveness." For the purpose of our evaluation, "comparative cost-effectiveness" is expressed in terms of "cost parity" with the conventional system. Such a comparative study could be done on a "full costing basis" (determining costs of student recruitment, evaluation and admissions, instruction, proportional institutional costs, curriculum development costs, etc.), comparing full costs of both systems. It could be effectively argued that a full costing analysis should be undertaken in order to make an accurate comparison (and indeed workable costing models, suitable for adaptation here, have been developed [2]); however, for two principal reasons, a more limited approach is taken: (1) The costs associated with making an accurate full costing analysis are virtually prohibitive; and (2) Since the COA is offered as a "peacefully co-existing" alternative to the conventional system, the most relevant basis for comparison is the relative productivity of student credit hours (SCH) between two analogous programs, given the manner in which funds are generated for university operation in Florida's State University System.

2.

Anne E. Scheerer. A Formula for Determining Instructional Costs. College Management, Nov. 1972 pp. 25-29.

Procedures and Results

The costing approach which was selected is as follows: The number of student credit hours (SCH) earned by students in the conventional system per term is divided by the number of full-time equivalent faculty members (FTE) in the respective departments in the conventional curriculum. This yields a SCH/FTE rate. EXAMPLE: If a department generates 1,000 upper division credit hours and 10 full-time equivalent faculty members are required to teach the courses which generate these credit hours, the SCH/FTE rate is 1,000/10 = 100 SCH/FTE.

The same procedure is followed in the COA program. The number of SCH generated is divided by the FTE necessary to generate them. The FTE rate is determined by adding one (1) FTE for the mentor and a determined FTE level to allow for tutor and juror services provided by other staff members. This FTE factor is then divided into the SCH for the COA program to derive a SCH/FTE rate for COA.

When the two SCH/FTE rates for conventional and COA programs are derived, they are compared directly as a ratio of [COA SCH/FTE / Conv. SCH/FTE]. The resulting product is the parity rate, and a rate greater than or equal to one (1) is desirable.

Almost as soon as formative data were generated, difficulties began to arise. In the Biology program, for instance, professors in the conventional program often teach different levels of courses (lower division, upper division undergrad, masters and doctoral levels), and since the COA program was exclusively upper division undergraduate, it was necessary to compare data associated only with upper division courses in the conventional system. The less-than-perfect solution was to count the number of upper division courses offered (weighted by number of credit hours granted for the course). The result was upper division contact hours. This figure was divided by 12[a] and the product was treated as the FTE required to generate the appropriate number of SCH.

---

[a]. (Florida law required that within each department, average contact hours per faculty member equal 12 hours per week).

Results

The results of the parity study at the conclusion of Spring quarter are presented in Table 4 on the following page. The data indicate that only the Nursing programs reached cost-effectiveness (Parity 1.0) comparable to conventional programs in the second year of operation. The Marine Biology program was far from parity, however, even though the students in the program were making what was perceived as "normal" progress on the whole. Closer scrutiny revealed a possible explanation: The Biological Sciences Department at the junior and senior level offers many generalist courses which virtually all biology students are required to take -- Genetics, Vertebrate or Plant Physiology, etc. These courses tend to consist of both lecture and lab sections, generally are for 4-5 credit hours, and are taught to large groups -- often with more than 100 students. The result is that the Biology Department tends to be highly "cost-effective." Furthermore, it is not until the students enter the senior year in the Marine Biology COA program that they take the greater portion of their program on COA learning package format. In the present cost-parity analysis, the mentor generates credit hours only when students enroll for COA learning packages. Hence, at the inception of the program when students are taking a large portion of conventional courses, mentor productivity in SCH generation is reduced. Nevertheless, in a fully implemented COA program and assuming normal progress, the approaching of cost parity in Biology is feasible since one FTE mentor would be required to supervise 25 full-time students. However, in reality, Biology majors are never able to arrange their programs so that they may devote full time to COA and still complete graduation requirements.

A conceptually appropriate alternative would be to compare the Marine Biology COA SCH/FTE ratio to a SCH/FTE ratio derived only for the non-generalist courses offered by the Biological Sciences Department. This alternative was rejected on the rationale that for the Biological Sciences Department, the purpose of the cost parity data is to estimate the costs associated with offering a specialized

TABLE 4. Cost Parity Levels, Academic Years 1974-75 (9 mo.) and 1975-76 (12 mo.)

Program	SCH/Faculty FTE (Conv.)[1]		SCH/Faculty FTE (COA)		Parity		#Student FTE/Faculty FTE[2]
	1st yr.	2nd yr.	1st yr.	2nd yr.	1st yr.	2nd yr.	
Biology	1,095	1,329	96	132	.09	.10	24.3
Nursing:							
Generic	480	627	464	637*	.97	1.02	10.6
RN Group			-NA-		-NA-	1.02	
Urban and Regional Planning	623	706	428	496	.69	.70	12.9

[1] In both COA and Conventional programs, SCH/Faculty FTE data reflect 9-month productivity for the 1st year and 12-month productivity for the 2nd year. Higher figures in 2nd year columns do not imply higher productivity. See text for discussion.

[2] 1 FTE student = 45 SCH/9 mo. at upper division, 48 SCH/9 mo. in UPL.

*Under 2nd yr. SCH/Faculty FTE (COA), results for generic and RN Nursing groups are identical. This is purely coincidental. The figures were generated independently from separate data bases.

curriculum in an area such as Marine Biology, if a COA-type program is implemented. The question is to offer or not to offer a specialized major. In the other programs, the question is "should COA be offered as an alternative method of studying in an existing major?" An unfortunate bias in the methodology of data collection should be noted. The number of student credit hours attained under both COA and conventional groups was based on number and weight of courses actually completed as of the end of Spring quarter in both years. Any "I's" (incompletes) carried by students as of that date were not counted. Of course this policy was followed in treating data from both conventional and COA groups, however, I's were far more prevalent in the time-variable program (COA) than in the conventional. No valid methodology has been developed to "measure" the stages of "completion" for incompletes.

'As an illustration' of the bias, consider the RN and generic group in Nursing; coincidentally, they have identical productivity factors (second yr. SCH/FTE). However at the end of Spring quarter 1976, students in the RN group were carrying a total of 79 hours of incompletes or "work in process" while the generic COA Nursing group carried none (all had finished the program and graduated). Thus the productivity of the generic group is an "artificial low." Furthermore, the productivity of the generic group is an "artificial high" since all incompletes carried over from the first year and completed in the second year were credited entirely to "second year productivity."

Interpretation of cost-parity data. The formative data suggest both encouraging and discouraging implications. Clearly there is an indication that in the long run an attainment-based, time-variable instructional program can exist with cost-effective use of instructional personnel and educational technology. When compared with conventional classroom programs, where classes have 20 to 30 students, the COA-type program promises excellent output.

On the other hand, it is very unlikely that such a program could compete quantitatively with "lecture hall" programs (with 100 students or more) where economies of scale operate to the advantage of conventional methods. If quantitative measures alone are employed to gauge the performance of attainment-based, time-variable vs. "lecture hall" programs, the former would seem doomed.

Manpower Utilization Study

In order to facilitate cost projections of attainment-based, time-variable programs for the future, it was necessary to investigate the nature of the manpower input in the existing program. In an effort to determine what functions the mentor's job consists of, and with whom these functions are performed, several attempts at data collection concerning mentor activities were made. Initially, a log sheet was sent to each mentor asking him to keep careful account of the time he spent in COA related activities. The log sheet proved to be impractical to administer. Some mentors considered the completion of the log burdensome, time-consuming and inaccurate. At least one mentor viewed the log itself as an invasion of his privacy by asking him, in effect, to account for each hour of the working day. In addition, it was thought that the data, even if it could be collected, would be invalidated by the possibility of "padding" to show what was thought to be an appropriate number of hours spent "on the job."

After considering several alternatives, a Function - Interaction Survey was developed. The survey asked the questions: "What do you do?" "With whom do you do it?" and, "What proportions of your time are spent engaged in these activities?" Rather than asking a mentor how many hours were spent performing given functions or interacting with given groups, it was thought that more valid data would be derived if they were asked to estimate what proportions of their working time were spent in these functions and with these groups.

Methodology

First, fourteen discreet functions (falling within the areas of curriculum development, instruction, evaluation, counseling and administration) were defined. Then seven interaction groups were enumerated with whom the mentor might perform these functions, i.e., students, faculty collegues, CED and other university staff, jury members, clerical staff, independent, and graduate assistants.

Mentors were asked to assign a percentage factor to each interaction group to represent the proportion of his/her time spent with that group performing activities related to the COA program (totaling 100%). Mentors were subsequently asked to apportion the time spent in performing each of the fourteen functions with each group (all alternatives totaled 100% for each group).

A function – interaction factor was then derived by multiplying the percentage of time spent in interacting with a given group by the percentage of time spent performing a given function while interacting with that group. Ninety-eight function – interaction factors were derived to fill a 98 block matrix grid (14 x 7 = 98). EXAMPLE: On the first page of the survey, a mentor states that 20 percent of his time is spent interacting with his clerical staff. Then on the appropriate page, he indicates that of the time spent working with his clerical staff, 15 percent is involved with revision of learning packages (one of 14 functions). Thus, three percent of his time (.20 x .15 = .03) is spent revising learning packages while interacting with clerical staff.

Specific function – interaction totals were taken by adding the seven blocks relating to that function. Thus, the matrix shows what portions of the mentor's time is spent (in total) performing each of the 14 functions, as well as within specific group interactions. Though the process of generating grid factors for the matrix was laborious and time-consuming, the mentors spent only about ten minutes completing the surveys, which were generally returned promptly and accurately

completed.

The survey was administered three times during each year, at the end of the Fall, Winter and Spring quarters. Averages over the three terms and trends in functions and interactions were noted in each program.

Results and Interpretations

Table 5 on the following page indicates the proportions of time by the mentor spent performing the five general functional areas in each program. These areas are further divided into the initial sub-functions enumerated in the survey, rounded to the nearest per cent. Results and interpretations of the survey pertaining to mentor time spent in each functional area are presented separately by program.

Biology

In the first year Professor Collier reported that he spent, on the average, about 33% of his time in curriculum development. To a great extent, his time was spent in interacting with students and using their feedback to develop and revise learning packages. The data also indicated a diminishing trend of the proportionate time spent in three functions defined as instruction (29% in Fall; 24.6% in Winter; and 16.7% in Spring). This trend suggests either that he encountered some degree of success in making the learning packages more self-instructional, or that the students developed greater independent learning skills.

In the second year, a considerably smaller proportion of time was spent in the curriculum development area, in spite of the fact that new learning packages (as yet untried) had been developed. The proportions of time spent in instruction, evaluation, and counseling have not changed appreciably, but the tasks of "administration" assumed a much increased proportion of Professor Collier's time. Those areas in administration accounting for the increase were "establishing and reviewing jury procedures" and "organizing jury sessions."

TABLE 5. Proportions of Mentor Time Spent in
COA Activities by Functional Area

Function	Biology		Nursing		UPL	
	1st yr	2nd yr	1st yr	2nd yr	1st yr	2nd yr
Curriculum Development	35%	19%	49%	29%	33%	22%
1. Learning Package Development	(.38)	(.03)	(.37)	(.13)	(.21)	(.26)
2. Learning Package Revision	(.06)	(.38)	(.54)	(.35)	(.63)	(.39)
3. Learning Strategy Development	(.56)	(.59)	(.09)	(.52)	(.16)	(.35)
Instruction	23%	.27%	18%	25%	24%	.21%
1. Remedial Instruction	(.13)	(.12)	(.40)	(.28)	(.35)	(.18)
2. Learning Package Instruction	(.70)	(.74)	(.36)	(.34)	(.45)	(.61)
3. Supplementary Instruction	(.17)	(.14)	(.24)	(.36)	(.20)	(.21)
Evaluation	24%	.35%	12%	25%	16%	18%
1. Student Evaluation--measurement	(.75)	(.58)	(.63)	(.63)	(.59)	(.57)
2. Program Evaluation	(.25)	(.42)	(.37)	(.37)	(.41)	(.43)
Counseling	5%	6%	1%	3%	7%	6%
1. Career Counseling	(.29)	(.61)	(.86)	(.77)	(.58)	(.42)
2. Personal Counseling	(.71)	(.39)	(.15)	(.29)	(.14)	(.24)
Administration	13%	13%	20%	18%	20%	33%
1. Misc. Administrative Activities	(.69)	(.61)	(.86)	(.77)	(.58)	(.42)
2. Test Construction	(.02)	(.06)	(.12)	(.19)	(.16)	(.08)
3. Establish/Review Jury Procedures	(.13)	(.14)	(.01)	(.02)	(.10)	(.18)
4. Organizing Jury Sessions	(.08)	(.10)	(.01)	(.02)	(.16)	(.22)
5. Other	(.08)	(.09)	(-0-)	(-0-)	(-0-)	(-0-)
TOTAL	100%	100%	100%	100%	100%	100%

Interpretation

Nursing. In the Nursing program's first year there appeared to be a slight decrease over the year in the proportionate time spent in instruction (26% in Fall to 22% in Spring). The Nursing mentor showed a greater proportion of time spent in student performance evaluation: 17.3% in Nursing; 7.3% in UPL; and 9.4% in Biology. The obvious discrepancies in the Nursing program may be accounted for on the basis that skills learned in Nursing require greater supervision and more time spent in observing performances. In addition, the Nursing program has included formative evaluation by the mentor as an integral process in learning packages.

In the second year, there was a change in mentor, and during the first quarter the "instruction" function assumed a major proportion of Dr. Belcher's time (49%). That proportion tapered off rapidly to 19% and 11% in the two subsequent quarters. This rapid and dramatic change was apparently the result of two factors: Dr. Belcher's "generic students" began to graduate in the Winter quarter and were replaced with "RN students" requiring less direct instruction, and with experience Dr. Belcher was able to encourage students to become more self-directed. Over the year, an average of 26% of the mentor's time was spent in instructional activities. As "instruction" function diminished in importance, the "evaluation" activities grew -- obviously a factor of students completing their programs and the mentor having completed the development of learning packages.

UPL. During the first year of implementation, the UPL mentor spent what was thought to be an unusually large proportion of his time in the tasks of Curriculum Development (49% as opposed to 35% and 33% in Nursing and Biology, respectively). Simultaneously, somewhat lower proportions of time were spent in instruction and evaluation functions as were experienced in the other programs.

The second year brought about a reduced emphasis on curriculum development and corresponding increases in instruction and evaluation. A similar intra-year

trend was also noted, with curriculum development moving from 42% in the Fall quarter to 19% in the Spring; evaluation from 21% in the Fall to 34% in the Spring. Instruction remained fairly constant throughout the year.

The main observation that can be made of all three programs is that the curriculum-development function decreased from the first to second year, while the evaluation function increased in its proportion to other functions.

The functional area of "instruction" warrants more specific treatment of its three sub-functions: "remedial instruction," (academic material requisite to the effective use of learning packages); "learning package instruction," (academic material directly associated with learning packages and the attainment of specific competencies); and "additional instruction," (material relevant to the profession but beyond the scope of learning packages and not requisite to the attainment of competencies). The results pertaining to these subfunctions, from Table 5 are repeated in Table 6.

TABLE 6. Percent of Time Spent in Three Instructional Functions by Program Area

	BIO		Nursing		UPL	
	1st yr	2nd yr	1st yr	2nd yr	1st yr	2nd yr
Remedial instruction	(13%)	(12%)	(40%)	(28%)	(35%)	(18%)
Learning package instruction	(70%)	(74%)	(36%)	(34%)	(45%)	(61%)
Additional instruction	(17%)	(14%)	(24%)	(36%)	(20%)	(21%)

The first year data on instructional functions suggests either that the learning packages in the Nursing program were more precisely developed than those in the other programs or, perhaps, that discussion of academic material not relevant to particular learning packages was not encouraged. In general, the distribution of instructional functions in the Nursing program corresponded closely to what was anticipated. On the other hand, the distributions in the Biology and UPL programs

were surprising, especially regarding the relatively high proportion of time spent in remedial instruction. This suggests that the learning package developers presumed a higher degree of entry level knowledge than was experienced.

The second year saw some changes. In Nursing, there was no shift in the allocation of time spent among remedial, learning package and supplementary instruction from the first to the second year of implementation. There was a trend toward greater emphasis on learning package instruction in Biology due to the more careful screening of students who would have needed remedial instruction, and refinements in learning packages which now include learning activities more consistent with entry level skills.

To a certain extent, the UPL program exhibited the same general trend of reduced remedial instruction with the reallocation of effort directed toward supplementary instruction. Perhaps Ed McClure, the mentor, was able to use his time for integration and synthesis of material beyond what was outlined in the learning packages or, to add dimensions of knowledge not included in them. The time was freed for these activities by the use of more instructionally refined learning packages. The learning packages used in the first year in UPL required much mentor time to clarify the content and objectives of each package.

GOAL 4:   To Demonstrate and Investigate the Characteristics of the Curriculum
           of Attainments Learning Environment

Theory. The mentor-student relationship lies at the heart of the Curriculum
of Attainments learning environment. This learning environment is intended to be
more personalized, less competitive, and more individualized than the conventional
course-centered environment. The personal association with a mentor, together
with a coordinated curriculum with mastery standards, is intended to result in an
integrated fund of knowledge and skills. Students are not merely supposed to know
about something, but are also expected to apply what they have learned in spontaneous
problem-solving situations. The COA learning environment fosters this kind of
learning by separating the instructional function from both the certification func-
tion and much of the transmission of information. The information and knowledge
dissemination is primarily relegated to tutors. The mentor integrates these know-
ledge elements into wholes, while the juries certify that the generic outcomes
have been attained. In the conventional course-oriented construction, all three
roles are vested in the same person. Another key ingredient in the environment is
the quantity and quality of students interactions among themselves. The COA
environment encourages an esprit de corps and cooperation among students, because
their performance is evaluated against an external standard, not vis a vis group
norm.

The mentor role. Since the processes of instruction in the COA are designed
systematically to enable students to reach established outcomes, the mentor role
is essential for providing continuity for the total program. Instructional
responsibility is much more easily delegated in the conventional course-oriented
program since the processes of instruction are not focused toward explicitly
defined and measured outcomes.

The mentor role in the COA is envisioned to possess characteristics similar to the role of the teacher as described by Rousseau in _Emile_. The mentor is a facilitator in the process of assimilating and integrating knowledge (whether it was gained formally or informally). The mentor does not spend much time telling or disseminating information. What information is conveyed by the mentor is that which is required to "fill in a mosaic" with missing elements of knowledge required for the demonstration of generic attainments. The mentor is a guide who leads the student in locating the learning resources appropriate for an individual to master the attainments. Since the demonstration of attainment requires the spontaneous integration of skills and knowledge before a jury, the mentor helps students prepare for the jury exams. Mentors often relate in personal ways to students by counseling them when they wish to discuss personal problems or career goals. Evidence of this closeness of the mentor-student relationship is that mentors are often invited to attend weddings or to dinner by parents of their students. Students relate to mentors in different ways. To some students, mentors are paternal figures, to others they become colleagues, and to others, sib lings depending on the characteristics of the mentor and the needs of the student.

Tutor role. The tutor is viewed as a vital instructional resource in the COA. Since the mentor is not the sole source of wisdom and knowledge, the tutor complements the mentor role by helping students master basic intellectual content and fundamental skills of the discipline. Association with tutors also provides a diversity of opinion needed for a liberal education. Students occasionally form close relationships with tutors, but not as often as with mentors. Tutor association with students tend to be less personal. Often students receive instruction from tutors in groups of varying sizes with varying degrees of structure and organization. They are not as accessible to students as mentors are. They are most often specialists in their disciplines and are expected to help students

master a special knowledge base or unique skills that are the foundations of

attainment. The mentor then helps students integrate knowledge and skills derived

from tutorials or other informal ad hoc learning experiences for the demonstration

of attainment.

The jury role. The jury certifies that students have demonstrated the required

generic level attainments. As stated in Goal 1, an attainment is a global skill

or knowledge area that results from the synthesis and integration of more elemental

skills and knowledge. The jury is not only interested in whether the students

have mastered the elements, but more importantly in how the elements are integrated

and applied in spontaneous problem-solving situations. The philosophy of the COA

holds that knowledge or skills are of no use until they can be applied to real

life situations (which may not only occur in a job situation, but in other important

life situations as well).

The student role. The role of the student in the COA requires that students

assume responsibility for their own learning. The student is expected to impose

structure on his/her time, to set short term learning goals, to find needed learning

resources with the help of the mentor to master attainments, to demonstrate initia-

tive in seeking assistance from faculty and other students, to be able to evaluate

their own progress toward reaching attainments, and to help other students who

request assistance. In short, the students are expected to be mature individuals.

The conventional game of "psyching out" the professor for the Friday's quiz is no

longer appropriate. (To some students, the absence of this game is very unsettling.)

Students sometimes become frustrated in the COA because their counterparts in the

conventional program appear not to work as hard since the professor provides a

service of obtaining knowledge and synthesizing it for them. COA students are

expected to do much, if not all, of the "digging" for themselves. Students have

sometimes remarked that they are getting better educations -- but they also have

to work for it.

Because the standard for mastery is external to the group, students do not compete with each other in terms of who receives A's, B's, C's, etc. There appears, however, to be a subtle, culture reinforced, competition among students related to the rate of progress in meeting attainments. This form of competition appears to be healthy in the respect that one doesn't "rise" at the expense of another.

Peer instruction is also expected to be an aspect of the COA learning environment. Since the emphasis is on demonstrating the criterion performance standards before juries, the likelihood of peers helping one another with instruction, both formal and non-formal, should result. Peer tutorials can be used not only to economize on the use of faculty tutors, but also to foster learning. The old adage often applies — one really doesn't learn the material until one teaches it.

In order to investigate these four basic but different roles in the COA learning environment, the Transaction – Interaction Survey (see Appendix 7 pages 187 through 198) was developed to analyze the kinds of interactions that occur among students and the three authority roles; mentor, tutors, and jury members. Student-mentor transactions were further investigated by the administration of the Student-Mentor Frequency of Interactions Survey and the Student-Student Frequency of Interactions Survey to determine the frequency of different kinds of interaction among the roles. Empirical data was secured from the Nursing and Biology programs since these were the more mature programs and had the highest rate of return. Nevertheless, the important characteristics of the COA learning environment could be investigated from these programs.

Mentor-student interactions. Items related to mentor-student transactions are listed in Appendix 7, pages 194 – 195, items 11-23 and #39. The results may be summarized as follows: Students are almost always or often able to communicate with the mentor (#11); mentors often to seldom initiate social events not part of normal teaching duties (#12, 13); mentors often or almost always focus on the intellectual interest of students in discussions (#14); they do much listening and

seldom dominate discussions (#15, 16, 20); the mentors are often to almost always available when students wish to see them (#17); they have warm and understanding personalities (#18); mentors often or almost always participate in informal discussions with students (#19); they are often or almost always open to criticism (#21); and they are often or almost always encouraging to students.

The results of the Student-Mentor Frequency of Interactions Survey, Appendix 7, pages 194-197, indicate that in both the Nursing and Biology programs, the most frequent interactions relate to discussing the material or assignments associated with the mastering of skills and content of learning packages. The second, third and fourth frequencies in Biology relate to the discussion of career possibilities, discussions of individual intellectual interests, and the discussion of research projects or term papers, respectively. The second, third and fourth most frequent interactions in the Nursing programs were as follows: schedule tests, turn in papers and books, and discuss a past exam or an upcoming exam.

Interpretation. From these results, one derives the difference in "climate" between the two programs. The environment in the Biology program appears to be traditional and intellectual in orientation, while the Nursing program reflects a professional emphasis by the orderly progression toward the mastering of attainments. The Nursing program has much more formative testing than does the Biology program. The Nursing program is much more structured than the Biology program with more specific and detailed tasks outlined for the students. An example of learning packages in Biology and Nursing in Appendix ♦ are provided for the reader to note the differences in the specificity outlined for students' learning activities. Furthermore, since students in the Biology program have less well-defined vocational goals, more time is devoted by the mentor in discussing careers than in Nursing (Biology mean rank = 4.3, Nursing m = 9.0 out of a total of eleven items).

Both Anne Belcher of the generic Nursing program and Al Collier in Biology are truly superlative mentors in their respective disciplines. Students were informed that their responses would be held in strictest confidence and that anonymity would be assured. Thus it is likely that the results of the question-naire are not biased due to fear of censure or reprisal. This author's own personal observations verify these highly favorable outcomes. When one visits students in these programs, one quickly observes the enthusiasm shown by students in the program (although the "Hawthorne effect" is undoubtedly present). However, the method of instruction cannot be separated from the personalities. One can only offer an hypothesis that the COA provides an environment where individuals like Anne Belcher or Al Collier who are naturally facilitative and nurturant, could optimally employ their talents. Both of these mentors have revealed to me that they find the conventional mode of formal classroom instruction stifling not only for themselves, but for students as well. Just what percentage of the faculty would find the unstructured student-centered environment conducive to their per-sonalities is an interesting question. Anne Belcher and Al Collier are truly unusual faculty members in terms of mastery of their disciplines and in terms of possessing facilitative personalities.

Student-tutor interactions. Items related to the tutorial role are listed on pages 191, items 24-29. The results of students' responses suggest that tutors often or almost always allow students to express themselves (#24); have warm and understanding attitudes toward students (#26), and are primarily concerned with learning problems (#28). The tutors in the Nursing program are more prone to be included in the seldom category than tutors in the Biology program in the following items: tutors participate in informal conversations and discussions (#25); tutors involve themselves in events not part of the formal learning process; and are reassuring and commending to COA students.

<u>Interpretation.</u> The role of tutor appears to be generally less personal than that of the mentor. The quality of the student-tutor interactions appear to be more formalized and less personal in the Nursing program than in the Biology program. This may be accounted for on the basis that the student-tutor encounters in the Nursing program are given more formal structure and are more organized than in Biology. Tutorials in the Nursing program are arranged at specific times for students and include topics that are more narrowly focused. Tutorials in Biology are often issue oriented and less focused on mastering specific attainments. Furthermore, in the Biology program, students must often seek their own tutorial assistance from professors on an individual basis and hence are more likely to select more friendly instructors.

<u>Jury-student interactions.</u> Items related to juries are located on page 192 of Appendix 7, items 30-36. The results suggest that juries are often to seldom reassuring to COA students (#30); often to seldom neutral (#31); seldom to never participate with students outside of the formal learning enterprise (#32); seldom participate in informal conversations with students (#33); often have a warm and understanding attitude toward students (#35); and are often concerned with learning problems (#36).

<u>Interpretation.</u> The primary function of the jury is to certify that attainments have been demonstrated. Needless to say, a jury exam before 3-5 professionals can be an intimidating prospect for undergraduate students. Thus a deliberate attempt was made to conduct the exams in such a way as to be as minimally threatening as possible to increase the probability of a maximum performance from students at the time of the jury exam. The juries try to be patient and understanding with students and attempt to be as personable as the situation allows. However, since many of the students do not meet the jury members until the time of the jury, there is often little opportunity to establish familiarity with jury members.

Student attitudes toward the jury in the Nursing program appeared to be more formal than the Biology students toward their juries. This may be due to differences in the way juries are conducted. The Nursing jury convenes to certify attainment at the terminus of the program and thus there may be more pressure on students than in the Biology program where students meet with juries as they complete each major learning package. Another factor in accounting for the higher degree of informality of jury reviews in Biology is that Al Collier, mentor, seeks jury members who are close colleagues, and he himself attends the jury reviews. Thus a "club" atmosphere is engendered. In the Nursing program, the mentor is not allowed to attend jury reviews thus separating completely instruction from certification.

Student-student transactions. Items 1-10 on pages 187 - 188 of Appendix 7 concern the nature of student-student interaction. The results of student responses to the questionnaire indicate that students: often to almost always communicate with other COA students during and after school hours (#1); seldom to often communicate with other COA students about personal problems (#2); often have warm and friendly attitudes towards each other (#3); often discuss content and assignments of learning packages with each other (#4); seldom to never compete with other COA students (#5); often participate in informal conversations and discussions (#6); often (in Biology and often to seldom in Nursing) obtain useful information and ideas from each other (#8); often to seldom participate in activities with each other that are not part of the formal learning (#7); often teach each other when they interact (#9), (but less so in the Nursing program); and often to seldom seek the help of other COA students when having a problem with learning packages or assignments (#10).

The results of the Student-Student Frequency of Interactions Survey, pages 196 - 197, indicated that the most frequent interaction of both the Biology and Nursing groups concerned content of learning packages. The second, third and fourth most frequent interactions in the Biology program were in discussing intellectual

interests, discussing research projects, and tutoring other COA students who need help. The same second, third and fourth frequencies of interactions in the Nursing program were: discuss past exam or upcoming exam; discuss research or term project; and socialize informally. One of the least frequent interactions in the Nursing program was to tutor other COA students.

Interpretation. - One aspect of the program to consider in analyzing the results of the questionnaires is that the COA program in Nursing had 14 students who remained together as a group during the entire 5 quarters of the program. The Biology program had more of an inflow-outflow phenomenon, where at any one time there were neophytes as well as more experienced students. The desired characteristic of peer teaching in the COA learning environment appears to take place when there is a mix of lesser experienced with more experienced students as would occur in a steady state inflow-outflow system. Experienced students are able to lend much assistance in the instructional process, thus relieving not only the mentor, but ostensibly tutors as well from instructional burdens. It may be that maximum efficiency in terms of manpower required per attainment is attained only when the steady inflow-outflow of students in a program is attained.

Conclusion. The results of the questionnaires do appear to indicate that in both the Biology and Nursing programs a personalized and less competitive environment was attained. In both programs, the roles of mentor, tutor and juror were demonstrated. The role of peer teacher was demonstrated to a much greater extent in Biology than in Nursing because of the nature of the steady inflow-outflow of students in the program. Professor Collier admits about 5-10 students per quarter to the program, thus creating a mix of inexperienced and experienced students. A factor in this consideration is that Al Collier, mentor in Biology, formally organizes peer instruction tutorials. Peer instruction occurs more informally in the Nursing program.

Neither program has become the <u>sine qua non</u> of individualization (i.e., each student had his/her own prescribed learning tasks that were best suited for him/her). The students by and large all take part in the same educational processes. Had there been a more complete return of the questionnaires from the RN Nursing program, perhaps individualization would have been demonstrated to a greater extent since these students would have a greater diversity of experience and learning styles. Conformity of educational processes appears to more likely occur in a naive student population than with a more experienced student group. One may speculate that this is so because the naive students begin with relatively the same entry level characteristics in terms of skills and knowledge.

GOAL 5: To Establish a more Direct Relationship between the Curriculum and the World of Work

The cry for relevance, while a cause celebre in the late 1960's and early 70's, is still a prominent concern in the conceptualization of the Curriculum of Attainments. Relevance in the COA is achieved primarily through the inclusion of outside practicing professionals in the process of articulation of attainments required for the certification of programmatic outcomes and as members of juries for the purpose of validating minimum performance levels required for entry into the labor market. The major functions of having an outside practicing professional serve on juries were to: 1) set limits on the unnecessary proliferation of irrelevant subject-content; 2) establish priorities for the attainment essential to skills or knowledge; 3) emphasize the need for application of knowledge or skills to work or real life situations; and 4) establish and maintain professional performance standards required for successful entry into the labor market.

As stated in the discussion of the previous goal on mastery standards, the only programs to use outside practicing professionals were Nursing, Biology and Music, even though external funds were provided from FIPSE for honoraria for six man days per year in AY 1976. Interestingly, external funds were used only in the case of one external juror in Marine Biology. All other jurors (about six) donated their time. The Nursing program will likely continue to use external jurors at least in an informal way since a great deal of cooperation is required from practicing professionals in instruction and supervision in local hospitals for the mastery of nursing skills. All other COA programs will probably forego the use of external jury members ostensibly because of the inconvenience in arranging jury sessions. There were times when the external assessor failed to "show up" for a jury review and the jury was subsequently cancelled, much to the consternation of the student, faculty members, and the mentor. A regulation was

adopted to allow faculty members to substitute for the practitioner when the faculty member could demonstrate a fairly extensive amount of practical experience in their work histories. When external jurors did convene, there were benefits noted from their participation--they added breadth to the assessment of attainment and they brought certain specialized knowledge areas to the jury review. However, the benefits of having an external reviewer tended not to outweigh the difficulties. Among the problems noted were inflexibility in the demonstration of procedures of knowledge; standards markedly discrepant from faculty members; lack of academic knowledge of the content; no shows; and ultimately, costs related to having the external assessor evaluate attainment. Even though external jurors were willing to contribute time and effort without remuneration, the donation of in-kind services cannot be relied on for consistent participation. In the final analysis, no matter how desirable it is conceptually to have external assessors serve on juries, the institution (i.e., administrators and faculty) must stand behind the policy of incorporating them in jury reviews and enforce it.

An even greater problem in the conduct of the COA in the long run is that the likelihood of administrators and faculty enforcing jury reviews of attainments with or without the incorporation of an external evaluator appears to be rather small. There does not appear to be a very intense concern for the assessment of programmatic outcomes at FSU. This author envisions that the certification function will eventually by default fall back to the responsibility of the mentor, thus causing the COA to lose one of its unique aspects.

GOAL 6: TO DEMONSTRATE A STRATEGY FOR CURRICULUM REFORM IN MASS HIGHER EDUCATION

The Strategy

The strategy for the eventual large scale adoption of attainment-based education at FSU was that the project would begin with a few programs planning and implementing small pilot attainment-based curricula. Then, upon evaluation of their effectiveness and with appropriate revisions, the programs would expand in terms of numbers of students and faculty mentors until an entire department would adopt attainment-based education as its method of instruction and certification. In the meanwhile, the initial prototype programs would serve as models for the development of subsequent programs borrowing on the knowledge and experience of the prototypes. Through the implement one/teach-one progression, a sizeable portion of academic programs at FSU would have instituted COA programs with large numbers of faculty and students.

During the expansion of major field programs, the general education program would also be designed and offered on an attainment-based format. Eventually a student could fulfill all the requirements for a college degree by progressing from one attainment-based program to another in series or in parallel. Ultimately, the global attainments demarking the desired outcomes of a complete college education would evolve from a synthesis of individual programmatic generic attainments. Thus a student could one day conceivably achieve a college degree by demonstrating the required degree attainments before faculty juries through direct assessment. Upon achieving this state, the COA project will be completed.

What is the progress toward this long term objective?

STAGE I PROGRAMS

Biology

The Biology program, at the close of the 1975-76 academic year, had approximately 25 students actively participating. The program has not expanded beyond the

83

aegis of Dr. Collier even though efforts have been made to expand the program within the Department by Dr. Collier and Dr. Peter Bennett, the outgoing department chairman. Dr. Bennett will assume the position of President of the Philadelphia Academy of Natural Sciences in September 1976. This coming January, Dr. Collier will formally retire from FSU as an active instructor, although he has been given permission to remain with FSU as a COA consultant and to serve as advisor to his graduate students so that they may complete their dissertations.

The incoming department chairman has not yet actively recruited a faculty member to replace Professor Collier. Dr. Bennett has indicated that a couple of faculty members have shown interest in performing in the COA mentor role, but unfortunately, they are not experts in applied Marine Biology. They would be required to develop an entirely new program -- without the resources that were invested in the COA Marine Biology program. Because the program was developed in such a specialized area of knowledge and skill, its inheritability by another faculty member in the department presents a difficulty given the present characteristics of the staff. The department would be required to hire a replacement for Professor Collier with similar background and skills, but this too, is uncertain since faculty lines are not being replaced in the current era of austerity in the State of Florida. Secondly, if a state line was released to the Biology department, the faculty may not consent to having the line filled with someone with Professor Collier's expertise (specialty in Marine Biology) to perform as a mentor in the established COA program. An impression held by the author is that the faculty would most likely perfer hiring someone with more interest in basic research. However, the Provost for Arts and Sciences, Dr. Robert Spivey, has informed the new department chairman that he would support the continuation of the COA program in Biological Sciences if the faculty members wish.

The probability of the COA program in Biology surviving in its present form after Professor Collier leaves is remote. Student demand for the program is

sufficient to keep the present program viable. But, students volunteer for the COA program in Marine Biology primarily because of Professor Collier's reputation as an instructor and because they will benefit from the program's reputation for high academic standards. Perhaps, when Professor Collier leaves FSU, students will not be attracted to the COA program with a new mentor.

Nursing

The School of Nursing was the "star pupil" at the outset of the project and remains such at its completion. In the second year of operation, the generic COA Nursing program was allowed to expire (i.e., generic students are those matriculating without prior nursing training), and the program was shifted in the second year of operation to include only the RN group (those students matriculating with RN certificates earned from the two-year terminal programs at junior college level). There are currently 26 students in the RN Nursing group with two full-time mentors.

The COA is an extremely appropriate instructional methodology for this program, since the evaluation procedures allow students to demonstrate prior knowledge and skills without having to repeat the same instruction they encountered in junior college. It also allows students to hold part-time professional level jobs while going to school. Many of the students are adults who need to work in order to support themselves (see Table 3, page 43). Since they already hold RN certificates, they readily find employment in the community health agencies and institutions. There exists in this program the critical combination of an obvious need for the program as perceived by students, a competent and motivated contingent of faculty members to mentor, tutor, develop materials and evaluate students, and a Dean who supports the program.

The only major disappointment is that the program will not be offered as an alternative to the conventional system for generic students, even though it has shown merit for both highly motivated students and for disadvantaged students.

Results of the NLN basic Nursing skills test revealed that the mean scores earned by the COA generic group exceeded the mean scores of the conventional group by 15 percentile points. By mixing both the generic students with the RN's, peer tutorials become an obvious possibility for research on new methods of instruction in the field of Nursing.

Even though the COA RN program has been advertised only by word of mouth, there are more applications by RNs interested in the program than may be accommodated. The most efficient use of manpower resources, in terms of the taxpayer's point of view, would be to have the entire School of Nursing convert to the COA approach and to train RNs in advanced nursing skills while relegating the instruction of generic students in basic nursing to community colleges. However, the faculty members of FSU's School of Nursing view this prospect with less than relish. The RN group has, however, compelled the school to examine standards for the baccalaureate and to examine whether the B.S. degree in Nursing is merely two lower division programs linked together (general education and basic nursing skills). The RN students were cautious about the existence of a double standard. Fortunately, the juries certifying outcome-attainments in the generic program were conducted prior to the time RN students were ready for jury review. As a result, standards for the B.S. were established for the generic program and are subsequently applied to the RN program. It is probable that the COA program in the School of Nursing will continue as long as RNs are admitted.

Urban and Regional Planning

The COA program in Urban and Regional Planning, if it continues this Fall, will remain small with only about 10% of the departmental enrollment engaged in COA -- about 10-15 students. Last year the number of student volunteers fell below the "critical mass" needed to sustain a viable program. This author believes that in order to maintain student enthusiasm and an esprit de corps, at least a dozen students are required. There were only six new resident student volunteers

who matriculated in the program in the second year of operation. There were two additional non-resident student volunteers. A less than aggressive public relations campaign and considerable discouragement, provided by disappointed first year students, dampened faculty interest in the program. The first year students were extremely frustrated by the program's inability to meet their expectations. The program had over-estimated what it could actually deliver in terms of facilitating acceleration and having well-developed instructional materials.

The mentor, Ed McClure, has an exacerbating condition of arthritis and does not appear to have the state of health required to cope with the physical and emotional demands the COA program places on the mentor. Last Spring, the Dean of Social Sciences chose not to transmit a proposal to FIPSE by the Urban and Regional Planning Department to secure resources to place the entire incoming masters class, in a COA format. This project would have tested whether an entire department could function in an attainment-based mode of instruction. The Dean declined to allow the project to even be considered for implementation because he felt that not enough data had been secured to document the effectiveness of COA and that support for this effort would be required by a permanent department chairman (there was, and still is, only an acting chairman). The decision by the Dean appeared to "take the wind out of the sails" of the program. Discouragement and depression soon set in. To this author's knowledge, no significant public relations campaign has been undertaken this Summer to recruit new students for the program next Fall.

In spite of the fact that the second year of implementation went smoothly and without incident, the program appeared never to quite recover from the setbacks in the first year of implementation. During the first year the students were frustrated over unmet expectations. Faculty resented the program not only for pirating the best and brightest students for the COA program, but for causing some of the courses to be cancelled because of insufficient enrollment (My course would have been offered if it were not for the COA!). The program, instead of becoming an exciting educational venture, became a hassle that almost everyone could do without.

Stage II Programs

These programs were founded on extremely scarce resources--generally a part-time released time faculty member and a graduate assistant. External funds supported only graduate assistant help (20 hrs./wk and minimal expense monies, $300 per program) and six man days of honorarium for outside practicing professionals to serve as consultants or as jurors.

Music Education

This program was the most successful venture in the four second stage programs. The program had 17 students at the end of the Spring quarter. A complete 25 credit hour program was implemented with mentor, students, juries and learning packages. The program was fortunate to have two very talented graduate students to help develop the materials and to participate in the tutorial process. It pivots primarily on the talent and personality of the mentor, Mr. Wes Collins. The School of Music prides itself on advancing knowledge in the instructing of music and the COA project enhances this thrust. Nevertheless, the School of Music has not given an indication of extending its commitment to attainment-based education; given the present cutback in resources for faculty allocated to the school. In all likelihood, this program would continue to grow with the infusion of more external funds.

Interestingly, only the Music Education segment of the Music School's curriculum was allowed to be placed on attainment-based format by dint of the position taken by the school's curriculum committee. The performance area, the curricular area of highest prestige, is strictly relegated to the time-fixed approach. This is because many students wish to come to FSU to study under a master musician for a guaranteed length of time--not to demonstrate minimum level of mastery and move on. Secondly, the philosophy in the performance curriculum is to encourage the students to excel as far as ability, talent, and financial resources will allow-- not to achieve and to be satisfied with a minimum standard.

This program will likely survive as long as the mentor, Wes Collins, wishes to continue to instruct in the manner of a mentor. As of yet, other faculty members have not indicated that they wish to become involved in the COA program, but they are at least willing to serve as jurors (there is a long history of jury assessment in the School of Music). Perhaps the program was developed too much in isolation so that it became regarded as Wes Collins' program. The more likely explanation is that capable and willing mentors are the most precious resource in attainment-based education. The students, faculty, and outside practicing professional jurors are all pleased with the program. However, Wes asks himself, "Is the added burden and effort required of a mentor in the COA worth the effort in relation to rewards?" Rewards are, by and large, intangible--an occasional thank you by an appreciative student.

An anecdotal aside revealed to the author by Wes Collins was that a group of conventional students, who happened to be roommates of the COA students, went on their own volition to the Dean of the School of Music and demanded that the COA approach be offered on a wider scale and that it become more accessible to more students. Another is that a local high school band director, who served as the outside practicing professional on the Music Education juries, said that he definitely wanted his son to enter FSU's School of Music and become a COA student under Wes Collins.

Theatre

The School of Theatre program addressed an instructional need similar to that of the School of Music. The COA provides a more flexible-instructional method where students with significant responsibilities in the performance area could adjust the time and commitment devoted to their didactic work in relation to the demands of preparing for and performing in plays. Hopefully, the COA would provide a means whereby students could focus their energies on performances when "in season" and devote total concentration on their academics when there are no performance

demands. Two subcomponents of the Theatre program were placed on attainment-based format: World Theatre History (15 credit hour block) and Costume Design (4 credit hour block).

The costuming segment was a fairly successful program with well-defined attainments, good instructional materials and adequate assessments. Students were able to progress at their own rate and responded well to the program. Success of the costume segment of the program can be attributed to two talented graduate students, Maria Jurglanis and Robin Findlay. A jury of faculty members reviewed the materials and tests for costuming, but held no formal jury review. The assessments, requiring the use of slides and tapes are being implemented next Fall in the Assessment Resource Center, a facility supported by funds from FIPSE, Al Oosterhof, project director. As an outgrowth of this program, the stage craft component of the Bachelor of Fine Arts program will begin the development of an attainment-based tract this coming Fall. With additional resources, the costume design and stage craft areas of the BFA program could become attainment-based instructional showcases. This past Spring 1976, Dr. Don Stowell gave a presentation of the COA approach in costuming in Prague, Czechoslovakia.

While the costuming segment of the Theatre program was successful, the Theatre History component verged on the order of a debacle. From the very start, the mentor, because of his health and years in traditional historical approaches in the teaching of history, found it difficult to grasp the notion of attainment as a way of describing learning outcomes from the study of Theatre History. It was difficult for this mentor to abandon the traditional chronological approach to the teaching of history and focus on broadly based learning outcomes. Nevertheless, ten attainments were identified and instructional materials were developed to help students attain them. The program did represent an incremental step in advance of the parallel conventional lecture sections covering the same content with the same materials. The major differences between the COA approach and the

conventional approach were that the former allowed students to put aside their academic pursuits when performance demands became too great and that they no longer were required to attend lectures (given by the COA mentor) and take quizzes. Eleven students volunteered for the COA Theatre History program in the Fall of 1975. Five students were able to complete the first five credit hours of the 15 credit hour block by June.

A common problem found particularly in both the Music Education and World Theatre History programs (but also apparent in other programs) is that students never do make up time lost due to putting work aside for other higher priority demands. Some students who fall too far behind become discouraged and disillusioned with the program and drop out. The only effective way of combatting this tendency and still maintain the concept of time-variable attainment is for mentors to adopt an approach similar to the one described by Glasser in Reality Therapy. In this approach the mentor helps students impose structure on their time by having them accountable for attaining those goals while accepting no excuses. Thus, a special kind of learning transpires from the time-variable approach to learning not typically found as an outcome of the time-structured conventional program. Students learn to structure their own time, set realistic learning goals and assume responsibility for their learning.

Due to exhaustion and personal problems, the mentor relinquished director- ship of the program in the Spring of 197. The COA program was then taken over by a graduate student, William Klapp, who had been assigned to help the mentor develop and implement the program. Fortunately, because of his unusual talent and commitment to the project, the COA program at least finished the year. Two jury sessions were held (actually they were formative validation juries) with two other Theatre historians in the school serving as jury members. The jury failed to accept the performance of the first student to appear, and immediately raised questions about the academic credibility of the program. An investigation was

subsequently held by members of the faculty. After an in-depth process of
interviewing students, materials, and personnel associated with the project
(including the author), the program was found to be inadequate in its approach
to enabling students to master Theatre History. The investigating committee
decided, with the approval of the Dean of the School of Theatre, to suspend the
p█████. The quality of the instructional processes, the curricular approach,
and the learning materials of the program were censured, not the COA concept.
The School of Theatre plans to resurrect the program a year from this coming
Fall (in Fall 1977) in American Theatre History under the leadership of a new
mentor. The focus of the new program will emphasize as an outcome, the capability
of doing history, not merely mastering a knowledge base of the chronology of
events. Evidently, and in all likelihood, the past mentor will continue to teach
in the conventional World Theatre History course as before, using the formative
objective tests and package materials developed in the COA program.

The School of Theatre has the potential of becoming a showcase of attainment-
based education with the infusion of external resources for development. There
is a basic interest among the faculty in the area of curriculum development and
instruction. Ironically, as in the School of Music, the performance segments of
their respective programs were deemed untouchable for th████████ experiment. However,
the School of Theatre has indicated that they would seriously consider placing
the performance aspect of the BFA program on an attainment basis. With sufficient
resources, the School of Theatre would likely attempt to establish an entire
attainment-based BFA program in spite of the early setbacks in the World Theatre
History program. One or more influential faculty members revealed that he sees
the potential of the COA approach even though the first effort failed. This
faculty member also happens to be the advisor of the doctoral student, William
Klapp, who inherited the COA program by default when the original mentor abdicated.

Mr. Klapp is researching new methodologies of instruction in the teaching of Theatre History as a topic for his doctoral dissertation, and he will use the COA approach in his experimental design.

In the School of Theatre, as in the School of Music, curriculum reform will always take second priority to the inexorable concentration on the production of stage plays. The latest play always takes precedence over the allocation of manpower and time to curriculum reform. Nevertheless, the COA program stands a small chance of continuing in the future should existing departmental priorities remain. There is a small but devoted contingent of faculty interested in continuing and in expanding the program. The availability of resources for subsequent development and the continuing commitment to the COA by the Dean are the crucial variables in determining the future of the Theatre program.

Religion

The COA program in Religion can best be described as a quality, non-traditional program in search for students. The program had, perhaps, the most talented planning mentor and graduate student assistant of any of the seven COA programs. They easily identified attainments and developed learning materials. This 4 credit program was designed to help students develop a systematic method of inquiry in the humanities. There are six content areas and the students work through each content area in similar ways. Five stages (or steps) were described by Professor Swain in his approach to give students the capacity to "understand" in the humanities. These steps were Orientation, the Primary Tradition, the Secondary Tradition, Integration, and Critical Appreciation. A paper was presented describing this method of inquiry at the 1976 AERA convention held in San Francisco.

Unfortunately, only four students volunteered for the program. Not one was what one would describe as a typical student. One could be described as off-beat, another as desiring to take an apparently easy second major on spare time,

and yet another was a veteran who was working many hours per week. An important consideration in reviewing this program is that there are presently only 25 students at FSU who are pursuing a major in Religion. Thus, the population pool from which to draw students is extremely small. As mentioned before, a critical mass of approximately 12 to 15 students required to create a critical mass of student participation to make the program viable would virtually decimate the formal courses comprising the major in the conventional program. Hence in order to make the program viable, a massive public relations campaign would be required to fill the program ostensibly with non-traditional students.

By the Spring quarter, none of the four students had completed one learning package. Furthermore, Bill Swain had been selected by the American Council on Education to participate in a visiting scholars program and will take a sabbatical leave for at least a year beginning this coming Fall, 1976. Finally, the Religion program at FSU, being one of the most scholarly departments, does not place as much value on curriculum development as in the more traditional scholarly activity. Dr. Swain applied for promotion to become a full professor this past year, but was not advanced by his department. Even if Dr. Swain were to be at FSU next year, one could speculate that he would prefer to invest his energies in more traditional scholarly activities than in non-traditional education. No colleagues have come forward in the department to take over and develop an innovative program using the materials developed by Dr. Swain and his graduate assistant. The department is committed mostly to continuing in its existing ways by functioning primarily in a service capacity by offering courses which satisfy the general education requirement. There appear to be just enough majors and graduate students to keep courses in the catalogue in the areas of special interest and expertise to the faculty.

The COA program in Religion will not be offered next year. In spite of this apparent failure, the program has meant much to the entire project as evidence

that attainment-based education could be designed and implemented in the area
of the humanities. As a result of the Department of Religion's involvement in
the project, a COA program may be developed in the humanities segment of the
general education program. Authorizations have been secured from appropriate
committees to develop such a program. The design and development of a general
education program in the humanities will begin pending the obtaining of external
funds. A proposal has been submitted to the National Endowment for the Humanities
to fund the project with Eugene Crook of the Department of English serving as
the planning mentor.

Psychology

The effort to establish a COA program in the Department of Psychology can
be described as more or less a token effort. The program was established in the
area of Counseling Psychology, and more specifically, in the area of behavioral
observation and interpersonal relationship skills. The program was an 8 quarter
hour sequence offered by Dr. Hal Korn, a clinical psychologist and formerly
director of the Counseling Center. Dr. Korn was released only 1/4 time to develop
and implement the project. The program had an enrollment of 12 students and some
interesting approaches to the development of human relationship skills were attempted.
He used a quasi-informal modular approach, but did not produce learning packages,
per se, nor did he attempt to articulate the outcomes of his program before he
began instruction. In a Saint Thomas Acquinas mode of thought, he let the outcomes
evolve as instruction progressed. To the author's knowledge, a jury was never
used. Thus the COA concept in Psychology was neither fully developed nor imple-
mented. Dr. Korn is presently teaching this summer in the FSU London program
overseas and will remain there until the Winter quarter, 1977. Since Dr. Korn
used the Directed Individual Study mechanism to enroll students, no COA packages
are even listed in the college catalogue.. The probability of reviving this program

when he returns to the Tallahassee campus is remote indeed. Curriculum design and instructional development are low priorities in a research oriented department struggling to break into the top 25 of ACE ratings among Psychology programs across the nation. Hal has received no encouragement, cooperation, or rewards for his efforts in the COA project by his colleagues.

New Programs for 1976

Two College of Education programs are presently in the planning phase to implement COA programs. The <u>Vocational-Technical Education</u> program planned to implement a program in Fall 1976 with 25 students. These students are preparing to become vocational teachers in trade and technical schools. They may be classified as "mature" students (non-18-22 year olds). The program is designed to emcompass 45 credit hours and will include both the didactic portion of the program as well as student teaching and internship. This program has gone about defining competencies in a careful, meticulous way. They have ample resources to design and implement this program--in fact, they have more funds to design and implement this one program than were available for all seven COA programs combined. They will also inherit most of their instructional materials from Ohio State University since FSU is designated as an implementation site in a national project funded by USOE. Unfortunately, the chairman of the department who secured FSU's participation, has recently assumed a position at Penn State. Just how this turnover will affect the program is of serious concern.[1]

Recreation and Leisure Studies will embark on their second year of development in Fall 1976 toward the eventual implementation of a 45 credit hour competency-based program. Their major intent is to modularize their program and to disseminate the learning modules they produce. Since this program too has its

---

[1] At the time this final report went to press, the author was informed that both the department chairman, who was the project director, and his chief assistant had assumed jobs elsewhere. The program is currently "tabled" until a faculty member can be recruited and hired to take over the program.

own external support, this author has little control of the development and implementation of the program. The Voc-Tech program has used this author's experience and expertise considerably and will continue to use the record management system developed in the COA program. Depending on whether the program is implemented, the Voc-Tech program at FSU may well serve as a model for competency-based education that will be adopted by the State of Florida Department of Education for statewide implementation.

New Programs in the Planning Phase

As mentioned previously, the Humanities segment of the general education requirement may develop a COA approach pending the awarding of external funds. In another project, the author is the project director for a statewide competency-based articulation project--the planning of which is supported by Carnegie Corporation. Six senior colleges and six community colleges are seeking to develop cooperative competency-based articulation programs in Architecture, Industrial Technology, Business, and General Education. The concept to be implemented is that the exit level competencies of the lower division work taken at community colleges become the entry level competencies of the upper division at senior colleges. Both Carnegie Corporation and Kellogg Foundation have indicated interest in the project. Through this project, many of the concepts implemented and tested in the COA program will be implemented on a statewide basis. This author is of the persuasion that a system cannot be changed without addressing the external forces influencing that system. The COA will not flower at FSU unless there are positive contributing forces acting from outside FSU. If enough schools in Florida become involved in competency-based education, these forces should have a reinforcing effect on the COA programs implemented at FSU. These statewide articulation programs and the Humanities program at FSU will adopt the pilot program strategy for implementation and experimentation previously described and currently being tested at FSU.

AN ADDENDUM TO GOAL 6:

Necessary (But Not Sufficient) Conditions
for the Successful Implementation of Attainment-based Education
Using the Pilot Program Strategy

The following underlying conditions cited as necessary for the successful deployment of pilot programs as a strategy for curriculum reform are based upon the observations and impressions of the author. In many cases, these postulates are neither derived from nor verified by the existence of empirical data. The reader must remember that these conditions operate in a context where COA programs at the outset, peacefully coexist with the conventional programs. Nevertheless, as an option to the conventional program, the COA draws student volunteers and instructional resources from it.

1. A perceived instructional need by both the faculty and students of a program. Attainment-based education will most likely prosper in departments and schools where it effectively addresses an unmet instructional need which can not be served by the conventional program. Metaphorically, students and faculty do not seem to want bigger or prettier mousetraps -- they seem to want mousetraps only when there are none available at all. For instance, the conventional program is totally inadequate in approach for RN students in the Nursing program. These students were totally frustrated at having to repeat much of the same content they encountered in their community college training. Hence the School of Nursing was left with essentially two choices: to abolish the program and ignore this group completely, or revise their approach to the curriculum. Attainment-based education does appear to effectively address this school's problem by providing a means for awarding credit for prior learning. In the Theatre program and Music Education program, the demand for student participation in plays, concerts, and musicals requires a more flexible instructional delivery system and a curriculum that emphasizes performance instead of exposure.

In other programs the need for an attainment-based program is much less apparent.

Arguments for the offering of a COA program, such as providing a meaningful curricular alternative, more personalized instruction, a more relevant occupation-ally-oriented curriculum, the opportunity for self-paced independent study, or even the challenge of high academic standards do not appear to be strong enough as sources of motivation to sustain student and faculty interest for a very long period of time. Furthermore, the conventional program is able to respond to such needs. Therefore programs founded on such "soft" motives as these, as in the case of Biology, Urban and Regional Planning (with the exception of external students), Psychology and obviously, Religion will eventually drop their alternative COA programs either because the conventional program was altered to address these needs or that need is really not strong enough to sustain student and faculty interest. (See the evaluation by the external evaluation committee Appended to the document which relates directly to this point).

2. Administrative support. Assuming a demonstrable instructional need for the program, the chief administrator must condone the existence of the program and must accord the program high priority status in the competition for available manpower and funds with other departmental interests. The chief administrator also in many cases has a significant influence on the reward structure for salaries and promotions. In most academic programs at FSU, the department chairman or Deans of Schools have direct control over funding allocations and heavily influence the faculty reward system. The chairman, the mentor and a small cadre of faculty must be in agreement regarding the merits of the program in order for the program to become established as a viable curricular option.

3. A competent faculty mentor to manage the program. Attainment-based education quickly exposes incompetence on the part of the faculty. A mentor must be a proficient scholar, an expert in the management of learning and deft in

human relations skills. One axiom that has been observed in the COA project as well as in other instructional design efforts, is that the quality of instructional material produced is a function of a faculty member's mastery of his/her discipline. When the faculty member's grasp of the subject content is weak from lack of research, inadequate training, or from intellectual decay, the materials produced lack essence and organization. A whole cluster of skills and personality characteristics seem to be associated with the competence of the mentor. As stated before, the most precious resource in establishing a COA program is finding an interested, talented, capable and affable mentor to lead the program. There may be only one faculty member in ten at FSU who is able to function adequately as a mentor. This fact, if true, has tremendous implications for the generalizability of attainment-based programs in mass higher education. Without a doubt, it's easier for most faculty members to function adequately in narrowly-focused, time-structured courses where the instructor determines the outcomes.

4. _An instructional development service._ An instructional development service can provide both the expertise in the systematic design of instruction as well as the coordinating function for the implementation of the program. A project director located in such a service is able to monitor the development of programs and to secure approval for exceptions to current rules and regulations which impede the valid implementation of attainment-based education. The instructional development service can also provide assistance for the production of mediated learning materials. Furthermore, by coordinating a number of programs together under one aegis, COA will become a much more potent force to be reckoned with when seeking authorizations by university-wide curriculum committees. One academic department would have extreme difficulty in exerting an impact on a university-wide committee to secure exceptions and authorizations required to implement a complete attainment-based program that is both time-variable and allows for

continuous progress toward attainment.

5. <u>Upper level administrative support</u>. In order to invoke required changes in records and registration procedures or in exceptions to certain university rules and regulations, the support of at least one high level central administrator is required. At the time of the design and planning stages of the COA project, the then Acting Vice President for Academic Affairs, Dr. Daisy Flory, worked with John Harris (then Director of DIRS) to formulate the initial position paper for the project. She is now Dean of Faculties and has continued to serve as an advocate for the program and has been an indispensible asset.

The allocation of funds to the programs for further development and institutionalization would also be a helpful asset. A fund set aside for the <u>ad hoc</u> purpose of curriculum design, and administered by the instructional development unit would provide not only financial resources, but also provide a symbolic demonstration that curriculum development is a priority mission.

6. <u>An internal legitimizing committee</u>. The COA Project Committee, with Dr. Joe Grosslight, chairman of the Psychology Department, serving as chairman, and composed of prestigious faculty members and administrators, helped to formulate and to support policies concerning the conduct of the project. This committee also assisted in the securing of authorizations from the Graduate and Undergraduate Policy Councils to conduct the experiment and selected the initial three programs to participate in the first stage of the project.

7. <u>Optimal external funding</u>. A critical balance is required between the amount of external and internal funds to conduct an innovative project and to institutionalize it. External funds not only provide resources to obtain manpower for the development of the programs, but just as importantly, they provide an external legitimizing function. Funds from FIPSE gave the program national exposure and placed it on the trade routes of educational tourists. Frequent observers gave the mentors a feeling that they were engaged in something important,

worthwhile, even though their colleagues may have acknowledged their work very little. At times, the tourist demands became a little onerous, but the positive effects of recognition far outweighed the inconvenience.

The COA programs were developed from approximately 50% external funds and 50% internal funds. The present author's feeling is that a certain amount of the costs to conduct a project should be borne by the institution, but in the case of some programs, the amount of external resources was insufficient -- especially in some of the Stage II programs. The Music Education program would have benefitted from more funds. However, for the most part, 50-50 cost-sharing appeared to be reasonable. It is unknown whether this same cost-sharing ratio would have been maintained with additional FIPSE funds. This 50-50 ratio of inside-outside funding quickly eliminates the entrepreneural uncommitted, yet provides sufficient extra resources to conduct a project for the committed programs. In retrospect, it would have been ideal to have external funds for the continued development of Stage II programs for the second year of implementation as did the three Stage I programs. Perhaps the Music Education program and the Theatre programs would have had a better opportunity to "take" and realize a more secure foothold. Three years of funding again appears to be reasonable for the development and implementation of two year programs. Any longer funding period would likely create and perpetuate a dependency on the external funding source to manage their programs.

8. Cooperation among faculty. In order to conduct an attainment-based program, faculty members in a department who are not mentors must be willing to help the mentor with tutoring, jury evaluation, and with the production of learning materials. Sometimes intradepartmental cooperation is a rare and unknown phenomenon. In an institution that rewards faculty for independent scholarship, together with faculty society's proclivity toward individual propriety of courses

and instructional materials, there appears to be little interest in inheriting the results of another faculty member's creative enterprise. Thus many of the programs will cease to exist when the original mentor moves on or adopts another interest. There is a critical time period when the original mentor must share responsibilities with other faculty members. Apparently, this sharing should take place early in the development and implementation of the program.

9. Instructional costs are less than the conventional program. An instructional innovation requires that it must demonstrate that academic standards are maintained while at the same time reducing instructional costs. Obviously, in order to conduct a comparative cost-effective analysis, one must first establish an outcome standard. This of course is impossible in light of the absence of outcome standards in the conventional programs. Students and faculty of conventional programs were either unwilling to submit to, or did not see the justification for bothering to engage in, a rigorous comparative analysis between the COA and the conventional tract (such as establishing a sample jury procedure for the conventional program). The only comparative data available to date is the results of the National League of Nursing (NLN) test of basic Nursing skills, a multiple choice test assessing a student's knowledge about a number of topics. The COA generic students earned scores 15 percentile points higher than the conventional students. The COA students were a representative sample of the population in terms of entry level skills in the same dimensions of the NLN test. At the same time, the COA program proved to operate more efficiently in terms of manpower required to facilitate the attained outcome level of performance. The program was still terminated.

The epitaph: "better is not always enough."

10. <u>A special physical facility</u>. The most successful COA programs all had one element in common: a special room for COA students to study or to socialize. The Nursing, Biology and Music programs all had special facilities. The Urban and Regional Planning program had a special COA room during the first year of implementation, but this facility was usurped by another department during the Summer between the first and second year. This event, without a doubt, contributed to the decline of <u>esprit de corps</u> among COA students and faculty in that program. Ideally a COA room should contain learning carrells, a library, lounge chairs, a coffee facility and a meeting table. In the Natural Sciences, it should also include a laboratory. However, the most important function of the COA room is to provide a meeting place and a symbol of pride both for the mentor and students in the program.

11. <u>Luck</u>. Who could predict that Ed McClure in Urban and Regional Planning would so suddenly contract such a severe case of arthritis? Who could have predicted that Peter Bennett, chairman of the Biological Sciences Department, would assume another job at a critical time in the institutionalization process? Who would predict that Bill Swain, the mentor in Religion, would be selected to be a visiting scholar for ACE? Who would have predicted that John Harris, principal advocate for the program, would leave so suddenly just as implementation of the programs began? Who would have predicted that Stan Marshall, President of FSU, would resign at a time the institutionalization process would begin? Who would have predicted three years ago that the State of Florida would incur such a shortage of tax dollars and that funds for higher education would be cut bare-thin, resulting in severe morale problems, not to mention funds for the development of innovative programs? Who would have predicted that both Shirley Martin, former Dean, and Pauline Haynes, the first mentor, would leave the School of Nursing after the first year of implementation? Who would have predicted that Robert Andreyka and Bill Blank of Vocational-Technical Education would both leave FSU

almost on the eve of the implementation of their programs?

The survival of the COA programs and hence the efficacy of the pilot project strategy for reform depends so much on the favorable turns of events in a capricious environment. Sometimes these unpredictable events stimulate a program to become even better, as in the case of Nursing where the "touch was passed on" before it became labeled as Pauline Haynes' COA program, but in other programs, these chance occurrences set back a struggling program even more. In no programs do these 11 necessary conditions attain an ideal state of affairs. Some program cope with certain deficiencies better than others. Some conditions are more vital than others for survival. Needless to say, a successful innovative program must overcome tremendous social forces which counteract against it.

A final note is that the pilot program strategy for curriculum reform was tested by employing the COA as an innovative entity which requires drastic changes in the conventional etiquette and structures even to implement the program. Perhaps this strategy of reform would be more successful in programs requiring a less significant change in the environment. Nevertheless, this strategy does provide a method of reducing a complex environment into manageable components and it allowed a new method of pedagogy to be implemented and tested reasonably well without a large expenditure of external and internal resources. The reader should try to imagine another method of attempting attainment-based education in a cross section of disciplines in a large public university, while engaging more than 100 faculty members and over 200 students for approximately $500,000 of internal and external funds over three years. Needless to say, this has been an inexpensive experiment in pedagogy and in curriculum reform.

The following table presents a conservative estimate of the number of individuals who participated in the COA project from its inception. The total COA impacted on many faculty members and the institution and on graduate students,

many of whom will become faculty members in the future. Many more were exposed
to a new methodology of instruction and a new way of conceiving the curriculum
in their respective programs.

TABLE.7 Number of Participants
in the FIPSE-Sponsored
COA Programs 1974-1976

Programs/Function	Mentors	Outside PP* as Juror	Faculty Jury Members	Tutors	Outside PP as Tutor	Students	Faculty on Review Committees	Content Graduate Student Planners
Biology	1	2	10	0	0	48	6	2
Nursing	3	6	4	25-30**	?	41	25-30	0
Urban and Regional Planning	3	0	14	15	0	24	15	4
Religion	1	0	0	0	0	4	12	1
Theatre History	2	0	2	0	0	11	34	4
Theatre Costuming	1	0	0	0	0	75	2	2
Music Education	1	1	2	3	0	17	15	2
Psychology	1	0	0	0	0	12	0	2
Library Science	0	0	0	0	0	0	0	1
TOTAL	13	9	32	43-48	0	232	109-114	18

*PP - practicing professional
**Does not include outside practicing professionals
who were also consulted.

CHAPTER VI

General Student Attitudes
about the
Curriculum of Attainments.

If the COA is to exist as an alternative to the conventional programs, the ultimate success of the COA must be evaluated in terms of how well the program was received by students. A General Outcomes Survey (see Appendix 7 pages 198 - 199) was developed to assess student reactions to the ▓▓▓▓▓▓▓ As mentioned previously, data was gathered to a sufficient degree to confidently assess student attitudes only in the Biology program and in the generic Nursing program. When reviewing the results, the reader must remember that in the Nursing-generic program the students took almost their entire program in attainment-based format and had very few formal lecture-type courses. The Biology students, however, took only approximately 25% of their normal course load on attainment-based format. Thus student reactions are perhaps influenced by the amount of experience in the conventional course program with which to compare the COA.

Items rated highly on the General Outcomes Survey (m < 2.0 on Likert-type scale) by both Biology students and Nursing students were that the COA helped students: develop self-confidence in professional skills; develop skills in analyzing and solving problems; develop a high degree of self-directedness; develop motivation and commitment toward professional goals; and increased their ability to form more personal relationships with their peers and instructors. Other items rated highly by both groups were that the COA prepares students for both graduate school and the world of work; helps students develop a greater sense of responsibility; and that the assessment procedures enabled students to improve communication skills.

Items rated lower ($2.0 < m < 2.5$ on a Likert-type scale) by both groups were that the COA helped students progress at a faster rate; the curriculum is more

relevant to the real world professional activities; and that it helped students allocate time and work effort more efficiently.

Items rated differentially (mean difference $\geq .5$) in favor of the Biology program were that: the COA helped students develop research interest; gain an in-depth knowledge in the major subject area; that if they had a choice to participate in the COA or not to participate, they would choose the COA; that the benefits of the COA outnumber the problems; and the curriculum is more relevant to the real world of professional activities.

One item rated differentially (mean difference $\geq .5$) in favor of the Nursing program was that the COA helped students increase their ability to form more personal relationships with peers and instructors.

Interpretation

The results of the questionnaire indicated that the program appeared to have a favorable impact on student participants. However, caution must be taken in interpreting the results due to the lack of a high calibre psychometric device to assess general outcomes which may well be prone to measurement errors such as response sets and halo effects. Nevertheless, all means except one were 2.5 or lower (i.e., rated highly favorable). There were some differences between groups in the way they responded to the items, but these differences may be explained on the basis that the Nursing students were more openly critical about their program and that they did not have the basis for comparison with the conventional instruction that the Biology students did. To the Biology students, the COA may have been a welcome relief from the conventional mass lecture approach. The conventional program in Nursing is already highly personalized, having over 23 full-time faculty for 200 students. Thus the COA is seen by some student participants as imposing standards on an already idealistic environment.

CHAPTER VII

Summary and Conclusions

Proclaiming the Curriculum of Attainments a raging success would be as wrong as proclaiming it a failure. In terms of the achievement of project goals, the author believes that these were sufficiently demonstrated to formulate some notions about the nature of attainment-based education and whether it has the potential for further investigation and dissemination. Mastery standards for attainment of programmatic requirements were established and evaluated in five of the seven COA programs. In four programs; Biology, Nursing, Urban and Regional Planning, and Music Education, faculty juries certified the demonstration of attainment. The Nursing School actually awarded B.S. degrees based on the demonstration of attainment. Juries were attempted in the Theatre program but they were not able to certify attainment because of the student's failure to demonstrate the required minimum level of mastery.

The cost-effective use of educational manpower and technology was demonstrated in both the RN and generic Nursing programs in terms of cost-parity with the conventional system. Conceptually, the reaching of cost-parity level with the parallel conventional programs is feasible in all of the COA programs. Parity may be attained if there are enough students and adequately prepared learning materials to enable the acquisition of information and the mastery of elementary skills through self-instruction or through peer teaching. The COA can be highly cost-effective with a student population that already possesses a high level of entry skills and knowledge as in the case of the RN Nursing group.

Open, time-variable education was demonstrated in all COA programs when one includes the option of progressing at a slower pace as well as a faster pace. Outstanding examples of the COA as an open university were that one student in

Urban and Regional Planning was able to earn seven credit hours while living and working in Fort Myers, while another Nursing student was able to accrue 48 credit hours in one quarter. Other students were able to take home learning materials during the Summer and were ready for jury exams in the Fall. Yet others could work full-time and still make significant strides toward earning their degrees. A truly flexible means of instruction was demonstrated.

A more direct relationship between the university curriculum and the demands of the world of work were demonstrated through the use of practicing professionals on departmental curriculum committees which formulated attainments, and on juries which certified the demonstration of attainment. However, the benefits of including external evaluators on juries appeared to be equivocal when weighed against the problems. Perhaps when the COA programs turn more toward the evaluation of attainment in the field, the external evlauator will become viewed as more of an asset.

The characteristics of the COA learning environment were investigated in terms of the kinds and frequencies of human transactions that occur in the environment. The environment is highly personalized while academic standards are maintained at a high level. The acquiring of an integrated fund of useful knowledge can be inferred from the nature of attainments certified by the individual programs. Presently, the environment is individualized in terms of allowing students to establish their own pace in the mastery of attainment. As more varied learning materials are developed and the variety of options for learning attainments are expanded, the processes of mastering attainment will become truly individualized according to the needs and learning styles of individual students.

The efficacy of the pilot-program strategy for the implementation of attainment-based instruction in a large public university apparently has not yet been demonstrated. However, eleven probable underlying conditions required for the strategy to be effective are outlined. At the early stages of innovation, pilot

programs are extremely vulnerable and are doomed if only a few of these conditions are not met to a sufficient degree.

A sage once said that an experiment is a failure only if nothing can be learned from it. What are some of the lessons learned from the COA project about attainment-based education in a large public university?

1. The implementation of attainment-based education is indeed feasible in a large public university. Most comprehensive competency-based educational programs are located at small private colleges or small colleges within a large university. The CQA project has demonstrated that complete attainment-based programs with time-variable, continuous progress elements can be implemented within the conventional departmental structure, and that the student credit hour can still be used as a unit of instruction with which to finance attainment-based programs.

2. Attainment-based education appears to operate selectively to an advantage over the conventional educational approaches found in large universities. In order to maintain its status as a viable option to the conventional programs, the attainment-based option system must serve student or faculty needs that are not capable of being met by the conventional program. For instance, attainment-based education is able to award credit for learning already acquired from a job or from life experience -- something exposure-based education is unable to do. However, mass approaches to education appear to be adequate for a large population of naive learners, even though attainment-based education has demonstrated that it can offer a higher quality of education in terms of levels of achievement and person-alization, at approximately the same monetary cost.

3. Attainment-based education can be highly cost-effective, but at a price (there ain't free lunch!). Even though students learn more for less cost, the ledger is balanced when human toil is added for both faculty and students. Students work harder than in the conventional program by having to both obtain and synthesize

knowledge themselves and to demonstrate that knowledge before a jury. Faculty mentors must be more accessible to students, must produce high quality learning products, must encourage and cajole dawdling and procrastinating students to continue making progress, must be generalists in their disciplines and must endure being labeled as such, etc. Unless there is an underlying value for the pursuit of excellence on the part of both faculty and students, the ledger is tipped in favor of the conventional education program with the typical post-adolescent student population who attend public institutions.

4. Attainment-based education requires a dramatic restructuring of conventional professorial roles. The separation of the instructional function from certification is difficult for faculty to understand and accept. The prospect of having the results of one's instruction evaluated by colleagues is at first blush an anathema and an invasion of the private fiefdom of the professoriate. Many faculty members find untenable the prospect of external evaluation of their instruction, even though scrutiny by external authorities in the evaluation of scholarly works is never an issue.

5. Perhaps the most opportune place to implement attainment-based education would be in an academic environment which 1) caters heavily to the mature or adult learner; 2) has a service-oriented faculty, and 3) is located in a metropolitan area. The COA offers flexibility in the delivery of instruction for individuals with major life's responsibilities other than school. Attainment-based education offers a valid way for recognizing relevant prior learning without having to assess life's experience directly from a vita or a supervisor's job evaluation. Finally, it provides a way of coordinating and integrating one's academic work with the training these students receive on-the-job or in an internship.

6. Attainment-based education does impose constraints on an outcome-free, process-free academic environment. An educational institution can be process-free

and outcome-free as long as it continues to admit homogeneously talented students. At least if the students who are admitted are bright and have roughly the same cultural and personality characteristics, they will likely turn out bright at the end of four years, provided the institution does them no harm. And, if at the end of four years, they are able to secure the kind of job to which they aspire or are able to gain admission to the graduate school of their choice, few questions are raised about the quality of their educational experience per se. However, today many institutions are not as selective in their admissions policies as they once were, resulting in a more heterogeneous student population. Add to this a laissez-faire environment, without rigorous outcome standards or process controls, coupled with a declining availability of rewarding jobs to meet the expectations of college graduates, the worth of the educational experience comes into question.

However, a faculty which has become accustomed to the largely accountability-free environment of the 50's and 60's, views the impositions of public standards for programmatic outcomes with less than raging enthusiasm and as an infringement on its professional freedom and integrity. Nevertheless, it is likely that, in spite of faculty resistance to the establishing of accountability, public education will come more increasingly under open scrutiny. The question is, will public control be exerted on the processes of education (i.e., certification of exposure) or on the outcomes (certify attainment)? Certainly process control is the most familiar form of control and the easiest to finance and administer. Attainment-based education is of course, a method of pedagogy to establish outcome control.

7. The administrative structure in attainment-based education is difficult for students and faculty to imagine or even comprehend. In the conventional program, students arrive on campus and are assigned an advisor who perfunctorily hands them a menu of required and elective courses from which to choose. In the

COA program, a student is assigned to a mentor along with approximately 14 other students and is shown a list of 10-14 generic attainments. The student is then handed a handbook and binder full of learning packages and is informed that he/she will undergo a diagnostic assessment procedure. Following this procedure, the student and mentor together determine which is the best and most expedient way to master the attainments. Coping with a formless process of attainment-based education is initially very difficult for most students who have been accustomed to the time structure present in conventional education approaches. In spite of this, students who persist acquire capacities for self-directedness and independent learning, an outcome not always achieved in conventional, course-structured curricula.

Harry Broudy said in The Real World of Public Schools, "quality education is where the elite send their children." This definition of quality education is viewed from a slightly different perspective in light of the COA. Quality education may be considered from the standpoint of the achievement of mastery standards for attainment, with an integrated and usable fund of skills and knowledge at a given cost. At the same time, the required skills and knowledge are mastered through personalized and individualized methods of instruction. Ultimately the issue in regard to attainment of quality education in mass public education, concerns the degree to which students and faculty desire excellence. The price to pay for quality education is dedication, commitment and effort to meet high expectations and not to settle for less. Attainment-based education is a method of pedagogy where quality education can be operationally described in terms of the relationship between levels of excellence and costs. This relationship cannot be optimized without the will of faculty and students to expect and to demand excellence from themselves and from each other.

116

APPENDICES

APPENDIX 1

Statements of Generic Attainments

APPENDIX 1

GENERIC ATTAINMENTS

Marine Biology

BIO 380 - 3 Hours; Marine Geography and Ecological Application

Generic Attainment: Student can demonstrate mastery of concepts of earth science
                      selected for their applicability to the solution of problems
                      in marine ecology.

BIO 381   5 Hours; Descriptive Oceanography

Generic Attainment: Student can demonstrate working knowledge of selected concepts
                      of descriptive oceanography applicable to marine biological
                      problems.

BIO 382   8 Hours; Marine Ecology

Generic Attainment: Student can demonstrate his knowledge of selected ecological
                      concepts and along with his attainments in earth science (BIO
                      380) and descriptive oceanography (BIO 381), apply them to
                      problems in marine biology.

BIO 383   5 Hours; Phytoplankton Ecology

Generic Attainment: The student will demonstrate through a graded series of compe-
                      tency satisfactions that he has acquired a mastery of the
                      taxonomy, morphology, and ecology of the marine phytoplankton
                      consistent with his advanced undergraduate standing.

BIO 384   6 Hours; Fishery Biology

Generic Attainment: Through a study of graded materials, the student acquires a
                      degree of mastery consistent with advanced undergraduate standing
                      of the following: a knowledge of the principal species of the
                      U.S. commercial fisheries, fisheries research methods, marine
                      productivity, and the commercial fisheries, the place of
                      fisheries in the world food supply.

BIO 385   4 Hours; Marine Pollution Biology

Generic Attainment: Within the expectations of the advanced undergraduate standing,
                      the student demonstrates, by various performances, his mastery
                      of the following aspects of marine pollution: organism respon-
                      ses to principal pollutants, pollution technology, prevention
                      and treatment, socio-economic problems of pollution control.

BIO 386 1 Hour; Correlative Workshops.

Generic Attainment: Student attends and participates in discussion by other students, mentor, and visiting speakers pertaining to application of marine biology to world of work and socio-economic problems of national and international scope. Also, conducts reviews of own work as he progresses.

BIO 387 3 Hours; Marine Biology Laboratory and Field Experiments

Generic Attainment: . By performance of experiments and presentation of notes, student demonstrates proficiency in application of selected laboratory and field procedures to the solution of problems in marine biology.

Generic Competencies for Instrumental Music Education

1. Demonstrate knowledge of instrumental techniques through playing of instruments, identifying acceptable teaching procedures, diagnosing performance problems, and prescribing appropriate solutions.

2. Demonstrate knowledge and skills necessary to elicit musical performance from an instrumental ensemble through score reading, conducting gestures, and rehearsal techniques.

3. Demonstrate knowledge of the teaching and learning process (planning, implementation, and evaluation of instrumental music instruction) through simulation, peer instruction, and/or mini-teaching in public schools.

4. Demonstrate knowledge of the organization and administration of a comprehensive instrumental music program.

CURRICULUM OF ATTAINMENTS
TERMINAL GENERIC COMPETENCIES

DIVISION A: ROLE IDENTIFICATION AND DEVELOPMENT

1. Knows the philosophical, historical, educational, and legal influences on contemporary nursing practice.

2. Systematically uses the nursing process and establishes priorities for nursing intervention.

3. Uses teaching-learning theory to design and implement instructional programs.

4. Collaborates with members of the nursing team and other health professionals, utilizing principles of group dynamics and management and demonstrating leadership ability.

5. Articulates and interprets current issues and trends in nursing and health care.

6. Incorporates current nursing information and research into nursing practice.

7. Acts as a change agent for the improvement and expansion of nursing practice and health care delivery.

DIVISION B: COMMUNICATION AND PERCEPTION

8. Utilizes appropriate resources. Makes planned and comprehensive observations and accurately reports and records significant information.

9. Uses appropriate interpersonal and interviewing techniques to collect data and to establish therapeutic relationships.

10. Identifies variables affecting the client's ability to cope with health problems.

11. Recognizes abnormal patterns of behavior, communication and adaptation and initiates appropriate action.

DIVISION C: HEALTH MAINTENANCE AND PROMOTION

12. Recognizes normal physiological, psychological and environmental requirements for maintenance of health for individuals throughout the life cycle.

13. Knows the major health hazards to individuals and families throughout the life cycle and the epidemiological and preventive implications.

14. Conducts a health assessment, including a medical history, to determine the client's level of wellness.

15. Provides preventive health guidance and maintenance services to individuals, families and community groups. Refers clients to appropriate community agencies and resources.

DIVISION D: HEALTH RESTORATION AND REHABILITATION

16. Provides nursing assistance to meet basic needs of individuals of all ages and dependency states in any setting.

17. Performs therapeutic procedures to support or restore normal body processes and knows the rationale.

18. Recognizes abnormal physical signs and symptoms, including common diagnostic test results, and initiates appropriate action.

19. Correlates signs and symptoms, diagnosis, medical and nursing intervention with biopathology of major episodic and extended health problems.

20. Identifies rehabilitative needs and provides indicated nursing assistance.

PSYCHOLOGY
TERMINAL COMPETENCIES

<u>THE STUDENT WILL BE ABLE TO</u>:

1. observe significant behaviors

2. classify significant behaviors in terms of assets, deficits, excesses

3. label and provide evidence for inferred internal states of clients

4. provide several complementary conceptual schemas for organizing the information developed in steps 1, 2, & 3

5. to demonstrate helping skills
   - a. for understanding
   - b. for comfort and crisis utilization
   - c. for positive action

RELIGION
GENERIC COMPETENCIES[1]

STUDENTS WILL BECOME FAMILIARIZED WITH EACH OF THE FOLLOWING CONTENT AREAS:

1. Field orientation to religion

2. Biblical Studies

3. The Christian Tradition in the West

4. Religious Traditions other than Judaism and/or Christianity

5. Religious Dimensions of Moral Philosophy in the West

6. Religious Dimensions of Cultural Achievement in Western Civilization

7. Modern and Contemporary Religious Thought in the West

In addition, students will undertake a major project involving research and writing in one of the sub-fields of the discipline under guidance of the mentor.

[1]In a paper delivered at the 1976 AERA National Convention in San Francisco, Dr. Charles Swain identified what may be more consistent with the Project Director's notion of generic attainments. Dr. Swain revealed a stepwise methodological approach for inquiry and understanding in the Humanities. Each step could be a generic attainment. These steps are:

1. Orientation to the vocabulary and identification of important events.

2. The Primary Tradition: the recorders of events and their interpretations.

3. The Seondary Tradition: the new meanings accorded the Primary Tradition.

4. Interpretation and synthesis: new organizations of meaning in light of the Contemporary World.

5. Critical appreciation: the assemilation and interpretation of primary and secondary authors with the student's own interpretation and application to his own life.

GENERIC ATTAINMENTS

COA

THEATRE HISTORY

1. Perceives theatre history as an eclectic, dynamic phenomenon, and relates it to theatre's varied functions.

2. Brings to contact with contemporary theatre a rich perspective based on awareness of the heritage of its past.

3. Know major phases and periods of theatre history, the basic characteristics of each, reasons for their beginnings and endings, and the relative importance of each in its own time and beyond its time.

4. Relates and integrates the study of theatre history into a basic knowledge of world social, political, economic, religious, and cultural histories.

5. Demonstrates comprehensive recognition of visual elements of theatre in its history, and of the architecture and devices which make them possible.

6. Knows the names, contributions, and place in time of important theatre people and institutions.

7. Knows and is able to use correctly technical terms from the past and present.

8. Has basic research and bibliographic skills, including knowledge of the relative reliability of overlapping sources.

9. Has awareness of the dynamics of historical scholarship.

URBAN AND REGIONAL PLANNING
GENERIC COMPETENCIES

A. CONCEPTUAL KNOWLEDGE COMPETENCIES

Generic Competency	Credit Hours
Planning Theory	4
Theory of Behavior of Urban and Regional Systems	8
General Systems Theory	3
Information Systems and the Planning Process	3

B. COMPETENCIES RELATING TO ANALYTICAL METHODS AND TECHNIQUES

Generic Competency	Credit Hours
Use of Models for Problem Solving	4
Statistical Techniques for Planning	4
Survey Techniques and Data Collection	3
Forecasting Techniques	3
Computers as an Aid in Data Analysis	2
Personal Limitations in Using Analytical Techniques for Planning	1

C. COMPETENCIES DEALING WITH THE DESIGN OF COMPONENTS OF THE PLANNING PROCESS

Generic Competency	Credit Hours
Formulation of Policies	4
Strategies for Solving Planning Problems	3
Design of Functional Systems	3
Evaluative Strategies and Techniques for Planning	4

D. METHODS AND TECHNIQUES OF IMPLEMENTING PLANNING

Generic Competency	Credit Hours
Capital Improvements Programming	3
Land Development Codes	4
Procedures for Implementation of a Planning Law	4
Fiscal Implementation Methods	4
Planning and Manpower Requirements	2
Application of Educative Techniques for Planning	4

E. USE OF COMMUNICATION IN THE PRACTICE OF PLANNING

Generic Competency	Credit Hours
Creative Writing for Planning Situations in Specialty Areas	2
Design and Preparation of Graphic Techniques and Materials	3
Experiential Communication for Planning	2

F. PROFESSIONAL ASPECTS OF THE PRACTICE OF PLANNING

Generic Competency	Credit Hours
Planning as a Profession	6
Advanced Topics in Professional Planning Behavior	4
Professional Planning and Ethical Dilemmas	5
Experiential Learning as a Technique in Planning	4

APPENDIX 2

Examples of Learning Packages

CURRICULUM OF ATTAINMENTS

Fishery Biology
Bio 384
(6 Hours)

The following unit has been prepared to give you a working knowledge of the important features about the taxonomy, morphology, physiology, and life history of representative species of the living resources of the world's oceans. From this basis it is hoped that you will aguire the ability to recognize the technical resources available to attack given problems in fisheries biology, such as population dynamics and resources management. The direct references given you to specific competencies are more limited than in previous units and it is hoped that you will seek additional imputs from other sources. Having finished this unit, only for those that wish to, a hypothetical fishery model has been developed so that you might attempt to use a computer to simulate the exploitation of a fishery. Readings for this unit are:

1. Royce - <u>Introduction to the Fishery Sciences</u>

2. Lackey - <u>Introduction Fisheries Science</u>

3. Bardach, et al. - <u>Aquaculture</u>

4. Erlich and Erlich - <u>Population, Resource, Environment</u>

5. Murdoch - <u>Environment and Resource, Pollution and Society</u>

6. Tait - <u>Hydrography (In Relation to Fisheries)</u>

7. Rounsefell - <u>Ecology, Utilization, and Management of Marine Fisheries</u>

8. Hela and Laevastu - <u>Fisheries Hydrography</u>

*All references may be checked out from the T.A.

Competency Statements

Competency 1

Understand the nomenclature and characteristics used in identifying species of marine fishes. (Royce 64-69)

Study Questions:

1. How are scientific names for organisms originated?
2. How are species, subspecies and genera delineated? Does such classification reflect evolutionary lines?
3. What are the main characterisitcs used to identify fish species?

Competency 2

Know the groups of marine organisms which are of commercial importance. (Royce 69-108) (Lackey chapters 24, 25) (Rounsefell chapter 17)

Study Questions:

1. What are the important groups within these families?
2. Have a general understanding of the life history, fishing grounds, and fishing method employed for each of these groups.

Competency 3

Prepare a list of commercially important fish representative of the world fishery. Your list should contain at least two species from each of the world's five major oceans. Your list should follow this form:

<u>Country/Fishery</u>　　　<u>Common Name</u>　　　<u>Genus Species</u>

Competency 4

Prepare a resume of each of the following fisheries and be prepared to discuss each:

　　South American Anchovey
　　South Pacific Tuna
　　North Atlantic Cod
　　Pacific Salmon

Competency 4 (continued)

Include in your resume for each of the given fisheries:

1. a sketch of each fish (two sketches if sex can be determined from external morphology); indicate key morphological characteristics used to identify the fish

2. a diagram of the life history for each fish

3. a brief discription of the physical and biological environment that each fish lives in

4. the status of each of these fisheries, i.e., growing, declining, or at equilibrium

(Lackey, chapters 22, 24, 25) (Rounsefell, chapter 18, 19, 22)

Competency 5

Understand how and with what organs fish sense the environment around them. (Royce 109-118)

Study Questions:

1. What specific adaptations to light sensing have marine organisms made?
2. What effects does light have upon marine organisms?
3. Do aquatic organisms possess senses of taste and smell?
4. How does the lateral line system in fish function?
5. What are the functions of electrical organs in fish?

Competency 6

Understand the effects and interrelations of temperature, pressure, salinity and other physical factors have upon fish. (Royce 118-142; Rounsefell 43-84; Tait - all; Hela and Laevastu - chapter 2)

Study Questions:

1. How does temperature effect respiration, reproduction, and larval development?
2. What effects does pressure have upon protein structure and enzyme rate reactions?
3. What variations in osmoregulation are shown by marine organisms?

Competency 7

Be able to demonstrate a thorough knowledge of the relation-
ship between hydrography and fisheries biology. (Hela and Lae-
vastu - all; Tait - all)

Study Questions:

1. How do currents, waves, tides, and weather effect fish?
2. What applications does hydrographic data have to the com-
   mercial fisheries industry?
3. How does weather effect the fisheries of the open oceans,
   coastal areas, and estuaries?
4. What hydrographic conditions underly the fluctuations of
   abundance of many fish?

Competency 8

Have a complete understadning of the reproduction and early
development of the American oyster and the Penaeid shrimp.
(Royce 129-140; Rounsefell 346-350, 365-374)

Study Questions:

1. How are the life-cycles of these two organisms similar?
   How do they differ?
2. How does reproduction and early development of these two
   invertebrates compare to that of fish species such as
   mackeral and salmon?

Competency 9

Understand the growth patterns for several species important
to the fisheries industry. (Royce 143-152)

Study Questions:

1. What is growth?
2. What groups of marine organisms are characterized by
   "continuous" growth and what groups by step-wise growth?
3. How does the asymptotic growth of marine organisms differ
   from that of terrestrial mammals?
4. How do endogenous and exogenous factors effect growth?
5. What is meant by allometric growth? How does this differ
   from isometric growth?

Competency 10

Understand the use of annuli in the measurement of fish scales and otoliths in the determination of growth rates. (Royce 152-159; Rounsefell, chapter 11)

Study Questions:

1. How can this type of data be applied to the study of fin- and shell- fish populations?

Competency 11

Be knowledgeable of the factors which are important to the dynamics of marine fisheries populations. (Royce 164-183)

Study Questions:

1. Be able to define the terms:. habitat, role, 'niche.
2. How do these change as an individual ages?
3. What do the prefixes eury- and steno- mean?
4. What is the difference between acclimation and adaptation?
5. What is the difference between vectorial and reproductive patterns of distribution?

Competency 12

Have an understanding of the age structure of populations. (Royce 174-193; Lackey chapters 3, 5, 6; Rounsefell, chapters 9, 10, 12)

Study Questions:

1. Define the terms: cohort, natality, mortality.
2. What are the effects of year classes within the structure of a population?
3. Be able to compare percentage of survival v. relative age for a number of organisms important to marine fisheries.

Competency 13

Understand the relationships between migration, recruitment, and stock size. (Royce 196-217, 226-231; Lackey ch. 4, 7, 8, 3)

Study Questions:

1. Be able to define the terms: stock size, standing crop,
2. For what fisheries would you use a direct count, a correlations of populations, or a marking method in determining stock size?
3. How does migration effect stock size?
4. What methods can be used to characterize closely related populations?
5. What factors effect recruitment?
6. How does recruitment effect stock size?

Competency 14

Have a knowledge of how the factors of survival and mortality effect and influence marine fisheries. (Royce 231-242; Rounsefell ch. 9)

Study Questions:

1. How these can be utilized as instantaneous rates.
2. How does natural and fishing mortalities influence catch curves?

Competency 15

Be able to demonstrate a general knowledge of the use of yield models in the study of marine fisheries. (Royce 242-253; Lackey ch. 9, 10, 14, 15, 16, 17)

Study Questions:

1. What are the basic characteristics of all fisheries model?
2. Understand and be able to compare at least four types of fisheries models.

Competency 16

Be able to present a 20 minute discussion explaining and comparing past and modern fishing methods. (Royce 277-295; Rounsefell ch. 7, 8).

Study Questions:

1. How has fishing gear change over the past 2000 years, and what developments have lead to these changes?
2. What are the principal fishing gears utilized today and where and for what species are these methods employed?
3. Prepare a sketch for each of the following fish capture methods:

   ship gear/nets
       otto-trawl
       midwater (flying trawl)
       tangle-net/gill net
       purse seine
   other
       bottom dredge
       longline

   Be prepared to discuss, explain, and contrast these different fishing methods on the basis of type of fisheries in which each is employed, efficiency, man power, size of boat, special equipment, rigging, etc.

Competency 17

Know the effects of availability and gear selectivity upon the standing stock and age structure of important fisheries. (Royce 218-221)

Study Questions:

1. What factors effect availability?
2. Why are different kinds of gear employed in the same fishery?
3. What is a length selection curve?

Competency 18

Develop a 20 minute talk on the important consideration of fisheries resource management. (Royce 314-343; Lackey ch. 14, 24, 25, 26; Rounsefell ch. 13, 14, 15)

Competency 18 (continued)

Study Questions:

1. What agencies in the U.S. are responsible for controlling marine fisheries?
2. What are the common juridical divisions of U.S. coastal waters?
3. What internationl laws cover marine fisheries?
4. What economic problems influence fisheries management?
5. What social factors influence the management of marine fisheries?

Competency 19

Prepare a 30 minute talk on aquaculture. This discussion should include at least one fresh water and two marine fishe species as well as two invertebrate species presently under commercial cultivation. (Royce 255-275, 309-313; Bardack, et al. - all; Rounsefell ch. 16)

Study Questions:

1. What basic biological principles underly aquaculture practices?
2. What basic characteristics must an organism have to make it desirable for aquaculture?
3. What are the economic aspects of aquaculture?
4. Does aquaculture represent a reasonable answer to the world's growing demand for protein?

Competency 20

Be prepared to discuss your opinions on why the world's oceans will or will not be able to supply the needed food resources for the world's growing population. (Erlich & Erlich ch. 5; Murdoch ch. 3; Bardach, ch. 1; Rounsefell ch. 6, 7).

LEARNING PACKAGE 333 A

TONE PRODUCTION AND ARTICULATION
(4 qtr. hrs.)

Prerequisite: none

Time Estimate: 8 weeks

Pre-Assessment: See Assessment topics for each specific competency

Specific Competency	Topic
I. -1	Wind Instrument Tone Production
I. -2	Wind Instrument Articulation
I. -3	Percussion Techniques

School of Music
Curriculum of Attainments
Florida State University
9/75

MUS 333 A

TONE PRODUCTION AND ARTICULATION (4 qtr. hrs.)

Introduction:

A basic knowledge of the concepts and teaching skills necessary for developing tone production and articulation on wind and percussion instruments is a fundamental prerequisite for the instrumental teacher. It is the purpose of this learning package to identify and organize sound teaching principles and skills in these areas for use in individualized and small group instrumental instruction. The content has been organized in a manner that will enable you to recognize the common principles of tone production and articulation among both wind and percussion instruments necessary for effective instruction of heterogeneous instrumental classes.

Specific Competencies.

I. -1 Demonstrates and explains the fundamentals of tone production for the standard wind instruments. Relevant factors to be included are embouchure development and control, breathing process and breath control, volume of the oral cavity, posture and holding position, effects of mouthpiece/reed, and methods of vibrato when applicable.

I. -2 Explains the principles of articulation for the standard wind instruments. Relevant factors to be included are starting and stopping the tone, methods of tonguing, and performance of the basic articulations.

I. -3 Demonstrates and explains the fundamentals of performance for the standard percussion instruments. Relevant factors to be included are holding and playing positions, developing performance techniques, and tuning procedures when applicable.

Generic Attainment I: Demonstrate knowledge of instrumental techniques through playing of instruments, identifying acceptable teaching procedures, diagnosing performance problems, and prescribing appropriate solutions.

-2-

Topics for Assessment:

1.01 Demonstrate an acceptable procedure for assembling and disassembling each wind instrument.

1.02 Demonstrate the proper playing position for each wind instrument. Describe common errors in wrist, hand and/or finger position which might impair the development of technique on the instrument.

1.03 Describe a characteristic embouchure for each wind instrument including any adjustments required to maintain consistent tone quality throughout extreme registers. Identify common elements of embouchure formation for wind instruments. Describe teaching strategies for establishing and developing a characteristic embouchure on each instrument.

1.04 Describe proper breathing procedures for wind instrument performance. Explain the physiological process involved in inhalation, suspension and exhalation of breath. Describe the effects of air stream speed and direction on tone quality and intonation. Describe teaching strategies for developing proper breathing and breath control. Identify common problems of faulty breathing which are observable.

1.05 Explain how the volume of the oral cavity may affect tone quality and intonation on a wind instrument. Describe a teaching strategy for developing the open throat concept.

1.06 Describe the basic design characteristics (size, shape, etc.) of brass mouthpieces and their effects on tone production.

1.07 Describe characteristics of a quality reed for both single and double reed instruments. Describe procedures for selecting a reed and adjusting it for maximum performance and efficiency.

1.08 Identify four types of wind instrument vibrato and their use with specific instruments. Describe an acceptable concept of vibrato in terms of speed, width and direction of pitch variation. Describe teaching strategies for developing each type of vibrato on appropriate instruments.

1.09 Identify factors which cause poor tone quality on each wind instrument - a diagnostic checklist of potential problems which may be observed either visually or aurally. Prescribe procedures for correcting the problems.

1.10 Demonstrate proper fundamentals of tone production by producing a characteristic tone on each wind instrument (long tone, $p \angle f \rangle p$).

-3-

Assessment:

1. Written examination covering assessment topics with a minimum acceptable performance of 80%.

2. Demonstrate instrument assembly, proper playing position, and a long tone with a characteristic sound on selected wind instruments.

Specific Competency I.-2: Explains the principles of articulation for the standard wind instruments. Relevant factors to be included are starting and stopping the tone, methods of tonguing, and performance of the basic articulations.

Topics for Assessment:

2.01 Describe procedures for starting a tone on brass and woodwind instruments, relating to:
   (a) Tongue placement in releasing the breath.
   (b) Use of consonant and vowel combinations in producing different articulations and register changes.
   (c) Synchronization of breath and lip tension.

2.02 Describe the proper technique for stopping a tone on the various wind instruments.

2.03 Explain and demonstrate the function of the tongue and breath in performing staccato and legato articulations.

2.04 Explain and demonstrate acceptable techniques for performing slurs on:
   (a) valved instruments (lip and valve slurs)
   (b) trombone (contrary vs. similar motion)
   (c) woodwind instruments

2.05 Explain the function of the tongue and breath in performing the following special types of articulation: anchor tonguing, multiple tonguing, accented tonguing including forte-piano and sforzando.

2.06 Identify common articulation problems and prescribe effective methods for their corrections.

Assessment:

1. Written examination covering assessment topics with a minimum acceptable performance of 80%.

2. Demonstrate satisfactory performance of basic articulations (slurs, staccato and legato tonguing) and selected wind instruments.

-4-

Specific Competency I. -3: Demonstrates and explains the fundamentals of performance for the standard percussion instruments. Relevant factors to be included are holding and playing positions, developing performance techniques, and tuning procedures when applicable.

Topics for Assessment

3.01 - 3.07   Describe desirable instrument specifications and appropriate implements as designated in the percussion outline.

3.01 - 3.07   Demonstrate and describe basic techniques of performance and tuning procedures as designated in the percussion outline.

3.08   Describe methods of rotating and performing both measured and unmeasured rolls.

Assessment:

1. Written examination covering assessment topics with a minimum acceptable performance of 80%.

2. Demonstrate proper playing position, basic performance techniques and proper tuning procedures for selected percussion instruments.

PERCUSSION OUTLINE

Instrument	Specifications	Implements	Performance Techniques	Tuning
3.1 Snare Drum	Shell size with corresponding head specification Snare and strainer design	recommended stick size drum stick nomenclature	stick grip and playing position 13 coordination exercises (openen-closed) rudiments: flam, drag, 4-stroke ruff, 5-stroke roll, crush roll, multiple bounce roll	Adjusting head and snare tension muffling (mechanical and cloth)
3.2 Bass Drum	Shell size head material	types of beaters and recommended use	mallet grip and playing position muffling technique general performance technique including roll	Adjusting head tension muffling procedure
3.3 Cymbol Tomtom a. crash cymbol	Size, weight and holding devices		handle/strap grip and playing position striking technique and damping special techniques: temolo, gliss, fp crash	
b. suspended cymbol	size and weight	types of beaters and recommended use	mallet grip and playing position general performance technique including roll special techniques: gliss, fp	
c. tomtom	size	types of beaters and recommended use	mallet grip priming, striking, damping and roll	

143

144

Instrument	Specifications	Implements	Performance Techniques	Tuning
3.4 Small Concert a. Triangle	Sizes (2)	type of beater	beater grip and playing position general performance technique (1 and 2 beaters) including roll	
b. Tambourine	Size and type (material and jingle design)		holding and playing positions general performance technique including thumb and shake rolls	
c. Castanets	Type		playing position general performance technique including roll	
d. Maracas	Type (material)		holding and playing positions general performance technique including roll	
e. Guiro		type of Implement	Implement grip, holding and playing position general performance technique	
f. Cowbell		type of beater	holding and playing position general performance technique	
g. Cloves			holding and playing position general performance technique	
h. Woodblock		types of beaters	holding and playing position general performance techniques	

Instrument	Specifications	Implements	Performance Techniques	Tuning
3.5 Keyboard a. Marimba b. Xylophone	Keyboard size	types of mallets	mallet grip (2&4) and playing position general performance techniques on either instrument (two octave chromatic scale, two major scales and arpeggios for two octaves, roll)	
c. Bells d. Vibraphone e. Chimes	Keyboard size	types of mallets	mallet grip and playing position general performance technique including damping and pedal technique when applicable	
3.6 Timpani	Design, sizes (hierarchical order), head material and type of tuning mechanism	types of mallets	mallet grip and playing position articulation of staccato and legato, cross-sticking tech- nique, and rolls ($<>$ and fp)	tuning and adjusting head tension
3.7 Marching Percussion	Multiple percussion section (hierarchy of instrument selection) Shell size and head specification snare and strainer design, mounting devices	types of sticks and beaters	stick or mallet grip and playing position	tuning and adjusting head tension tuning the section, muffling, snare, tenor and Scotch bass drums

147

148

133

Learning Activities Guide:

1. Read selectively from the references.

2. Study articles and pamphlets catalogued in the cumulative file on instrumental techniques.

3. Read Vincent Bach's Embouchure and Mouthpiece Manual.

4. Read the Naval School of Music Woodwind Manual.

5. Study the manual Percussion Materials and Techniques.

6. Study Donald Reinhardt's The Encyclopedia of the Pivot System.

7. Compile a notebook of technical information for each wind instrument. Suggested topics to be included are: mouthpiece placement; embouchure formation; proper playing position; starting and stopping the tone; relationship of the embouchure, tongue, breath and aperture; and performance of basic articulations.

8. Compile a notebook of technical information for each percussion instrument. Suggested topics to be included are: instrument specifications, type and use of implements, proper grip and playing positions, performance techniques, and tuning when applicable.

9. Attend scheduled seminars on wind instruments to be presented by faculty specialists and participating students.

10. Exchange demonstration and discussion sessions with students who have expertise on instruments in which you have deficiencies.

11. View video tapes of exemplary performances of basic techniques on each wind and percussion instrument.

12. Practice tone production and basic articulations on each wind and percussion instrument. Use video tape for self-critiquing.

13. Prepare and teach assigned lessons in the C.O.A. instrumental lab.

Required Textbooks

Cirone, Anthony J. <u>Orchestral Techniques of the Standard Percussion Instruments</u>. Redwood City, California: Cirone Publications.

Colwell, Richard J. <u>The Teaching of Instrumental Music</u>. New York: Appleton-Century-Crofts, 1969.

Farkas, Philip. <u>The Art of Brass Playing: A Treatise on the Formation and Use of the Brass Player's Embouchure</u>. Bloomington, Indiana: Brass Publications, 1962.

Kohut, Daniel L. <u>Instrumental Music Pedagogy</u>. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.

Leach, Joel T. and Owen H. Reed. <u>Scoring for Percussion and the Instruments of the Percussion Section</u>. Englewood Cliffs, New Jersey: Prentice-Hall, 1969.

Leidig, Vernon. <u>Contemporary Brass Tecniques</u>. Hollywood, California: Highland Music, 1960.

Timm, Everett L. <u>The Woodwinds: Performance and Instructional Techniques</u>. Boston: Allyn and Bacon, 1964.

General References

Autrey, Byron L. <u>Basic Guide to Trumpet Playing</u>. Chicago: M. M. Cole, 1963.

Farkas, Philip. <u>The Art of French Horn Playing: A Treatise on the Problems and Techniques of French Horn Playing</u>. Evanston, Illinois: Summy-Birchard, 1958.

Kleinhammer, Edward. <u>The Art of Trombone Playing</u>. Evanston, Illinois: Summy-Birchard, 1963.

Leidig, Vernon. <u>Contemporary Woodwind Techniques</u>. Hollywood, California: Highland Music, 1960.

Putnik, Edwin. <u>The Art of Flute Playing</u>, Evanston, Illinois: Summy-Birchard, 1970.

Sawhill, Clarence, and Bertram McGarrity. <u>Playing and Teaching Woodwind Instruments</u>. Englewood Cliffs, New Jersey: Prentice-Hall, 1962.

Spencer, William G. The Art of Bassoon Playing. Evanston, Illinois:
    Summy-Birchard, 1958.

Sprenkle, Robert, and David Ledet. The Art of Oboe Playing.
    Evanston, Illinois: Summy-Birchard, 1961.

Stein, Keith. The Art of Clarinet Playing. Evanston, Illinois:
    Summy-Birchard, 1958.

Stubbins, William H. The Art of Clarinetistry. Ann Arbor, Michigan:
    Ann Arbor Publishers, 1965.

Teal, Larry. The Art of Saxophone Playing. Evanston, Illinois:
    Summy-Birchard, 19

Westphal, Frederick H. Guide to Teaching Woodwinds/Flute, Oboe,
    Clarinet, Bassoon, Saxophone. Dubuque, Iowa. Wm. C. Brown, 1962.

LEVEL II

MODULE CLUSTER 492D

HEALTH HAZARDS AND
THE SURGICAL EXPERIENCE

Prerequisite: Level I

Time Estimate: 5 weeks

Pre-assessment: See individual modules.

Modules	Level Competencies	Topics
IIC-12b	12.206 12.207	Patient Environment and Safety
IIC-13a	13.201	Communicable Disease
IIC-13b	13.202	Injury Control
IID-19a	19.201 19.202	Care of the Surgical Patient
IID-18a	18.201 18.202	Blood Therapy and Post-Operative Complications
IID-20a	20.201	Post-Hospitalization Care

School of Nursing
Curriculum of Attainments
Florida State University
12/74

492D   MODULE TIC-12b

Terminal Competency #12: Recognizes normal physiological, psychosocial and environmental requirements for maintenance of health for individuals of all ages.

Preview: A study of the factors which contribute to a safe patient environment, including the physical, chemical, psychosocial and microbial factors affecting the patient.

Level Competencies

12.206   Given major hazards to patient safety in the hospital environment, identify and discuss policies, preventive actions, protective devices, and contingency plans for maintaining safety and for crisis situations.

12.207   Given a list of common microorganisms responsible for nosocomial infections, identify characteristics of the organisms, mode of transmission, and preventive measures. Include actions and environmental factors which encourage and discourage the transfer of microorganisms.

Assessment

12.206   Oral discussion.

12.207   Written paper.

Learning Activities

1.   Read selectively from references.

2.   Identify the physical components of an environment which promote safe functioning of the patient.

3.   Participate in a discussion on the psychosocial aspects of a therapeutic milieu.

4.   Present to a hypothetical group of head nurses a list of the factors to be considered in the placement of newly admitted patients into various rooms on a unit.

5.   Give examples of safety precautions to prevent transfer of disease in the hospital and in the home.

6.   Develop a list of safety devices and policies for any patient, and then add those devices and policies which may be instigated for those patients who are unable to function safely for themselves, due to age, disability or emotional state.

7.   Arrange a hospital or home sick room with furniture, adjust the temperature and lighting, and provide basic safety requirements for a patient.

8. Select one of the following areas and complete an environmental safety assessment. Discuss the results with a classmate.

Operating room   Intensive Care Unit
Delivery Room   Labor room
Hospital nursery   Pediatric unit
Rooming In Obstetric Unit.

9. List and describe, from the reference, <u>Control of Communicable Diseases in Man</u>, the modes of transfer of microorganisms from patient to patient.

10. Define the following terms:

Reservoir	Immunity	Contact
Virus	Incubation period	Disinfectant
Bacteria	Endemic	Antiseptic
Antibody	Epidemic	Infection
Vector	Contaminated	Mortality
Antigen	Carrier	Susceptibility
Resistance	Spore	Virulent
Medical asepsis	Incidence	Pathogenic
Surgical asepsis	Isolation	Toxins
Sterile	Reverse Isolation	Culture and
Clean	Morbidity	Sensitivity

11. Attend seminar on the control of infections.

12. Identify those patients requiring particular protection from infection due to decreased ability to resist infection or due to increased susceptibility.

13. Review the hospital procedures for isolation. (Refer to Competency 17.214)

14. Read the hospital evacuation and fire policies, and Disaster Plan. Determine the role of team members during an emergency.

References

1. Barber, Janet. <u>Adult and Child Care</u>. C.V. Mosby, 1973. 139-146.

2. Beland, Irene. <u>Clinical Nursing</u>. MacMillan Co., 2nd edition, 1970. Chapter 5, "The Control of Infections," 110-149, and Chapter 6, "Defense Against and Response to Injury," 150-205.

3. Benenson, Abram, editor. <u>Control of Communicable Diseases in Man</u>. The American Public Health Association, 11th edition, 1970.

4. Brunner, Lillian, et.al. <u>Textbook of Medical-Surgical Nursing</u>. Lippincott, 2nd edition, 1970. "Principles of Antisepsis and Asepsis," 979-988.

5. French, Ruth. The Nurse's Guide to Diagnostic Procedures.
    McGraw-Hill, 3rd edition, 1971.

6. Golub, Sharon. "Noise, the Underrated Health Hazard,"
    RN (May, 1969) 40-45.

7. Gragg, Shirley and Rees, Olive. Scientific Principles in
    Nursing. C.V. Mosby, 7th edition, 1974. Chap. 8, 31, 32.

8. Kretzer, Marion and Engley, Frank. "Effective Use of Anti-
    septics and Disinfectants," RN (May, 1969) 48-53.

9. Moidel, Harriet, et.al. Nursing Care of the Patient with
    Medical-Surgical Disorders. McGraw-Hill, 1971. Chap. 5, 6.

10. Perron, Denise. "Deprived of Sound," AJN (June, 1974)
     1057-1059.

Terminal Competency #13: Knows the major health hazards to
individuals and families throughout the life cycle and the
epidemiological and preventive implications.

Preview: An introduction to communicable diseases with
application of health maintenance and promotion activities.

Level Competency

13.201   Given a common communicable disease, develop a plan
            for giving information to the family related to the
            signs and symptoms, method of spread and preventive
            measures.

Assessment

13.201   Oral discussion over situation.

Learning Activities

1.   Read selectively from references.

2.   Select three of the following diseases:
     Tuberculosis   Infectious hepatitis
     Gonorrhea   Rubella
     Syphillis   Meningitis.
     Tetanus   Diphtheria

3.   For all three identify: Occurrence, infectious, agent,
     reservoir, mode of transmission, incubation period,
     period of communicability, susceptibility and resistance,
     and method of control in writing.

4.   Select one of the three communicable diseases and write
     a plan for giving information as stated in competency
     to a family you have had contact with, in the Level I or II,
     and/or:

5.   Select a disease most prevalent in day care centers and
     develop a brochure that would assist families in understanding
     the signs and symptoms and method of spread of the disease.

References

1.   Burton, Lloyd and Smith, Hugh. Public Health and Community
     Medicine. Williams and Wilkins, 1970.

2.   Control of Communicable Diseases in Man. American Public.
     Health Association. 11th edition, 1970.

3.   Florida Health Notes. Published monthly by the Florida
     Department of Health and Rehabilitative Services.

4. Freeman, Ruth. Community Health Nursing Practice. W.B. Saunders, 1970. 197-198, 386-397.

5. Johnston, Dorothy. Essentials of Communicable Disease. C.V. Mosby, 1968. 66-77 and selectively.

6. Wilner, Daniel, et.al. Introduction to Public Health. Macmillan, 6th edition, 1973. 303-334, "Control of Communicable Diseases".

Terminal Competency #13: Knows the major health hazards to
individuals and families throughout the life cycle and the
epidemiological and preventive implications.

Preview: Introduction to injury control (due to accidents)
and control measures as a responsibility of all citizens and
all levels of government.

Level Competency

13.202   Identify the major accident hazards for different age
         groups. Discuss injury control programs.

Assessment

13.202   Short answer quiz.

Learning Activities

1.   Read selectively from references.

2.   Attend seminar on epidemiology of accidents.

3.   Design a plan for safety education for a specific age
     group and accident hazard.

4.   Select two of the following resources for information and
     follow through either with a letter or interview to
     obtain information regarding their safety and injury
     control programs:

     ### State

     a.   Florida State Division of Health, Box 210, Pearl Street,
          Jacksonville, Florida.
     b.   State Traffic Commission
     c.   Department of Agriculture

     ### County

     d.   Board of Education, Schools of Leon County or your
          home county
     e.   Leon County Health Department (or your home county)
     f.   Tallahassee Police Department
     g.   Tallahassee Fire Department

     ### Other

     h.   National Safety Council, Chicago, Illinois, for
          pamphlet on "Accident Facts".
     i.   Metropolitan Life Insurance Company, 1 Madison Avenue,
          New York, N.Y. for statistics on accidents.

References

1.   Anderson, C.L. Community Health. 2nd edition. Chapter 2.

2.   Benenson, Abram. Control of Communicable Diseases in Man.
      American Public Health Association. Latest edition.

3.   Dishon, Colleen. "Fireproofing Our Children," Today's
      Health (January, 1971).

4.   Hanlon, John. Principles of Public Health Administration,
      5th edition. Chapter 29, "Accident Prevention," 537-544.

5.   Monthly Vital Statistics Report. National Center for Health
      Statistics, USPHS Health Resources Administration, Rockville,
      Maryland.

6.   Proceedings of the White House Conference on Health,
      Nov. 3 and 4, 1965, Washington, D.C. Panel 2: Accident
      Prevention, pages 468-492.

7.   Statistical Bulletin, Metropolitan Life Insurance Co.,
      October, 1973. International Trends in Motor Vehicle
      Fatalities.

Terminal Competency #19: Correlates signs and symptoms, diagnosis, medical and nursing intervention with biopathology of major episodic and extended health problems.

Preview: Theory and principles related to nursing care of the adult and child who are experiencing surgery.

Level Competencies

19.201   Correctly answer at least 80% of the questions on an examination over preoperative, intraoperative and immediate post-operative care.

19.202   Prepare a pateint for surgery by doing preoperative instruction, preoperative medication, completing the preoperative checklist and recording in the nurse's notes. Accompany the patient to the operating room, participate in the surgery, accompany the patient to recovery room and return to his room. Complete the "Analysis of Surgical Experience" form.

Assessment

19.201   Objective quiz over enabling competencies on Study Guide.

19.202   See assessment of competency 17.208, Module IID-17a, Analysis of Surgical Experience.

Learning Activities

1.   Read selectively from references.

2.   Complete Study Guide on the surgical patient. Attend seminars on preoperative, intraoperative, and post-operative care.

3.   Read hospital procedures related to preoperative skin preparation, preoperative preparation sheet, and surgical skin prep.

4.   See Videotapes, "Preoperative Care" and "Postoperative Care".

5.   Provide nursing assistance for preoperative and post-operative patients. (Include adults and children)

6.   Observe and participate in the care of patients in surgery and in the post anesthesia recovery room.

7.   Review pharmacology study guides related to preoperative medications.

8.   Review principles of sterile technique, including surgical scrub, gowning and gloving, and changing a sterile dressing. (Module IID-17a)

References

1. Ballinger, Walter, et.al. Alexander's Care of the Patient in Surgery. Mosby, 5th edition, 1972.

2. Beattie, Edward. An Atlas of Advanced Surgical Techniques. W.B. Saunders, 1968.

3. Beland, Irene. Clinical Nursing. MacMillan Co., 2nd edition, 1970. Chapter 17, "The Requirements of Patients Treated Surgically," 750-813.

4. Blake, Florence, et.al. Nursing Care of Children. J.B. Lippincott, 8th edition, 1970. "Influencing the Course and Outcome of Hospitalization," 24-35.

5. Brunner, Lillian, et.al. Textbook of Medical-Surgical Nursing. Lippincott, 2nd edition, 1970. "The Preoperative Patient", 99-112; "Intraoperative Care", 113-127; "The Postoperative Patient", 128-157; "Operating Room Nursing", 989-1009.

6. Levine, Dale and Fiedler, June. "Fears, Facts, and Fantasies About Pre- and Postoperative Care," Nursing Outlook (February, 1970) 26-28.

7. Nealon, Thomas. Fundamental Skills in Surgery. W.B. Saunders, 2nd edition, 1971.

8. Petrilla, Madeline and Sanger, Sargay. Emotional Care of Hospitalized Children. Lippincott, 1972.

Study Guide for the Surgical Experience - Enabling Competencies

Pre-operative Care

1. Differentiate between emergency and elective surgery, and between major and minor procedures.

2. Give examples of surgical procedures performed for each of the following purposes:

   curative-

   diagnostic-

   reconstructive-

   palliative-

3. State how these factors may affect a patient's ability to with-stand the stresses of anesthesia and surgical trauma:

   age-

   weight-

   activity level-

   pulmonary, cardiac, and renal function-

   hepatic status-

   nutritional state-

   drug history-

   mental status-

4. Given a list of diagnostic studies which are usually done on preoperative patients, briefly describe the information which they provide about the patient's status:

   CBC-

   SMA-

   urinalysis-

   chest film-

   EKG-

   pulmonary function studies--

5. Identify preoperative explanations and teaching which would facilitate the patient's post-operative recovery, i.e., deep breathing and coughing exercises, general orientation to the surgical experience. Be able to role play the teaching.

6. Describe causes of fear and psychological stress for the adult and the child having surgery. Identify responses which the nurse may use which would encourage exploration and expression of preoperative fears of a patient and/or his family. State how fear may increase the surgical risk.

7. Given an operative permit form, describe its purposes, both legal and informational.

8. State the purpose of each of the following preoperative orders:

Skin prep-

NPO after midnight-

SS enemas until clear-

Chloral hydrate 0.5 gm hs-

Seconal 50 mg IM at 7:30 a.m.-

Vistaril 75 mg
Atropine 0.4 mg } IM on call to OR
Demerol 75 mg

9. Given a preoperative checklist, state the rationale of each component.

10. State the rationale for reducing external stimuli after administration of the first preoperative medication.

Intraoperative Care

11. Identify the roles of the professional nurse as a member of the surgical team.

12. Identify safety measures used in the operating room to prote a patient from physical, mechanical, chemical and bacteriological injury.

13. Identify the names and uses of basic surgical instruments.

14. List types of anesthesia (local, regional, general), advantages and disadvantages of each, and the rationale for the selection of specific types for various patients.

15. Identify the stages of anesthesia and the observable signs of each stage.

16. Identify the layers of the abdominal cavity apparent at surgical opening and closure.

17. Describe normal gross anatomical structures of the thoracic, abdominal, and pelvic regions and their relationships to one another.

Post-operative Care

18. Given the following list of initial assessments (including observations) to be made of the patient when he is admitted to the recovery room, state the rationale for each:

level of consciousness-

skin color-

TPR and BP-

reflexes-

amount and type of drainage-

location and type of tubes-

type and amount of IV infusion-

presence of respiratory devices (airway, andotracheal tube, O_2, etc.)-

19. Describe the patient's behavior as he goes through the stages of recovery from anesthesia. Identify special precautions to be taken when certain anesthetic agents have been used.

20. State the criteria used to assess the patient's need for pain medication in the recovery room and during the later post-operative period.

21. Write a sample of nursing notes for a patient returning to his room from the recovery room.

22. State the rationale for early post-operative ambulation.

23. Describe the post-operative assessments and actions in relation to maintenence of nutrition and excretion and oxygenation.

24. Describe the process of wound healing and the nursing responsibilities and interventions which facilitate it.

Terminal Competency #18: Recognizes abnormal signs and symptoms including common diagnostic test results, and initiates appropriate action.

Preview: Identification of the implications for nursing care presented by post-operative patient complications.

Level Competencies

18.201   Given signs and symptoms experienced by patients receiving blood component therapy, identify the types of reactions. State the priorities for nursing action and the rationale.

18.202   Given patient situations, identify the signs and symptoms of these post-operative complications: hemorrhage, atelectasis, wound infection, evisceration, and abdominal distention and intestinal obstruction. Discuss the initial nursing intervention.

Assessment

18.201   Objective quiz.

18.202   Discussion of patient situations.

Learning Activities

1.   Read selectively from references.

2.   Review videotape, "Postoperative Care".

3.   Complete the programmed instruction, "Recognizing Early Signs of Internal Hemorrhage".

4.   Review Enabling Competencies Study Guide for the surgical patient, Module IID-19a.

5.   Observe abdominal and thoracic surgical procedures and identify factors which might contribute to postoperative patient problems, i.e. manipulation, positioning, blood loss, type of anesthetic agent.

6.   Provide postoperative care for patients of various ages in the recovery room and clinical divisions. Note assessments and interventions which would prevent serious postoperative complications.

7.   Listen to the audio tape, "Interview with the Director of the Leon County Blood Bank". Note particularly the factors which prohibit the legal donation of blood, the procedures for collecting and storing blood, and the financial aspects of blood component therapy.

8. Attend a seminar on types of blood reactions. Spend obser-
    vation period at Blood Bank.

9. Observe an intravenous therapy nurse administering blood.
    Note the type of equipment used, safety precautions taken,
    and charting done. Discontinue blood therapy.

10. Look at the charts of patients receiving blood component
    therapy. Record diagnosis, type of blood component given,
    and patient reaction to therapy.

References

1. Auld, Craven and West. "Wound Healing," Nursing '72
    (October, 1972) 36-40.

2. Bardicks, Katherine. Patterns of Shock: Implications for
    Nursing Care. Chapters 5-8.

3. Brunner, et.al. Textbook of Medical-Surgical Nursing.
    J.B. Lippincott, 2nd edition, 1970.

4. Child, Judy, Douglass Collins and Janis Collins. "Blood
    Transfusions," American Journal of Nursing (September, 1972)
    1602-1605.

5. Collart, Marie E. and Janice K. Brenneman. "Preventing
    Postoperative Atelectasis," American Journal of Nursing
    (October, 1971) 1982-1987.

6. Moidel, et.al. Nursing Care of the Patient with Medical-
    Surgical Disorders. McGraw-Hill, 1971. 146-155.

7. Moore, F.D. "Blood Transfusions: Rates, Routes and Hazards,"
    Nursing Clinics of North America (June, 1966).

8. Parsons, M.C. and G.J. Stephens. "Postoperative Compli-
    cations: Assessment and Intervention," American Journal of
    Nursing (February, 1974) 240-4.

9. "Shock: Different Kinds...Different Problems," Nursing '74
    (May, 1974) 43-7.

10. Simeone, F.A. "Shock," American Journal of Nursing (June,
    1966) 1286-1294.

11. Sun, R.L. "Trendelenburg's Position in Hypovolemic Shock,"
    American Journal of Nursing (September, 1971) 1758-1759.

12. "Symposium on Surgical Infections," Surgical Clinics of
    North America (December, 1972).

13. Wiley, Loy. "Staying Ahead of Shock," Nursing '74 (April,
    1974) 1927.

Terminal Competency #20: Identifies rehabilitative needs and provides indicated nursing assistance.

Preview: Identification of need for home visit for surgical patient and development of teaching plan.

Level Competency

20.201 Given adults and children who have had surgery, determine the need for a post-hospitalization visit and write objectives for the visit. Make and evaluate the visit if possible.

Assessment

20.201 Write a plan for post-hospitalization rehabilitation visit for the patient you used for 19.202. Include objectives for home visit, and initial patient teaching prior to discharge. Discuss plan with faculty member prior to visit and discuss results after the visit.

Learning Activities

1. Read selectively from references.

2. Attend seminar on the home visit.

3. Participate in a team conference on a surgical floor, and determine criteria for a follow-through visit for a surgical patient.

4. Take part in rounds on a surgical floor and/or listen to a report at change of shift on a surgical floor, and make a list of patients who would benefit from a home visit following discharge. List criteria for the visit.

5. Make a theoretical list of six patients (three children) who have had different kinds of surgery, and identify nursing assistance for a post-hospitalization visit.

6. Spend at least one day in a physician's office observing postoperative check-ups. Discuss your experiences in a seminar.

References

1. Leaky, Cobb and Jones. Community Health Nursing. Chapter 6, "The Community Health Nurse and Communication."

2. Matheney, Ruth. Fundamentals of Patient-Centered Nursing. 1972. Chapter 15.

GUIDELINES FOR HOME VISIT - SURGICAL FOLLOW-UP - Competency 20.201

PURPOSE: To assess the degree of progress the client has made in the
home environment since hospitalization. (See "Analysis of
Surgical Experience", 19.202)

1. Obtain the client's consent to make the visit.

2. Secure specific address and phone number.

3. Plan with the client the date and time of the visit. Visits are
to be made in the "daylight hours" unless approved by the faculty
consultant.

4. If for some reason, the visit cannot be made as planned, the
client should be notified as soon as possible and the visit
rescheduled.

5. Wear uniform with brown hose, casual shoes and no cap.

6. Home visits should be made within a week of the client's hospital
discharge.

7. No nursing care activities should be performed in the home
setting. If nursing needs are identified that are of a life
threatening nature, the client/family should be advised to notify
the physician. If the needs identified are not of a life
threatening nature, students should see their faculty consultant
as soon as possible.

8. Faculty consultants will not routinely attend students on home
visits unless requested.

PRE-OPERATIVE CHECK LIST

	YES	NO
Op permit signed and witnessed		
Hbg. 10 Gms or below reported to Dr. and Anesthetist just prior to giving pre-op		
CBC done		
Urinalysis done		
History and physical completed		
Hospital gown		
Lipstick removed		
Fingernail polish removed		
Bobby pins removed		
Dentures removed		
Contact lenses removed		
Prosthesis removed		
Jewelry removed		
Valuables locked up Location_____		
IBM cards (10) in envelope on chart back		
Addressograph plate on chart		

Skin prep done by_____
Checked by_____

Pre-op Med_____

Time_____ Given by_____

Time voided
or
Foley inserted_____

BP_____ TPR_____

Triple identification of patient
by_____

(O.P. Personnel check O.R. "Call slip" with bed tag, identa-wrist band and verbally with patient.)

FOR STERILIZATION PROCEDURE

	YES	NO
Sterilization permit signed and witnessed, on chart		

FOR ELECTIVE A.B.

	YES	NO
Papers signed, witnessed and notarized		

FOR CAESAREAN SECTION   Sign initials in box

	YES	NO
Identa-wrist bands made out and on chart.		
Kreiselman checked: O₂ - one full tank plus one half, or more, filled.		
Reg-U-Vac suction		
Catheters #5-#8-#10		
Infant and premie mask		
Manometer water level at "0"		
Bulb Syringe		
Fetal Scope		

OPERATIVE PERMIT

Date_____ Time_____ PM AM

1.   I authorize the performance upon _____

of the following procedure _____
                                         (procedure)

_____

to be performed by Dr. _____

2.   I consent to the performance of operations and procedures in
       addition to or different from those now contemplated, whether or not
       arising from presently unforeseen conditions, which the above-named
       doctor or his associates or assistants may consider necessary or
       advisable in the course of the procedure.

3.   I consent to the administration of such anesthetics and/or diagnostic
       procedures necessary or advisable by the physician responsible for this
       service.

4.   I consent to the disposal by hospital authorities of any tissue or
       parts which may be removed.

5.   The nature and purpose of the procedure, possible alternative
       methods of treatment, the risks involved, and the possibility of compli-
       cations have been explained to me. No guarantee has been given by
       anyone as to the results that may be obtained.

                                         Signed _____

Witness _____

Comments:

APPENDIX 3

Jury and Grading Policies in the COA

175

Policies on the Use of Juries

in the

Curriculum of Attainments

Principal Concept

The principal concept of the Curriculum of Attainments is that
degrees are awarded on the basis of attainments certified by faculty
juries without regard to the amount of time or means by which the
attainments are met. Thus, the COA provides the unique element of
separating instruction from evaluation in the educational process.
Therefore, the jury in the COA certifies that scholarly standards have
been maintained under the separation of instruction and evaluation.
The major function of the jury, then, is to formulate reliable and
valid assessment tasks with explicit performance standards for generic-
level attainments which reflect the desired outcomes of an educational
program. The following policy guidelines are set forth on the use of
juries in the COA by the COA Project Advisory Committee.

Policy #1 - Jury Membership: A jury for the certification of a generic-
level attainment will consist of the following:

1) at least two departmental or program faculty members (or
    qualified instructors) one of whom is a specialist in the
    content area or skill area to be certified;

2) one practicing professional or lay authority from outside
    of the academic domain who possesses competence (as determined
    by the appropriate department review committee) in the applied
    knowledge of the discipline;

3) when applicable, a representative from a student's declared
    minor field--in graduate programs only;

4) a maximum of four individuals including the practicing profes-
    sional will participate in voting on a given member's jury
    examination;

5) mentors will not serve as voting members of juries, but may
    be present during a jury examination to serve as a mediator
    or interpreter.

Exception regarding use of outside practicing professionals:

    When a sufficient supply of qualified practicing professionals
    cannot be found within the local area, or when insufficient
    monies are available for the payment of per diem or honorarium
    for participation on all juries for all students in a program,
    the generic attainments comprising the program must be inspected
    at least once per year by a qualified practitioner or lay

authority. A practitioner must also witness a jury session
for at least five individual students. When a practicing
professional or lay authority is unable to serve on a jury
(e.g. a no-show), a departmental faculty member must serve
in his/her stead in order that a jury always consists of
at least three members.

Faculty members who serve as substitutes for the practicing
professional or lay authority should demonstrate professional
experience which includes significant contact with practicing
professionals through previous employment, summer work, or
consulting. A list of faculty members who will serve in this
capacity will be submitted to the COA Project Committee in
care of Dr. Joe Grosslight, Chairman for the 1975-76 academic
year. However, this procedure should be the exception, not
the rule.

Policy #2 - Student Records: The attainment-based transcript will contain
the names of at least two faculty members and one practicing professional
ascribed to each generic attainment (except in cases when a faculty member
substitutes for a practicing professional). Therefore, three names will
always appear on the attainment transcript denoting the certification of
a generic attainment. The attainment transmittal form sent by the mentor
to the registrar will contain signatures of those individuals who served
on a student's jury for each generic attainment.

Policy #3 - Public Review of Attainments and Their Standards: The attain-
ments comprising the program, assessment techniques used by juries and
standards for performance will be open to departmental and public review.
Members of the faculty or the public may observe a jury examination upon
permission secured from the student under examination.

Policy #4 - Standards for Attainment: Minimum or sufficient standards for
performance are established through the process of arriving at consensus
among several competent professionals. Effort should be maintained to
include as many departmental faculty members as possible in the jury pro-
cess. Plurality of membership insures attainment validation through a
diversity of members. Furthermore, a reasonable continuity of membership
among juries should be maintained in subject matter areas to insure con-
sistancy and reliability of standards among juries. Finally, a jury will
examine students only on subject content or skill areas consistent with
the statement of attainment.

Policy #5 - Grievance: Students may appeal a grade awarded by a jury
through normal grievance procedures already existing within the conventional
academic program.

Policy #6 - Assessment Techniques: The spirit of the COA holds that generic level attainments are assessed directly. Thus, student performances reflecting generic attainment will inevitably involve complex cognitive and psychomotor skills. Therefore, multiple assessment techniques are encouraged for the demonstrations of each generic attainment. These may include the following:

1. Oral exams
2. Essays
3. Demonstrations
4. Portfolio
5. Objectively-scored tests
6. Anecdotal records
7. Supervisor ratings
8. Critical incidences
9. Attendance, punctuality
10. Unassigned achievement which denote attainment.

Policy #7 - Grading: The following grading policy was adopted and sanctioned earlier, after discussion with COA mentors and the Dean of Faculties. (See attached policy statement.)

COA Grading Policy

The following grading policies for COA programs are posed after having consulted with mentors and faculty from each program and represent both a synthesis and a consensus for both existing and planned grading practices. The policies are as follows:

I. Grades Awarded. A, B, or I (Incomplete) grades will be awarded by juries for performances demonstrating terminal or exit attainments required for the degree. Consistent with present grading practices in the conventional program, S or I grades may be used for jury evaluation in graduate programs.

Assumptions:

1) That a B level performance represents a minimum standard for proficiency and this performance is comparable to B performances in similar assessment situations in the conventional curriculum.

2) That the A grade represents a superior performance and is equivalent to a similar performance standard in analogous assessment situations in the conventional curriculum (when the analogy is appropriate).

II. Policy on Trials: A student may be allowed to stand for the first jury exam for an attainment at least twice in order to earn an A grade. However, in jury exams for each subsequent attainment, only one jury performance will be permitted to earn an A grade. If, following the initial jury review, a student does not demonstrate the level of proficiency required for a B grade on an attainment on the first trial, he/she will be awarded a grade no higher than a B on reexamination of that attainment.

Assumptions:

1) Since the first examination before juries is an unfamiliar and, perhaps, an intimidating experience which may impede maximum performance, the opportunity for retesting on the first attainment without penalty is deemed fair. This procedure also provides for students an indication of the performance standard required for an A grade and for juries an opportunity to establish consensus when subjective appraisals are made.

2) The position is that A grades in the COA should represent an outstanding performance in a "first attempt" testing situation. This concept parallels

the predominant grading policies in the conventional
curriculum where all grades are based on first-trial
performances. This procedure will facilitate an
interpretation of the A grade by future admissions
officers or employers. However, because of the time-
variable nature of the COA, an exact analogy cannot
be made. A further issue to consider once the program
and learning resources have been firmly established
and assessments standardized, time limits could be
imposed in which to earn an A grade. This would provide
a motivation force for students to sustain productivity.

III. **Retroactive Assignment of Letter Grades to Learning Package and the Computing of a Grade Point Average.** As learning packages
are completed satisfactorily in the process of preparing for
the demonstration of a terminal attainment, a grade of S is
assigned. A student is allowed to stand for a jury when all
learning packages for a terminal attainment are completed.
Following the jury exam on a terminal attainment, the letter
grade (i.e. A, B, etc.) indicating the level of performance is
retroactively assigned to each preparatory learning package
leading to the attainment. Therefore, the grade point average
is determined by dividing the total credit hours taken in learning
packages by the quality points earned from the letter grades
retroactively assigned to them. Should a student transfer out
of the COA program to the conventional program or should a student
drop out of school prior to a terminal jury assessment, the grade
of S remains on the transcript for those learning packages
completed.

IV. **Withdrawals.** A WD grade is assigned to each learning package
in instances where a student formally withdraws from school
before completing a learning package for which he/she has
previously registered.

V. **Appeals.** Normal grade appeal procedures apply to COA students
just as in the case of conventional students.

APPENDIX 4

Attainment-based Transcript

Mr. Mrs. Miss	NURSE	EMMA	(NMN)	
Name	Last	First	Middle	Social Security No.

999 HEALTH CARE WAY: HOMETOWN FLA 00000

Home Address

6/23/54	9/74	
Date of Birth	Date of Admission	Date Withdrew

PROFESSIONAL SCHOOLS

Academic Division

THE FLORIDA STATE UNIVERSITY TALLAHASSEE, FLORIDA 32306

This Transcript is not Official Unless it Bears the Seal of The Florida State University

CURRICULUM OF ATTAINMENTS

CODE

C = COMPETENCY
M = MODULE

COMPETENCY ASSESSMENT PROCEDURE (asmnt):

1 = demonstration
2 = written essay
3 = objective test
4 = oral exam
5 = portfolio
6 = anecdotal records
7 = other

Grading System

A-4 q. pts.	Excellent
B-3 q. pts.	Good
C-2 q. pts.	Average
D-1 q. pts.	Barely Passing
F-0 q. pts.	Failed
I-0 q. pts.	Incomplete
P-0 q. pts.	Passed
S-0 q. pts.	Satisfactory
U-0 q. pts.	Unsatisfactory
W-0 q. pts.	Withdrew Passing
WD-0 q pts.	Withdrew with Dean's Permission

CLASSIFICATION

10 – Freshman
20 – Sophomore
30 – Junior
40 – Senior
51 – Beginning Graduate
52 – Advanced Graduate
61 – Post High School Special
62 – Post Baccalaureate Special

CODE	Course Prefix	Course Number	DESCRIPTION OF COMPETENCY AND MODULES *See Attached Terminal Competency Sheet	*COMPETENCY NO.	Date Begun	Date Passed	Hr.	Grd.	a s m n t	MENTOR OR JURY MEMBERS
			FALL QUARTER 1974							
M	NSG	A491	FOUNDATN CONTMP NURS	1,8,12 16	9/20	10/22	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	B491	INTRO PATIENT CARE	1,8,12 16	9/20	10/23	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	C491	INTRO NURSING PROCESS	2,8,12 13,18	9/20	11/8	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	D491	INTRO HEALTH ASSESMT	3,9,14	9/20	11/7	2	B	1,2 3,4	PAULINE M. HAYNES
M	NSG	E491	INTRO HEALTH ASSESMT	4,7,10 19	9/20	11/15	2	B	1,2 3,4	PAULINE M. HAYNES
			WINTER QUARTER 1975							
M	NSG	A492	PROF ROLE DEVELOPMENT I	1,2,4	11/14	2/11	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	B492	COMMUNICATION & PERCEPTION	8,9,10 11	11/14	2/21	2	B	1,2 3,4	PAULINE M. HAYNES
M	NSG	C492	LIFE CYCLE ADAPTATIONS	12	11/14	2/9	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	D492	HEALTH HAZARDS & SURGICAL EXPERIENCE	12,13 18,19,20	11/14	2/13	2	B	1,2 3	PAULINE M. HAYNES
M	NSG	E492	PROCEDURAL DEVELOPMENT I	17	11/14	2/21	2	A	1,3	PAULINE M. HAYNES
M	NSG	F492	PROCEDURAL DEVELOPMENT II	16,17	11/14	2/28	2	A	1,3	PAULINE M. HAYNES
			SPRING QUARTER 1975							
M	NSG	G492	PROFESSIONAL ROLE DEVELOPMENT	3,4,6,7	2/26	4/28	2	A	1,2	PAULINE M. HAYNES
M	NSG	H492	COMMUNICATION & PERCEPTION II	9,10,11	2/26	4/28	2	B	2,3	PAULINE M. HAYNES
M	NSG	I492	HEALTH ASSESSMENT II	14	2/26	5/12	2	A	1,2 3,4	PAULINE M. HAYNES
M	NSG	J492	CONCEPTS OF REHABILITATION	14,15,19	2/26	4/21	2	B	1,3	PAULINE M. HAYNES
M	NSG	K492	BIOPATH EPISOD ILL I	17,18	2/26	5/8	2	B	1,2 3,4	PAULINE M. HAYNES

167

CODE	Course Prefix	Course Number	*See Attached Terminal Competency Sheet DESCRIPTION OF COMPETENCY AND MODULES	COMPE-TENCY NO	Quarter Hours			Grd.	a s m n t	MENTOR OR JURY MEMBERS
					Date Begun	Date Passed	Hrs.			
M	NSG	L492	BIOPATH EPSOD &FF II	19	2/26	5/13	2	B	1,2 3	PAULINE M. HAYNES
			SUMMER QUARTER 1975							
M	NSG	A493	PROF ROLE DEV III	1,5,6	6/23	8/23	2	A	2,4 7	PAULINE M. HAYNES
M	NSG	B493	COMM AND PERCEP III	2,4,8	6/23	8/23	2	A	1,2 6,7	PAULINE M. HAYNES
M	NSG	C493	LIFE CYCLE ADAPT II	10,11 12	6/23	8/23	2	B	1,2 3,7	PAULINE M. HAYNES
M	NSG	D493	HEALTH HAZARDS II	12,13	6/23	8/23	2	A	2,7	PAULINE M. HAYNES
M	NSG	E493	INTRO EXT HEALTH PRO	2,8,18	6/23	8/23	2	A	2,3 7	PAULINE M. HAYNES
M	NSG	F493	PROG DEV III	16,17	6/23	8/23	2	A	1,3 6	PAULINE M. HAYNES
			FALL QUARTER 1975							
M	NSG	G493	CONCEPTS OF ONOLOGY	19	5/19	5/20	2	B	1,2 3,4	ANNE BELCHER
M	NSG	H493	COMMUNITY AND MENTAL HEALTH NURSING	2,15 19	10/29	10/31	2	A	1,2 3,6	ANNE BELCHER
M	NSG	I493	HEALTH ASSESSMENT III	14	10/6	10/16	2	A	1,3	ANNE BELCHER
M	NSG	J493	CONCEPTS OF REHABILITATION	4,20	10/8	11/1	2	A	1,2 3,4	ANNE BELCHER
M	NSG	K493	BIOPATHOLOGY OF EXTENDED HEALTH PROBLEMS I	19	9/31	10/9	2	B	1,2 3,4	ANNE BELCHER
M	NSG	L493	BIOPATHOLOGY OF EXTENDED HEALTH PROBLEMS II	19	9/25	10/14	2	B	2,3 4	ANNE BELCHER
M	NSG	A494	PROF ROLE DEVELOPMENT IV	1,2,3	10/29	1/15	2	A	1,2 3,4	ANNE BELCHER
M	NSG	B494	COMMUNIC & PERCEPTION IV	6,10	11/15	1/19	2	A	2,4	ANNE BELCHER
M	NSG	C494	HEALTH ASSESSMENT IV	11,14	11/25	1/8	2	A	1,2 4	ANNE BELCHER

Transcripts Sent

184

185

198

Mr. Mrs. Miss	NURSE	EMMA	(NMN)	000-00-0000
	Name Last	First	Middle	Social Security No.

999 HELTH CARE WAY; HOMETOWN, FLA 00000

Home Address

6/23/54	9/74	
Date of Birth	Date of Admission	Date Withdrew

PROFESSIONAL SCHOOLS
Academic Division

THE FLORIDA STATE
UNIVERSITY
TALLAHASSEE,
FLORIDA 32306

This Transcript is not
Official Unless it Bears
the Seal of The Florida
State University

**CURRICULUM
OF
ATTAINMENTS**

CODE

C = COMPETENCY
M = MODULE

COMPETENCY
ASSESSMENT
PROCEDURE (asmnt)

1 = demonstration
2 = written essay
3 = objective test
4 = oral exam
5 = portfolio
6 = anecdotal records
7 = other

Grading System

A-4 q. pts	Excellent	
B-3 q. pts	Good	
C-2 q. pts.	Average	
D-1 q. pts	Barely Passing	
E-0 q. pts.	Failed	
I-0 q. pts.	Incomplete	
P-0 q. pts.	Passed	
S-0 q. pts.	Satisfactory	
U-0 q. pts.	Unsatisfactory	
W-0 q. pts.	Withdrew Passing	
WD-0 q pts	Withdrew with Dean's Permission	

CLASSIFICATION

10–Freshman
20–Sophomore
30–Junior
40–Senior
51–Beginning Graduate
52–Advanced Graduate
61–Post High School Special
62–Post-Baccalaureate Special

CODE	Course Prefix	Course Number	*See Attached Terminal Competency Sheet DESCRIPTION OF COMPETENCY AND MODULES	*COMPE-TENCY NO.	Quarter Hours Date Begun	Date Passed	Hrs.	Grd.	asmnt	MENTOR OR JURY MEMBERS
C		1	Knows philosophical,historical, educational, legal influences on contemp. nursing practice.			2/10/76		A	1,2 4,5	Maria Cowart, Diane Foote, Janet Burge, Patricia Pittman (faculty) and
C		2	Systematically uses nursing process and establish priorities for nursing intervention			2/10		A	1,4 5,7	Joan Williams (practicing professional) served as jurors for all terminal
C		3	Uses teaching-learning theory to design and implement instructional programs.			2/10		B	1,4 5,7	assessments.
C		4	Collaborates with members of nurs. team and other health professionals in prov. care, and in resource and leadership capacity			2/10		A	1,4 5,7	
C		5	Articulates/interprets current issues and trends in nursing and health care.			2/10		A	1,2 4,5	
C		6	Incorporates current nursing info. and re-search findings into nursing practice			2/10		A	1,2 4,5	
C		7	Acts as change agent for improve./expansion of nursing practice and health care delivery.			2/10		A	1,2 4,5	
C		8	Utilizes approp. resources. Makes planned and comprehensive obser. and accurately reports/records significant info.			2/10		B	1,3 4,5	
C		9	Uses approp. interpersonal/interviewing tech. to collect data and estab. therap. relationship			2/10		B	1,3 4,5	
C		10	Idenf. variables affecting client's ability to cope with health problems.			2/10		B	1,3 4,5	

(OVER)

186

CODE	Course Prefix	Course Number	*See Attached Terminal Competency Sheet DESCRIPTION OF COMPETENCY AND MODULES	GOMPE-TENCY NO	Quarter Hours			Grd.	a s m n t	MENTOR OR JURY MEMBERS
					Date Begun	Date Passed	Hrs			
C		11	Recog. abnormal patterns of behav., communication/adaptation and initiates approp, action.			2/10		B	1,3 4,5	
C		12	Recog. normal phy., mental, behavioral develop. for individuals of all ages.			2/10		A	1,3 4,5	
G		13	Knows major health hazards to individuals/fam. thru out life cycle and epidem. and preventive implications.			2/10		B	1,3 4,5	
C		14	Conducts health assess., including med. history to determine client's level of wellness.			2/10		A	1,3 4,5,7	
C		15	Prov. preventive health guidance and main. services to individuals, fam., community groups. Refers clients to approp. agencies/resources.			2/10		B	1,4 5,7	
C		16	Provides nursing assist. to meet basic needs of individuals all ages and depend. states setting.			2/10		A	1,4 5,7	
C		17	Perf. therapeutic procedures to support/restore norm. body processes and knows rationale.			2/10		A	1,4 5,7	
C		18	Recog. abnormal physical signs/symptoms and initiates appropriate action.			2/10		A	1,4 5,7	
C		19	Correlates patient's signs/symptoms, diagnosis, med. and nursing intervention with biopathology of major episodic and extended health problems.			2/10		B	1,4 5,7	
C		20	Identifies rehab. needs and prov. indicated nursing assistance.			2/10		B	1,4 5,7	

Transcripts Sent

APPENDIX 5

Guidelines for the Development of Learning Packages

190

Guidelines

for

Learning Packages

in the

Curriculum of Attainments

The learning package is to the Curriculum of Attainments (COA) as the course is to the conventional curriculum. That is, the learning package is the basic unit of instruction for accounting. However, while a learning package is assigned a course number, a title and a specified number of credit hours, it is different than a typical course. Major differences between a course and a well-designed learning package are summarized in the following table.

Table 1. Course Characteristics vs. Learning Package Characteristics

Typical Course	Learning Package
1. Instructor dependent.	1. Maximally self-instructional.
2. Instructor paced.	2. Learner paced.
3. Outcomes rarely stated.	3. Outcomes stated specifically.
4. Learning activities determined by instructor.	4. Learning activities individualized with reference to specified assessment situations.
5. Norm referenced testing and grading practices, i.e. A, B, C... grades.	5. Criterion referenced testing with multiple opportunities to achieve mastery. Grades are Satisfactory (S) or Incomplete (I).
6. Focus on subject content.	6. Focus on demonstrable behavior.

Purpose of the learning package. The basic function of the learning package is to provide structured learning events which enable students to acquire specific skills or knowledge required to demonstrate the comprehensive attainments required for the degree. Learning packages, which contain one or more organized learning events, may appear in the following ways.

1. a single autonomous unit -   A ———→ [Attainment]

2. in series - A ···· B ·· C ··· [Attainment]

3. in parallel - A ⟶ B ⟶ C

[Attainment]

11 ⟶ H ⟶ 0

4. in combination -

C ⟶ D

A ⟶ B   ⟶ [Attainment]

11
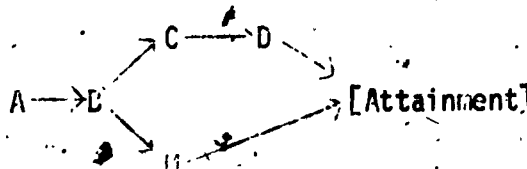
The nature of the development of basic skills required to demonstrate an attainment determines how learning packages are sequenced. Parallel units represent alternative ways of learning the material; series units are used for sequential, pre-requisite information.

Structure of the Curriculum

There are three basic elements which describe a curriculum in an attainment-based mode: 1) generic attainments; 2) specific competencies, and 3) assessment strategies for generic attainments and specific competencies. In some cases, specific competencies may be broken down into behavioral objectives in order to describe a specific competency fully.

Attainments and Competencies

Generic attainments describe the program in terms of broad areas of knowledge or skills. Examples of generic attainments may be:

1. Knows and applies basic principles of Descriptive Oceanography. (Biology).

-3-

2. Demonstrates methods and techniques of implementing
   a planning program. (Urban and Regional Planning).

3. Recognizes abnormal patterns of behavior, communication
   and adaption and initiates appropriate action. (Nursing).

Specific competencies are expressed in terms of more directly
observable behaviors. Examples of specific competencies may be:

1. Defines tide wave types: semi-diurnal, diurnal, and
   mixed. (Biology).

2. Determines the strengths and weakness of a master plan
   for an urban renewal project. (Urban and Regional Planning.)

3. Identifies barriers to interpersonal communication. e.g.
   lack of attention, non-sequitor responses, lack of feeling
   responses, overly aggressive or hostile responses, moralizing
   or judgmental responses, etc. (Nursing).

In the three pilot programs, the ratio of generic attainments to
specific competencies is as follows:

Program	Generic Attainments	Specific Attainments
Biology	18	162
Nursing	20	95
Urban and Regional Planning	27	39

Learning packages are formed from clustering related specific
competencies into logical learning units. The contents of a typical
learning package are:

1. Title
2. Number of credit hours
3. Learning package (module) number
4. List of prerequisite skills or learning packages

193

5. 'List of specific competencies to be mastered in package
6. Generic attainment to which specific competencies relate
7. Statement of rationale
   a) relationship of competencies to total curriculum
   b) explanation of sequencing with other packages
8. Testing strategy for each specific competency with specified performance standard
9. Pretests
   a) diagnostic test with each question (or task) related to a specific competency
10. Handbook or study guide
11. Learning resources with package
12. Supplementary learning resources
13. Practice exercises
14. Practice tests
15. Posttests (2-3 forms)
16. Evaluation forms (for revising package)

Description of Contents

1. _Title._ The title should be brief and specifically related to the skill or content to be mastered in the package, e.g. Performing Eye Examinations, Ocean Currents, Descriptive Statistics, etc.

2. _Credit hours._ The number of credit hours assigned to a learning package is determined by assessing its relative proportion of the total credit hours assigned to the COA component of the upper division or masters degree program. As an example, the COA component of one upper division program is 80 credit hours and the list of specific competencies might be clustered into 40 logical learning units to be developed into learning packages. These 80 credit hours are disbursed among the 40 learning units in such a way that the sum of credit hours for the 40 packages is 80. The exact number of credit hours per individual package is determined by the quantity and depth of material relative to other packages. Some packages may be assigned one credit hour while others may be designated up to 9 or 10 credit hours. The number of credit hours assigned to each package must be a whole number since the registrar will not accept fractions of credit hours.

3. _Learning package number._ The DIS (directed individual study) credit numbers (491-494 and 591-594) are preferred numbers to be used in assigning course numbers to packages. In order to expand the total number of possible learning packages, a single letter is added to the number, e.g. 491A, 491B, 491C, etc. Thus, if all DIS numbers and letters

- 5 -

are used, the numbering system could accommodate 104 (i.e. 4 x 26) individual learning packages. Some departments may have already assigned several of these numbers to already existing conventional DIS courses. Therefore, caution should be exercised so as to not duplicate COA learning package numbers with already assigned conventional DIS courses.

4. List of prerequisite skills or learning packages. Before beginning a learning package, a certain knowledge level may be required in order to understand the contents of the package. Premature attempts may result in wasted time if a student is not well enough prepared to master skills under self-direction. Examples of prerequisite knowledge are: 1) the mastering of basic vocabulary in anatomy or certain learning packages in Nursing; 2) a minimum level of competency in calculus in Marine Biology; or, 3) a basic proficiency in written English in Urban and Regional Planning. Basic prerequisite knowledge may be recommended or required depending upon the difficulty of content of the package. Ways in which a student may attain prerequisite knowledge may also be identified in this section.

5. Outline specific competencies to be mastered in the package. The development of a learning package assumes that the curriculum has been described in terms of generic attainments with specific competencies.

This section lists the specific competencies to be mastered in the package. In the case of some programs, specific competencies may be further reduced in terms of behavioral objectives in order to fully describe each specific competency. If so, appropriate behavioral objectives are stated under each specific competency.

6. The generic attainment to which specific competencies relate. Normally, several learning packages prepare a student for a generic level attainment. Hence, several learning packages may list the same generic attainment in this section. The listing of the related generic attainment provides a student with a reference point while he/she works through the package.

7. Statement of rationale. Basically, the rationale tells the student why the student is to learn the competencies included in the learning package. This section is intended to provide meaning and continuity for a student's learning activities. Two types of rationale are common:

    a. The relationship of the package's competencies to the total curriculum.

        Statements here may describe why the learning of each competency is necessary either for the attainment of more complex competencies or for the functioning of a competent professional.

-6-

   b. The explanation of the sequencing of competencies
within the package or the relationship to competencies
acquired in other packages.

      A description of how each specific competency
relates to other competencies learned in series
or in parallel with other competencies is also
stated in this sub-section.

   8. <u>Testing strategy for each specific competency with a specific
performance standard</u>. Assessment of competencies is, perhaps, the most
important aspect of competency-based education. The basic components
of an assessment strategy should be phrased in terms of: Given
<u>Situation A</u>, the student will respond with <u>Task B</u> at <u>Performance Level
C</u> as <u>Evaluated by D</u> according to <u>Criteria E</u>.

Examples of testing strategies may be:

   I. Specific Competency from Urban and Regional Planning:
The student is able to determine how to apply general
systems theory for problem solving.

     Testing strategy: Given a planning problem situation, the
student will write a statement in which the written paper
receives an adequate rating or higher as scored by three
jury members on each of the following criteria:

       1) problem clarification
       2) appropriateness of system chosen
       3) identifies components of system
       4) describes interrelationships among components
       5) identifies constraints.

   II. Specific competency from Biology:
The student demonstrates a thorough knowledge of the
salinity concept.

     Testing strategy: Given a problem set requiring short
answers, the student will respond correctly to 75% of
the items as scored by the mentor. The standard is
established by a preliminary review of the test by a
jury.

   III. Specific competency from Nursing: Uses an ophthalmoscope
and otoscope to examine a client's eyes and ears and
records and interprets the findings.

     Testing strategy: (a) In a role-playing situation with
another student, the student will operate an ophthalmoscope

and an otoscope and record the findings. The finding
will be verified by the mentor with 95% accuracy, a
standard set forth by the jury.
(b) Given the data above, the student will evaluate
the findings based on normative health standards for
the age and sex of the patient according to the follow-
ing criteria: complete logical conclusions, accuracy,
brevity, etc. The jury will assign a pass or "needs
further practice.".

9. Pretests. A pretest can serve the following functions:
1) shows the student what more he needs to know in order to meet the
requirements of the package; 2) assists the mentor in planning individ-
ualized learning experiences for the mastery of competencies; 3) serves
as a practice device and as an advance organizer for how the student
could prepare for the posttest; 4) provides baseline data for the deter-
mination of the effectiveness of the learning package as a learning
device; 5) provides for a student an indication of the required mastery
level so that he/she will reduce either under-studying or over-studying
for the posttest.

When the posttest is an objectively-scored test, items may be
criterion-referenced to each specific competency (or behavioral objective
when appropriate). In addition, when a large pool of items exists, the
pretest may consist of items randomly selected from the pool. Should a
student earn a score that exceeds the specified mastery level for the
package, he/she can proceed on to the subsequent learning package.

10. Handbook, or study guide. Once a student identifies areas of
competence and deficiency from the pretest, he/she can make use of a
learning activity guide to suggest means by which competencies may be
attained. The learning activities guide should be referenced according
to each specific competency in the package. The competency statement,
the testing strategy and the learning activities should interrelate as
one cohesive unit. First, all students should easily comprehend what
they must do to demonstrate a competency and how they might acquire the
required skill or knowledge. Then, the guide should describe the learn-
ing activities with available materials and how these may be used to
attain each competency in the package. The use of audio tapes to provide
direction is highly encouraged. Through the use of audio tapes, the mentor
may communicate with students efficiently and inexpensively.

11. Learning resources within package. A variety of methods for
helping students master competencies may be made available to students
in each learning package. The employment of a variety of learning media
is recommended to accommodate a variety of learning styles as well as
to provide more than one learning experience to insure higher degrees
of comprehension, as well as to help avoid boredom. Each learning
activity should have its own specific set of objectives with pretests
and posttests in order that students may receive feedback from their
practice efforts. A learning activity may consist of one to several

-8-

learning events (i.e. a stimulus, a student response, and a reaction to the student response). Care is to be taken to explicitly indicate the relationship of the learning activity to the competency it is helping to develop. The following learning activities may be employed for learning events:

a. observe expository media (video tape, slide tape, audio tape, film, microfiche, etc.)
b. interactive media (computer)
c. seminars
d. workshops
e. print materials
f. field experiences
g. formal lectures (live, videotape, audio tape)
h. individual tutorial
i. internship
j. programmed texts
k. bibliography.

12. Supplementary learning resources. These may include:

a. faculty members with special expertise
b. related learning packages
c. concurrent lectures in conventional courses.

13. Practice exercises. Problem sets or series of logically-sequenced questions may assist students in mastering the required competencies. With references to where a student may consult if he/she was unable to obtain a correct response.

14. Practice tests. A test with sample items may be provided students to assist them in the process of self-evaluation. Practice tests, when criterion referenced to a specific competency or behavioral objective, may help a student identify material yet to be mastered. Again, each item should be linked to a reference so that students may find pertinent information readily.

15. Posttests. At least two or three forms of a posttest should be developed so that students have multiple opportunities to demonstrate mastery. In addition, validy is enhanced by reducing student collaboration. The posttest should be weighed against the criteria of validity and reliability through the use of jury review and/or an item analysis procedure for criterion-referenced measures provided by the Center for Educational Design.

16. Evaluation forms for revising packages. Each package should have included in it a means by which students may express their attitudes about the package and may suggest ways of improving the package instructionally. A short questionnaire with both likert-type items and open-ended questions could suffice. Sample evaluation questionnaires may be obtained from the Center for Educational Design.

APPENDIX 6

External Evaluation of COA, Paul Caro, HUMRRO

Pensacola, Florida

HUMAN RESOURCES RESEARCH ORGANIZATION

CENTRAL DIVISION

30 June, 1976

Dr. Joseph H. Grosslight
Department of Psychology
Florida State University
Tallahassee, FL 32306

SUBJECT: Report of the Sub-committee to Evaluate the Curriculum of Attainment
Project

Background and Purpose

The Sub-committee to Evaluate the Curriculum of Attainment Project has
reviewed the project as requested by your memorandum dated 2 May, 1975, and
has prepared this report concerning its findings. The Sub-committee, which
consisted of Dr. Robert M. Gagné, Dr. James D. Gwartney, Dr. Robert Kromhout,
all members of the Faculty, and Dr. Paul W. Caro of the Human Resources Research
Organization, met as a body on three occasions to observe the project and to
consult with project staff concerning the collection of data upon which an
objective project evaluation could be based. On two of these occasions we re-
viewed the COA projects in Urban and Regional Planning and in Marine Biology,
and interviewed Faculty and students participating in these programs. On another
occasion, an individual Sub-committee member reviewed the COA Nursing porject
and discussed it with Faculty and student participants. In addition, individual
Sub-committee members, as opportunities permitted, interacted with project per-
sonnel and participating Faculty on an informal basis. Documents describing the
project, including student study guides, instructions to juries, competency
statements, and project staff memoranda and reports, have been furnished each
Sub-committee member.

It is our understanding that the COA project staff is preparing a report
in which data describing the project will be presented. It is further, under-
stood that the staff report will provide an objective basis for an evaluation
of the project and for recommendations concerning the continuation, modification,
or termination of COA activities at the University. The present Sub-committee
report was prepared without access to those data and staff recommendations.
Therefore, this report should not be interpreted as a substitute for the Final
Report to be prepared by the staff. Rather, the purpose of this letter is to
supplement the Final Report by setting forth the Sub-committee's impressions
of the worth of the COA to the University, and to the community it serves, such
impressions having resulted from our limited observations.

Needs Addressed by COA

The COA was designed to address four perceived needs in American higher education.[a] It is our view that three of these needs have been met to some degree. The fourth need, one having to do with the relative cost of administering a COA, could not be considered by the Sub-committee, since cost effectiveness data have not yet become available. We understand that those data will be included in the project Final Report. The three needs which we were able to consider are discussed below:

Need No. 1: To insure creditable standards of student mastery in mass higher education.

It is the view of the Sub-committee that the COA project demonstrated that this need can be met through the COA techniques of juried examination, separation of the instructing and evaluation functions, and comprehensive identification of instructional objectives. We found no indication that the CQA approach necessarily or in practice lowered credit standards, or that a given grade might represent a lower level of achievement for COA students than for conventional students, although the experimental design did not permit us to address the matter of grade equivalence directly. Our impression is that in some cases students may have to attain greater levels of achievement or at least expend greater energies in the CQA project than their counterparts in the conventional program, in order to receive equivalent grades. We found no evidence that the variability in grading standards between COA and conventional courses, in terms of student achievement, was greater than routinely occurs within the conventional program.

Need No. 2: To provide a system which directly credits students for their achievement without regard to time, place of circumstance of learning.

The COA appeared to reduce the degree of restriction regarding time, place, or circumstance of learning vis à vis the conventional program, but it did not remove these restrictions altogether. COA permits students capable of doing so to manage their own time and to schedule their own end-points and examinations. The result of this freedom appears to be that students desiring to do so (often for quite valid reasons) may postpone a particular study or project, or concentrate upon it to the exclusion of other efforts, for a period of time. While this freedom occasionally resulted in postponement of an examination beyond the end of a term and thus extended COA course length beyond that of courses in the conventional program, it less frequently appeared to result in expedited progress through the COA curriculum. Further, while COA permitted students to schedule all their activities, including periods away from the University, it did not appear particularly useful for non-resident students during the period of this project. Non-resident COA students may be penalized more by their absence from campus than are comparable conventional students because they cannot avail themselves of the seminars, group tutoring sessions, and peer tutoring that appears to characterize COA. The schedule freedom permitted by COA appears to offer opportunity for the self-regulating resident student to pursue areas of special interest or to seek higher levels of mastery than might be manageable in the conventional program, but there also appear to be conflicts inherent in a program consisting of simultaneous, fixed schedule classes and COA, with COA tending to suffer the most from such conflicts.

[a] Harris, J. "Reasons for the Curriculum of Attainments", Symposium Paper, 1975. AERA Annual Meeting, March 31, 1975.

Need No. 4: To provide an educational structure which gives students and teachers greater flexibility of means and pace of instruction.

While individualization and personalization of instruction is a goal throughout the University, it is sometimes difficult to achieve. The student-mentor didactic relationship observed in the COA appears to facilitate achievement of that goal. The intensive contact a mentor is able to maintain with a relatively small group of students permits the establishment of a personal relationship not as easily achieved in the conventional program, and this relationship appeared to foster both mutual respect and individualized instruction responsive to student interests and eccentricities.

In addition to his instructional function, the mentor is a student advocate, accountable to a jury of peers for the quality and completeness of the education of his students. While this personalization of the instructor's role does not assure that he will produce a higher quality scholar or practitioner, it permits him to concentrate upon producing a graduate prepared for a productive role in society with minimum regard to time and grading requirements. In this role, the mentor's success is tied more directly and publicly to the success of each and all of his students, first before juries, then before society, than is the case of the instructor in the conventional program. It is a limelight to which some fully qualified professors may not aspire, but one which, in our view, sets COA apart as an educational process which attends to individual students' needs rather than to the average achievement of groups of students.

Other Considerations

Apart from our evaluation of the COA with respect to the needs discussed above, we wish to offer comments concerning a number of specific features of the project. For one, we take note that the project was quite limited in scope. Although the number of COA programs was expanded during the final year, only the relatively lightly populated Nursing, Urban Planning and Marine Biology programs have been in operation long enough for evaluation approaching the thoroughness that this project warrants. While we view these three programs to have been successful in an overall sense and to have met the needs discussed above, the limited scope of the project does not permit us to conclude unequivocally that the high quality of COA instruction observed in these programs can be maintained over extended periods of time, or as participating faculty changes, or as COA becomes available to larger numbers of students. Nor is it clear that COA is suitable for all University majors. In fact, there appear to us to be personnel, both Faculty and students, who may function well in the COA or in the University's conventional program but not equally well in either—or in both simultaneously. Whether this situation reflects inherent limitations of these personnel, or whether they need only to be better prepared through training or orientation to function effectively in a COA or in a mixed COA-conventional program could not be determined. Nor could it be determined whether such personnel represent a significant portion of the University's Faculty and student populations.

We question the feasibility of manning juries as they were manned during the project. The inclusion of an outside, practicing professional may create scheduling and management problems which far outweigh the apparent merit of this concept. Further, the time and faculty resources involved in individual oral examination of potentially large numbers of students could jeopardize an otherwise valuable innovation. We feel that the jury evaluation concept should undergo further study, and modifications such as reduced jury composition, pre-jury oral examinations, and limiting the scope of jury questioning should be considered.

3

We do believe, however, that the educational and experiential benefits to the students of a jury evaluation should not be lost during such modifications.

It appears to be typical of COA in operation that students are expected to assume an unusual degree of responsibility for scheduling their own study time and assessing their own progress. At the same time, they are continually aware of preparing themselves for the critical occasion of the jury evaluation. A question might be raised as to whether this way of managing learning time is an optimum one. The incorporation of student managed opportunities for periodic assessments, along with some reduction of emphasis upon the jury examination, are changes which might broaden the appeal of COA while still providing Faculty and students with the desired flexibility of means and pace of instruction.

There are many other aspects of COA that merit further study. These include determinations of whether the apparent qualitative benefits of COA noted in the three applied programs we reviewed are generalizable to more traditional programs of study; whether the University's present grading system is appropriate to COA; whether there is a minimum or a maximum size for a COA program and whether such limitations are intrinsic to COA; whether COA students acquire useful skills not acquired by traditionally educated students (we suspect they do); and, conversely, whether COA students are denied valuable educational experiences normally available in a conventional program. Clearly, not all questions regarding COA have been resolved in the present evaluation. We believe that further study, oriented toward resolving some of the problems associated with the management of COA on a larger scale than has been attempted thus far, is desirable.

We take note of the overwhelmingly favorable attitude toward COA of the participating Faculty and students. While all of the participants interviewed by the Sub-committee pointed to aspects of COA which they viewed as problems, they also endorsed COA as a valuable addition to the educational and training opportunities provided by the University. Problem areas most often mentioned by COA participants included needs for development of self-discipline, self-pacing, mixing COA with conventional courses, jury scheduling, infrequency of student assessment, switching from COA to conventional programs, and lack of understanding of COA on the part of non-participants. With respect to the latter reported problem, no direct evidence was noted regarding negative attitudes toward COA on the part of non-participants, except among those who simply had been misinformed about COA or who were called upon to serve as jury members when such activities interfered with their responsibilities in the conventional program.

The detailed specification of competencies or of instructional objectives required for mastery in the COA appeared to be a useful adjunct to the instructional process for Faculty who prepared those objectives, for mentors who instructed toward their attainment, for jurors who evaluated the products of the instructional process, and for students whose study is thus directed toward known goals. We noted that in some cases useful competencies were identified which may tend to be overlooked in some of the University's conventionally conducted programs. An example of such a competency is the ability of students to organize and verbalize their thoughts under the stresses of a jury examination.
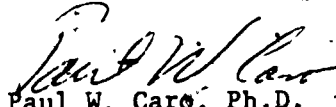
In addition to our evaluation of the project, we addressed in our discussions the future role of COA at FSU and elsewhere. While we viewed COA as offering a meaningful and perhaps beneficial alternative to the University's conventional program, a necessary question concerns whether COA can or should survive at FSU or on any other campus. Just as with any educational innovation, COA must present

a clear advantage over established approaches to instruction or must alleviate a problem which exists in the management of the University and its instructional programs, in its offerings to students, or in some other area. In this respect, a pressing need for COA was not noted by the Sub-committee. The virtue of COA appears to be that it fulfills perceived needs related to alternative means of managing programs and serving students—and therefore is viewed favorably by the Sub-committee—rather than that it alleviated problems which, at least potentially, threaten the continued operation of the University and its conventional programs. Stated another way, COA appears to us to be a solution for which no pressing problem has been identified. Therefore, its future, since it must compete in some measure for the University's limited resources, is not assured. In stating this view of the future of COA, we recognize that data to be presented in the final project might have lead us to a contrary view.

.Summary

In summary, the Sub-committee has conducted a limited review of the COA project and has conferred with Faculty and students participating in it. In preparing this report, we have not had access to objective data collected during the project, nor are we aware of conclusions likely to be drawn from those data. Our judgment is that COA is a meaningful and in some respects a desirable alternative to the University's conventional curriculum, at least for a portion of the Faculty and students. It offers a degree of accountability and quality control to the educational process which we believe desirable, and it provides kinds of educational opportunities often unavailable to students in conventional programs. It provides creditable standards of student attainment of stated course objectives, permits students to earn credits without traditional constraints of time and space, and succeeds in individualizing and personalizing the instructional process. From the management standpoint, problems do exist which will require further study before COA can be used with large numbers of students, but it is believed that these problems can be solved. Further developmental study of COA is believed desirable.

While the Sub-committee concludes that COA has been successful, at least with respect to fulfilling the needs stated for the project at its inception, there remains a question concerning its viability in competition for the University's resources. This question relates to whether COA solves any of the University's known problems. While it appeared to us neither to solve nor to exacerbate them, it is a question which might be subjected to further study.

Paul W. Caro, Ph.D.
For the Sub-committee

APPENDIX 7

Questionnaires and Surveys

APPENDIX 7

Transactions - Interaction Survey

Biology n = 22 (82% return)
Nursing (Generic) n = 9 (64% return)

1. I communicate with other COA students during school or after school hours.

	Biology	Nursing (Generic)
Almost always	23%	55%
Often	54	33
Seldom	23	11
Never	0	0
No response	0	0

2. I seek the help of another COA student whenever I have a personal problem.

	Biology	Nursing (Generic)
Almost always	4%	0%
Often	23	44
Seldom	41	55
Never	32	0
No response	0	0

3. Other COA students make me feel that they have a warm and understanding attitude toward me personally.

	Biology	Nursing (Generic)
Almost always	14%	11%
Often	73	55
Seldom	9	22
Never	0	0
No response	4	11

4. Discussions I have with other COA students are of an academic nature and are related to assignments in the learning packages.

	Biology	Nursing (Generic)
Almost always	4%	22%
Often	86	55
Seldom	9	0
Never	0	11
No response	0	11

5. Academic competition exists among the COA students.

	Biology	Nursing (Generic)
Almost always	9%	22%
Often	14	11
Seldom	50	33
Never	27	33
No response	0	0

6. COA students participate in informal conversations and discussions with each other.

	Biology	Nursing (Generic)
Almost always	14%	11%
Often	86	78
Seldom	0	11
Never	0	0
No response	0	0

7. COA students get together in events which are not a part of the normal learning and school activities, such as having parties, visiting each other, etc.

	Biology	Nursing (Generic)
Almost always	9%	11%
Often	36	78
Seldom	36	11
Never	14	0
No response	4	0

8. During intellectual discussions with COA students, I acquire new ideas and obtain information helpful in learning.

	Biology	Nursing (Generic)
Almost always	14%	22%
Often	82	33
Seldom	4	33
Never	0	0
No response	0	11

9. Teaching (COA students teaching other COA students) takes place when COA students interact.

	Biology	Nursing (Generic)
Almost always	14%	11%
Often	81	44
Seldom	4	33
Never	0	0
No response	0	11

10. I seek the help of other COA students when I am having a problem completing a learning package or an assignment.

	Biology	Nursing (Generic)
Almost always	18%	22%
Often	41	44
Seldom	32	22
Never	9	0
No response	0	11

11. I am able to communicate with the mentor.

	Biology	Nursing (Generic)
Almost always	36%	67%
Often	64	33
Seldom	0	0
Never	0	0
No response	0	0

12. The mentor is involved in events which are not a part of normal teaching duties, such as giving a party, having lunch with a COA student, etc.

	Biology	Nursing (Generic)
Almost always	4%	33%
Often	27	33
Seldom	45	33
Never	18	0
No response	4	0

13. Participation in events not a part of normal teaching duties is initiated by the mentor.

	Biology	Nursing (Generic)
Almost always	18%	11%
Often	41	55
Seldom	32	22
Never	9	0
No response	0	11

14. The mentor discusses what is of intellectual interest to the student rather than adhere strictly to course material.

	Biology	Nursing (Generic)
Almost always	23%	22%
Often	77	67
Seldom	0	11
Never	0	0
No response	0	0

15. During discussions, the mentor talks more than the student.

	Biology	Nursing (Generic)
Almost always	0%	0%
Often	9	11
Seldom	82	67
Never	9	0
No response	0	22

16. Discussions are dominated by the mentor's instructions to the student or giving directions.

	Biology	Nursing (Generic)
Almost always	0%	0%
Often	9	0
Seldom	73	78
Never	18	22
No response	0	0

17. The mentor is available when I want to see him/her.

	Biology	Nursing (Generic)
Almost always	23%	11%
Often	73	89
Seldom	4	0
Never	0	0
No response	0	0

18. The mentor has a warm and understanding attitude toward you personally.

	Biology	Nursing (Generic)
Almost always	41%	67%
Often	59	33
Seldom	0	0
Never	0	0
No response	0	0

19. The mentor participates in informal conversations and discussions with COA students.

	Biology	Nursing (Generic)
Almost always	23%	22%
Often	73	78
Seldom	4	0
Never	0	0
No response	0	0

20. The mentor encourages the student to express himself (herself) and actively participate in intellectual discussions.

	Biology	Nursing (Generic)
Almost always	50%	44%
Often	50	55
Seldom	0	0
Never	0	0
No response	0	0

21. You feel that you can criticize the mentor without fear of punishment.

	Biology	Nursing (Generic)
Almost always	14%	44%
Often	68	55
Seldom	4	0
Never	0	0
No response	14	0

22. The mentor is encouraging and commending to the COA student.

	Biology	Nursing (Generic)
Almost always	41%	44%
Often	59	55
Seldom	0	0
Never	0	0
No response	0	0

23. The mentor seems to be neutral by giving formalities, administrative comments or verbatim repetition of something already said.

	Biology	Nursing (Generic)
Almost always	4%	11%
Often	32	11
Seldom	45	33
Never	0	22
No response	18	22

24. The tutors encourage students to express themselves and actively participate in intellectual discussions:

	Biology	Nursing (Generic)
Almost always	23%	22%
Often	50	44
Seldom	14	11
Never	0	0
No response	14	22

25. Tutors participate in informal conversations and discussions with COA students.

	Biology	Nursing (Generic)
Almost always	18%	0%
Often	50	33
Seldom	9	44
Never	4	11
No response	18	11

26. Tutors have a warm and understanding attitude toward you personally.

	Biology	Nursing (Generic)
Almost always	18%	11%
Often	41	55
Seldom	18	0
Never	4	0
No response	18	22

27. Tutors involve themselves in events which are not a part of the normal teaching duties such as giving parties, having lunch with COA students, etc.

	Biology	Nursing (Generic)
Almost always	9%	0%
Often	41	22
Seldom	23	44
Never	9	22
No response	18	11

28. The tutors are primarily concerned with learning problems. Information is given or questions are asked in an objective manner to facilitate problem solving.

	Biology	Nursing (Generic)
Almost always	18%	0%
Often	59	55
Seldom	0	11
Never	0	0
No response	23	33

29. Tutors are reassuring and commending to the COA student.

	Biology	Nursing (Generic)
Almost always	23%	11%
Often	50	44
Seldom	9	33
Never	0	0
No response	18	11

30. Jury members are reassuring and commending to the COA student.

	Biology	Nursing (Generic)
Almost always	0%	11%
Often	45	22
Seldom	23	33
Never	9	0
No response	23	33

31. Jury members seem to be neutral by giving formalities, administrative comments or verbatim repetition of something already said.

	Biology	Nursing (Generic)
Almost always	0%	11%
Often	36	22
Seldom	27	33
Never	0	11
No response	36	22

32. Jury members involve themselves in events which are not a part of normal jury duties, such as giving parties, having lunch with COA students, etc.

	Biology	Nursing (Generic)
Almost always	0%	0%
Often	4	33
Seldom	41	33
Never	32	33
No response	23	0

33. Jury members participate in informal conversations and discussions with COA students.

	Biology	Nursing (Generic)
Almost always	0%	0%
Often	32	22
Seldom	32	67
Never	14	11
No response	23	0

34. Tutors have a warm and understanding attitude toward you personally.

	Biology	Nursing (Generic)
Almost always	14%	11%
Often	45	67
Seldom	23	0
Never	0	0
No response	18	22

35. Jury members have a warm and understanding attitude toward you personally.

	Biology	Nursing (Generic)
Almost always	0%	11%
Often	32	78
Seldom	32	0
Never	14	0
No response	23	11

36. Jury members seem to be concerned only with learning problems. Information is given or questions are asked in an objective manner to facilitate problem solving.

	Biology	Nursing (Generic)
Almost always	9%	0%
Often	59	44
Seldom	4	22
Never	0	0
No response	27	33.

37. Administrative personnel (Registrar, personnel in Bursar's Office, etc.) participate in informal conversations and discussion with COA students.

	Biology	Nursing (Generic)
Almost always	4%	0%
Often	4	0
Seldom	9	22
Never	73	78
No response	9	0

38. Administrative personnel seem to be neutral by giving formalities, administrative comments or verbatim repetition of something already said.

	Biology	Nursing (Generic)
Almost always	4%	22%
Often	18	33
Seldom	18	11
Never	23	22
No response	41	11

39. You enjoy talking with or participating in activities with your mentor.

	Biology	Nursing (Generic)
Almost always	23%	33%
Often	64	67
Seldom	9	0
Never	0	0
No response	4	0

40. You enjoy talking with or participating in activities with tutors and jury members.

	Biology	Nursing (Generic)
Almost always	14%	11%
Often	32	67
Seldom	14	11
Never	9	11
No response	32	0

Biology Program
n=18
STUDENT-MENTOR INTERACTIONS

Frequency of Rank of Occurrence

ITEM	1	2	3	4	5	6	7	8	9	10	11	Mean Rank
1. Discuss research, project or term paper.	1	4	1	2	1	4	2	-	2	•	1	m=5.1
2. Discuss material or assignments in learning packages.	13	1	1	-	-	1	-		-	1	-	m=2.3
3. Discuss intellectual interests of students outside of course.	1	2	4	3	3	2	1	-	1	-	1	m=4.6
4. Discuss career possibilities.	-	3	5	3	4	-	1	1	1	-	-	m=4.3
5. Discuss personal concerns or resolve personal problems.	1	2	1	1	-	-	4	2	3	-	4	m=7.0
6. Discuss grade or progress.	1	1	1	2	1	3	2	3	3	1	-	m=6.2
7. Discuss a past exam or an exam coming up.	-	-	2	1	1	1	3	5	2	2	1	m=7.3
8. Schedule a test, make an appointment, etc.	-	1	-	1	2	1	2	2	1	6	1	m=7.9
9. Socialize informally.	-	-	-	2	1	2	1	1	3	3	5	m=8.4
10. Turn in paper, return book, locate resources, etc.	-	1	1	1	1	3	1	3	1	4	2	m=7.2
11. Discuss completion of program, future courses to take.	1	3	2	3	4	-	1	-	1	1	2	m=6.2

Nursing (Generic) Program
n=9
STUDENT-MENTOR INTERACTIONS

Frequency of Rank of Occurrence

ITEM	RANK											Mean Rank
	1	2	3	4	5	6	7	8	9	10	11	
1. Discuss research, project or term paper.	-	2	-	2	1	2	1	1	-	-	1	m=7.2
2. Discuss material or assignments in learning packages.	5	1	1	1	-	1	-	-	-	-	-	m=2.2
3. Discuss intellectual interests of students outside of course.	-	-	1	1	1	2	-	1	1	1	1	m=6.9
4. Discuss career possibilities.	-	-	-	-	-	-	1	2	3	2	1	m=9.0
5. Discuss personal concerns or resolve personal problems.	-	-	-	1	-	-	2	1	2	3	-	m=7.3
6. Discuss grade or progress.	-	2	-	-	2	2	2	1	-	-	-	m=5.3
7. Discuss a past exam or an exam coming up.	-	-	5	-	2	1	1	-	-	-	-	m=4.2
8. Schedule a test, make an appointment, etc.	1	4	1	3	-	-	-	-	-	-	-	m=2.7
9. Socialize informally.	-	-	-	-	1	1	1	2	-	2	2	m=8.4
10. Turn in paper, return book, locate resources, etc.	3	-	1	2	2	-	-	1	-	-	-	m=3.5
11. Discuss completion of program, future courses to take.	-	-	-	-	-	-	1	-	3	1	4	m=9.8

Biology Program
n=19
STUDENT-STUDENT INTERACTIONS

Frequency of Rank of Occurrence

ITEM	1	2	3	4	5	6	7	8	Mean Rank
1. Discuss research, project or term paper.	2	3	3	5	1	2	1	2	m=4.0
2. Discuss content in learning packages.	8	6	2	2	-	1	/	-	m=2.1
3. Discuss various intellectual interests of other students outside or course.	3	3	7	3	-	1	1	1	m=3.3
4. Plan social activities.	-	-	2	1	1	1	10	4	m=6.5
5. Socialize informally.	4	2	-	-	4	3	3	3	m=4.8
6. Discuss personal concerns or resolve personal problems.	-	2	3	2	1	3	2	6	m=5.6
7. Tutoring another COA student who needs help.	-	3	1	4	6	3	2	-	m=4.6
8. Discuss past exam or an exam coming up.	2	-	1	2	6	5	1	2	m=5.0

Nursing (Generic) Program
n=8
STUDENT-STUDENT INTERACTIONS

Frequency of Rank of Occurrence

ITEM	RANK								Mean Rank
	1	2	3	4	5	6	7	8	
1. Discuss research, project or term paper.	-	2	2	1	2	-	1	-	m=3.9
2. Discuss content in learning packages.	6	1	-	-	1	-	-	-	m=1.6
3. Discuss various intellectual interests of other students outside of course.	-	-	2	1	-	2	-	3	m=5.7
4. Plan social activities.	1	-	-	1	-	1	5	-	m=5.7
5. Socialize informally.	1	1	-	3	1	1	-	1	m=4.2
6. Discuss personal concerns or resolve personal problems.	-	1	1	-	2	1	2	1	m=5.4
7. Tutoring another COA student who needs help.	-	-	2	1	-	2	-	3	m=5.7
8. Discuss past exam or an exam coming up.	-	3	1	1	2	1	-	-	m=3.6

APPENDIX 7

General Outcomes Survey

Biology n = 23 (85% return)
Nursing (Generic) n = 10 (71% return)

KEY

1 = Strongly agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly Disagree

THE COA WAS EFFECTIVE IN HELPING YOU TO:

		Biology	Nursing (Generic)
1.	Develop greater self-confidence in professional skills.	m = 1.8	m = 1.8
2.	Acquire the competencies needed to be successful in your field of study.	m = 1.7	m = 2.3
3.	Adapt more readily from school to professional employment.	m = 1.8	m = 2.0
4.	Develop an ability to work well with other professionals.	m = 2.0	m = 1.7
5.	Develop skills in analyzing and solving problems.	m = 1.8	m = 1.8
6.	Develop an interest in research.	m = 1.7	m = 2.6
7.	Develop a high degree of self directedness.	m = 1.4	m = 1.4
8.	Develop motivation and commitment toward professional goals.	m = 1.6	m = 1.4
9.	Adapt readily to new situations.	m = 1.9	m = 1.5
10.	Increase your ability to pick out information which is valuable and reject inputs which are not valuable.	m = 1.9	m = 1.6
11.	Increase your ability to develop more personal relationships with your peers and instructors.	m = 1.8	m = 1.3
12.	Gain an in-depth knowledge in the major subject area.	m = 1.8	m = 2.3

		Biology	Nursing (Generic)

13. Allocate time and work effort more efficiently.   m = 2.0   m = 2.2

14. Progress through the program at a faster rate.   m = 2.5   m = 2.4

Section 2

15. If I had the choice of participating either in COA or the conventional program again, would choose the COA.   m = 1.7   m = 2.4

16. The benefits of involvement in the COA outnumber the problems.   m = 1.7   m = 2.4

17. I have more of the kinds of skills an employer would want for a professional in my area than a student from the conventional program.   m = 1.8   m = 2.2

18. The COA curriculum is more relevant to real world professional activities.   m = 2.0   m = 2.5

19. The knowledge and skills I have acquired from the COA makes me as prepared for entry into a graduate program in my area of study as well as entry into a profession.   m = 1.9   m = 1.8

20. The COA program helped me to develop a greater sense of responsibility.   m = 2.0   m = 1.7

21. The assessment procedures enabled me to improve communication skills.   m = 1.9   m = 1.9