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ABSTRACT

A model of an instructional program which uses principles of effective management to optimize learning for adult learners is described. The model is a result of the authors' work with the Institute for Personal and Career Development which is responsible for the external degree program of Central Michigan University. Most adult learners have limited time available to attend class meetings; however, this time factor becomes far less crucial and learning and instruction can be efficient and effective if these individuals can acquire the basic concepts and principles of the course prior to the group sessions. For this purpose learning packages and various mediated materials are used which include diagnosis of pre-instructional knowledge, behavioral objectives, self-pacing and self-diagnostic tests with immediate feedback. Intensive schedules are used for class sessions at which time the professor can assist the students to apply, synthesize, and evaluate the concepts and principles learned prior to class and to develop new principles from them. The professor develops the hierarchy of objectives and acts as the resource person. The student gains additional insight by assuming greater responsibility for an enriching learning experience. (Author)

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OPTIMIZING LEARNING THROUGH EFFECTIVE MANAGEMENT

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OPTIMIZING LEARNING THROUGH EFFECTIVE MANAGEMENT

Optimizing learning implies that the instruction and learning are both efficient and effective. Effective management means that the best use is made of time, physical location, money, resources and logistics to ensure that each individual achieves the instructional objectives. The model presented by the authors to accomplish these goals was developed through their work with the Institute for Personal and Career Development.

The Institute for Personal and Career Development (IPCD) was founded at Central Michigan University to respond to the needs of adult learners who want educational opportunity but are prevented from attaining it because, for various reasons, they cannot attend traditional on-campus college classes. To achieve that goal the Institute supports continuous research and development of continuing-education programs, characterized by innovation, flexibility, and individualization.

As an arm of Central Michigan University (CMU), IPCD has the same goals and maintains the same standards as other academic units. Because of its special mission, however, several features are unique to the Institute; for example, the teaching staff includes not only CMU professors but also faculty members from other educational institutions and qualified professionals from other organizations. An individualized approach, which considers the student's educational goals and background as major factors, is used in developing the instructional materials, planning the specific degree program, and scheduling the classes. Several options for earning credit are available to the student including the possibility of receiving academic credit for skills and knowledge acquired through practical experience.

To be efficient this type of program would need to accomplish the following:

1. Make use of the student's time before the class meeting to learn basic concepts and principles that normally may take up a large portion of classroom time.

2. Make better use of the instructor's time during the contact hours.

3. Make use of the resources available to a group in a physical setting (various media, laboratory exercises, etc.).

To be effective the program would require different, but mutually enhancing requirements:

1. Preclass Instruction--the use of individualized instructional materials that permit students to acquire the concepts and principles that would be prerequisites to the classroom instruction. Individualized instruction provides individually prescribed content; that is, the student working alone is required to learn new material and omits material already acquired. Learning time is an important variable in the acquisition of information. When the students control learning time, the differences in their individual rates of learning become less critical. Thus, when the instruction of prerequisite competencies is self-paced, there is greater assurance that greater numbers of students will acquire a greater number of these competencies.

2. Classroom Instruction--the use of instructional strategies that require the application of the basic concepts and principles acquired in the preclass instruction to problems and situations that require the use of higher level intellectual abilities and which provide positive transfer to the students' daily tasks which they encounter. Such strategies include individual and group problem solving, discussions, role playing, simulations, presentations and group evaluations of research reports, and so on.

There is precedence for this type of program with research evidence proving its success. The National Urban Studies Program of HUD for graduates and undergraduates shows these characteristics: courses are scheduled for intensive sessions, two-day or one week; course material is available well in advance; learning packages are developed; various media is employed, e.g., cassette-recorded lectures, tape-slide presentations, video tapes, and movies;

and substantial use is made of independent study.[2] Similar programs are offered at the University of Oklahoma, Roosevelt University, University of South Florida, University College of Syracuse University, Brigham Young University, and State University College at Brockport.[3]

Another example of this type of program is the personalized system of instruction (PSI) developed by Fred S. Keller, Professor Emeritus at Columbia University.[4] Characteristics of this system are (1) de-emphasis on the lecture; all materials are made available to students in carefully written form; lectures mainly supplement and provide further illustrations of points made in the written material, (2) most class time is spent in administering examinations over small portions of course material and providing immediate feedback to students about their mastery of the material, (3) examinations are successfully completed only when a student writes a perfect paper, and (4) students move through course material largely at their own rate.

In advance of the course reading materials, supplementary course activities, films, guest speakers, and any special demonstrations and unit study guides are prepared. Students receive a detailed statement of course policies and procedures and a course calendar.

"By relieving the instructor of the job of delivering daily lectures of dubious value or interest, PSI permits him/her to discover and tend to the individual needs of the students."[5]

". . .several investigations. . .have reported superior terminal examination performance by students completing PSI courses. . .have also reported superior retention of material mastered on the context of a PSI course. . . have reported that students evaluate the PSI procedures very favorably even though courses taught in this manner demand a great deal of work."[6]

Information can be given and received effectively in a number of ways: books, handouts, tapes or a number of other means which will allow the student to digest the material at his or her own pace and in a manner suited to the individual's learning style. If this is true, what is the best way to structure a graduate course for adult learners? In answering this question, the following set of assumptions were considered in the development of the model.

1. Each course should have a set of behavior outcomes that can be objectively measured.

2. Effective learning means high achievement and efficient classroom management.

3. Students often have difficulty arranging large blocks of time for class activity.

4. Many people can travel long distances to attend short seminars or workshops but cannot frequently travel this same distance to attend classes over a prolonged period of time.

5. A well-engineered course of study with behavioral objectives will ensure achievement of academic standards commensurate with the criteria established.

6. The student should be required to achieve at the highest level.

7. Many students can listen to tapes or read a considerable amount of material prior to a class to ensure a certain level of learning upon entering the classroom activity.

8. Test instruments can be designed to measure the student's understanding of the knowledge, and an exercise can be designed for each objective to assist the students in applying the information learned.

9. The teacher can use class time most effectively to assist the student in applying the information learned prior to the class meeting to real situations through analysis, synthesis and evaluation.

Based on these assumptions, a combination of individual study with short intensive seminars or workshops was developed to supply the learning needs to make higher education more accessible to many individuals

now unable to take advantage of the opportunity. The packaged course combined with compressed class meetings would be the best combination and would be the most effective for the following reasons:

1. Students receive much encouragement to complete the study assignments in time for the class session. Research indicates that packaged courses alone are not tremendously effective in motivating students to complete the study.

2. Well-planned study prior to the class prepares the student to participate more effectively in class. Students normally come to class with a wide variation in the skills necessary to achieve the objectives for the class. The preclass study will ensure that students have obtained at least minimum prerequisites for the course.

3. Students bring valuable information to the class, and interaction with other students helps to reinforce learning.

4. Leadership cannot effectively be developed in isolation.

5. Many students receive greater satisfaction in group interaction than in totally independent study.

6. Attainment of objectives is more effective in group interaction.

7. Classroom activity during extended periods of time is best for learning at the analysis, synthesis, or evaluation levels. Information can be attained through individual study.

Based on this information, the model of such organized learning is described in the attached chart and is submitted for consideration.

In this model, each unit states the objectives and defines the learning activitites which the student may use to master those objectives until, upon completion of the course, the student functions at the highest level of learning.

The utilization of the model presented is supported by various concepts from the field of management. Although these theories were not developed for specific use in graduate level instruction, the authors believe that they are directly applicable. The role of the professor is seen to be the manager of

the learning experience, not just the transmitter of knowledge and skills. The activities managed, the technology used, and results sought may differ, but the managerial functions and processes are similar to the ones for which these management concepts have been developed and applied.

One of the primary tasks of the professor is to define and interpret clearly the general instructional objectives, a process which includes the establishment of a hierarchy of objectives to integrate the student learning activities into meaningful educational achievements. The instructional efforts in this task are one form of management by objectives. Odiorne has defined MBO as "a process whereby the superior and the subordinate managers of the enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected of him, and use these measures as guides for operating the unit and assessing the contributions of each of its members."[7]

The student has little input in the establishment of these learning objectives, but he lacks the requisite expertise in the academic discipline to do so. In conjunction with an academic counselor, however, the student does participate in the selection of the courses in his program. This modification does not negate the application of the management by objectives concepts by the educator. In fact, Raia has stated, "There is no one best way to manage by objectives. Each system, each program, must fit the needs and circumstances of a given organization."[8] The four essential elements Raia identifies as constituting the MBO process--goal-setting, action planning, self-control, and periodic reviews--can be seen to be compatible with the instructional model presented.

The apparent nature of the student population who would be enrolling in these programs also supported the validity of this approach. The model of

self-actualizing man developed by Schein[9] was assumed to be applicable to those individuals. These potential students were believed to be motivated by the higher order level of needs in Maslow's hierarchy. Also, the fact that they were college graduates pursuing professional careers would make them similar to the sample studies by Herzberg and his associates[10] from which he derived his two-factor theory of motivation. Herzberg[11] has further argued for the benefits of job enrichment, a purposeful and planned increase in the responsibility, scope, and challenge of work, for employees with these types of needs. The concept of job enrichment in the sense of placing increased responsibility for an "enriching" learning experience upon the student is an inherent part of the instructional format presented.

It is not unreasonable nor unrealistic to expect these students to cope with this increased responsibility for their own learning. The statement below was made by Margulies and Wallace as they discuss the responsibility for change. The comments in the parentheses have been added by the authors of this paper.

> "It is therefore often the case that responsibility for change (learning) must rest with the client (student) himself rather than with the change agent (professor). That is, in the final analysis and for the most part, persons (graduate students) change (teach) themselves. This, of course, implies in no way that change agents (professors) do nothing in the change process."[12]

One advantage of this system is that the students not only learn the content of a course, but also they get a grasp of how that learning takes place. Thus, they will be better equipped themselves to build upon the foundation which has been generated.

Another advantage to this approach is that the authority shifts from the professor to the learning objectives and the structured learning exercises. The professor's relationship to the student is changed, in turn, from being an obstacle to be "out-gamed" and overcome to being a resource to be used in achieving a set of goals. Consequently, it becomes mandatory to use the interaction time between the students and the professor optimally.

MODEL FOR OPTIMIZING LEARNING IN COMPRESSED SCHEDULE

LEARNING LEVEL COGNITIVE	LEARNING LEVEL AFFECTIVE	LEARNING ACTIVITY METHOD	*APPROX. HRS. IND.	HRS. CLASS	OBJECTIVE	REMARKS
Knowledge	Receiving	Readings tapes & other mediated mat'l	40-60	4	Given readings and mediated materials, the student will complete the pre-class assignment and answer specific questions at the end of the assignment sheet.	Instructional packet should be given the student at least 30 days prior to first class session
Comprehension	Responding	Written assignment	5-10	2	Given a list of the major principles and concepts for the course, the student will define each principle and/or a concept in his or her own words and forward it to the teacher in the self-addressed envelope enclosed in the packet.	A list of the major principles and/or concepts should be listed as a guide for assignments.
Application	Responding valuing	Assignment	10-20	6	Given specific instructions and the sufficient data, the student will complete an assignment applying the principles given in Module I.	Assignment may be written or an oral presentation to the class or an outside activity which would require the student to apply the principles learned.
Analysis	Valuing	Lecture and other class activity assign.	5-15	8	Given the major issues and current trends, the student will analyze each principle and concept and prepare a report on the findings consistent with the objective.	Part of this may be in the assignment however, the teacher may have to assist in the analysis.
Synthesis	Organization	Lecture on personal exp. Student reports discussion.	5-10	8	Given the major concepts, the student will collect related information from other learning experiences and correlate with the information submitted in this class and prepare a report that is consistent with the new thoughts consistent with the objectives for the course.	It is important for the student to relate the concepts learned to the real world with which he or she is familiar.
Evaluation	Characterization	Individual assign. small group discuss. large group reporting	10-20	8	Given a real life situation in a case study, the student will select optimum solution and prepare appropriate report and submit to class and/or teacher.	Highest level of learning and very important to get maximum value for the student to make significant use of materials learned and change or improve his own values.
		TOTAL	75-135	36		

Time indicated is only an estimate of the total hours required for the average student in a three semester hour course and lists the appropriate time for Independent Study and classroom activity.

FOOTNOTES

[1]Benjamin S. Bloom, David R. Krathwohl, and Bectram B. Masia, Taxonomy of Educational Objectives, Handbook I and II (New York: David McKay Company, Inc., 1956).

[2]Rodney T. Hartnett, "Non-Traditional Study: An Overview," in Exploration in Non-Traditional Study, ed: Samual B. Gould and K. Patricia Cross (San Francisco: Jossey-Bass, Inc., 1972), pp. 13-38.

[3]Ibid.

[4]J. Gilmour Sherman, "PSI Today," in The Keller Plan Handbook, ed: Fred S. Keller and Ben A. Green, Jr. (Menlo Park, California: W. A. Benjamin, Inc., 1974), pp. 59-64.

[5]David G. Born and Steven Zlutnik, "Personalized Instruction," in Learning Packages in American Education, ed: Philip G. Kapfer and Miriam B. Kapfer (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), pp. 69-82.

[6]Ibid.

[7]George S. Odiorne, Managing by Objectives (New York: Pitman Publishing Corp., 1965).

[8]Anthony P. Raia, Managing by Objectives (Glenview, Illinois: Scott, Foresman and Company, 1974), p. 2.

[9]Edgar H. Schein, Organizational Psychology, 2nd ed. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), pp. 65-69.

[10]Frederick Herzberg, Bernard Mausner, and Barbara Synderman, The Motivation To Work (New York: John Wiley & Sons, Inc., 1959).

[11]Frederick Herzberg, Work and the Nature of Man (New York: World Publishing Co., 1966).

[12]Newton Margulies and John Wallace, Organizational Change (Glenview, Illinois: Scott, Foresman and Company, 1973), p. 12.

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