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ABSTRACT

Within the framework of individualized instruction, a study explored: 1) the effects on performance when students either know or do not know how much time it has taken others to complete the same task, and 2) the importance of the concept of "peer tutor." Students enrolled in two sections of a class in utilization of educational media participated as subjects in the study; they were randomly assigned to either a group which received average "time-to-task" information for each task or a group which did not receive such information. The total amount of time taken by each group to complete each task of a component, and the grades received by each group were computed and the resultant means compared. Profile scores for each student were compiled, and students also indicated the names of two peers in the class who had been most helpful in achieving objectives. Results did not support the hypothesis that giving students time-to-task data would help their performance. However, the study showed a high positive correlation between a student's performance and his success in the eyes of other students as a peer tutor. (SH)

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"Effects of 'Time-to-Task' Data on
Performance in a College Media Course"

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for presentation at the
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The Problem

A serious danger in the redesign phase of any system is the possibility of losing sight of what happens to the subjects in the change-over process. The author looked for but found little evidence of what happens to students during attempts to individualize instruction. Howes (1970) has stated, "The movement from a group-oriented, teacher-directed instructional strategy to an individualized-personalized strategy is a fundamental redesigning of numerous components of the instructional process." Such a fundamental restructuring of instructional systems produces programs which turn out to be vastly different from those which students from the grades through college have known and dealt with before. Most students have spent their entire educational careers operating as Howes puts it in "group-oriented, teacher-directed" systems. Therefore, it is not unreasonable to assume that college students, having come up through the ranks on a "spoon-fed" intellectual diet, might in fact have more problems adapting to an individualized system than a youngster in grade school who has not lived with the system so long. Like the inveterate smoker who is suddenly asked by his doctor to kick the habit it may be too difficult a request and may require a period of tapering off, together with encouragement and help from his friends.

The study described here focuses upon two specific problems in moving toward a system of individualized instruction in a college media utilization course. First, what are the effects on performance when the students either know or do not know how much time it has taken others to complete the same tasks? Secondly, of what importance is the concept of "peer tutor" to a student who is attempting to realize his independence as a learner?

Rationale

To say that a current and popular educational topic is individualized instruction is an understatement. In a recent month alone Education Index listed over fifty articles which dealt with the subject. Many persons have addressed themselves to defining individualized instruction, others have chosen to write what it "is not" but few have offered empirical evidence which can be generalized to support techniques for its successful implementation.

Gordon (1970) has promoted an individualized system which can be characterized as a gradual release of important decisions from the control of the teacher to that of the student. These decisions involve such things as where students should learn, how they should learn, what they want to learn, what they can do when they cannot learn and finally, when or how fast should they be able to learn. Gordon feels the teacher who plans an individualized system needs to utilize certain management skills in helping students assume more and more responsibility for the above mentioned decisions. The problem again is how will the students react when suddenly given the latitude to make these choices which formerly had not been theirs to make? Correspondingly, what kind of help can be given students who are attempting to make these decisions for the first time? The latter question needs particular attention.

Carroll (1963) has said that "time" is a critical dependent variable in school learning and he distinguishes between the time a person needs to spend, the time he actually spends "paying attention" and "trying to learn" and the "time allowed" or opportunity for learning. I suggest that we not

forget that time can be both a dependent and an independent variable, particularly since a student moving toward a more independent position as a learner will have himself increased control over time. So, if it can be determined that knowledge of how long it has taken others to do a task is a valuable input then the student can control his own time inputs accordingly.

Heathers (1971) has reminded us that independent study is just one form of individualization. He has emphasized variation in modes for individualizing instruction: variations in (1) goals towards which students work, (2) learning materials, (3) techniques employed, (4) match-ups between students and teacher, (5) variations in the amounts of time to master tasks, and finally, variations in the size of groups working together. Heathers stressed the importance of the "peer tutor" relationship in which students learned to become more self-sufficient by helping each other. The kind of classroom conditions described in the present study gave us the opportunity to test one phase of Heathers's "peer tutor" hypothesis at the college level.

Background of the Study

The decision to change the format of a university course dealing with the utilization of media came as a result of some very real problems and was based in part upon the following information: (1) the course was open to juniors, seniors and graduate students, all of whom possessed varying prerequisite capabilities; (2) the course was co-listed with the colleges of Education and Library Science, providing at least two distinct groups of students with somewhat different motivations for taking the course; (3) the option existed, and was utilized, to take the course on a regularly graded basis or on "pass-fail"; (4) student evaluations of the instructor of the

media course in the previous semester had been interpreted to mean that students favored a less formal, less traditional type of class format.

The diverse enrollment pattern in this media course then presented a number of delicate conditions. Students were expecting to have a lot of "hands-on" experiences in the course yet the traditional methods had not been compatible with that expectation. Library Science students seemed to be particularly concerned with mastering the audio-visual devices. Still other students were enrolled as majors from other disciplines such as speech, design, business and telecommunications, each seeking experiences which would complement the work he was taking in his own specialization. Finally, students entered the class with widely varying amounts of time which could be devoted to the subject at hand. Finding out all of these things about the students it appeared unlikely to this researcher that a continuation of a set curriculum, with a lecture-discussion format and accompanying typical evaluation procedures, could be successful. The decision was made to try and implement a more individualized, personalized approach in the course.

It is not our purpose to describe "how I taught the media course"; however, I do think it necessary to recount the formative aspects of this redesign procedure since it was tied so closely to the theoretical formulation of the study.

Categories of Objectives

The first problem in redesigning the course was to identify what objectives were deemed necessary for all to achieve. The selection of these tasks was done in the context of "what should this person be able to do when he finishes this course?" A hierarchy was designed (see appendix)

which represented various levels of "media competency" and specific tasks planned for students to achieve these competency levels. It was decided that the required objectives should be kept to a minimum so that students would have more time to devote to the other objectives which will be described. Further, these required objectives were designed to be "process oriented experiences" thus incorporating a technique described by Arends, Masia and Weber (1971) in which value is placed upon the "doing" aspect of an activity.

Next, a series of elective objectives to accompany each required component was prepared. The purpose here was to allow the opportunity for both quantitatively more and also more varied performances by those students who had the time and motivation to do them but perhaps still lacked the skills to generate their own objectives.

Finally, a category of objectives was suggested to students which was called "learner-generated" (Gordon, 1970). As the name implies they were made available so that students who desired could "do their own thing".

Methods and Procedures

Students enrolled in two sections of the class in utilization of educational media (N = 48), during the first semester the individualized format was employed, provided pilot data for the study. Students were asked to keep records on progress sheets and in their folders as to how much time they spent doing each objective they attempted. Three categories of objectives, required, elective and learner-generated, were used. At the end of the semester the mean for each objective was computed.

The following semester, students enrolled in the same media course were randomly assigned to one of two sections of the class (N = 46). During the

semester as each new component was introduced the average "time-to-task" (the mean amounts of time it had taken students to complete the same tasks during the previous semester) was given to students in one section (X_1 , $N = 29$) but not to students in the other section (X_2 , $N = 17$). Students in X_1 who received "time-to-task" information were simply told they were being provided with information as a possible guide for them to use in determining how efficiently they were using their time. Students in X_2 were told nothing about "time-to-task" nor did the subject arise.

When the semester was over the total amounts of time taken by each group to complete each task during the semester were computed and the resultant means compared. Data was discarded on any task where less than five students in either group completed the work.

At the end of the semester students in both sections were assigned profile scores (only for the purpose of the study--the scores were not given to the students). These profile scores were determined by assigning weighted point values so that a student received one point for completing each required objective, two points for elective objectives and two and one-half points for each learner-generated objective completed. (The decision to give nearly equal weightings to elective and learner-generated objectives was made so as not to severely penalize students who were not able to demonstrate whatever talent is necessary to create one's own goals, since this is a skill that has not often been called for nor encouraged in our educational system. Of course, students were not told that scores would be weighted so there was no added incentive for them to try elective or learner-generated objectives for that reason.) The profile scores were then tabulated and the means of groups X_1 and X_2 were compared.

Also at the end of the semester, each student was asked to write down the names of two individuals in the class (aside from himself and the instructor) who had been most helpful to him in achieving objectives. These responses were tabulated (again for the purpose of the study only) so that each student had a number which represented the number of times he had been named by classmates as being particularly supportive in nature. This number was called the "peer supportive factor". A test for correlation between the peer supportive factor and the student profile score was computed in total for all students.

To test the effects on performance of either knowing or not knowing time-to-task, grades on each of the 22 tasks completed by at least five students in each group were tabulated and the means compared. Students were allowed to grade themselves but were required to write-out their exact reasons (some subjective, some objective) for giving the grades. The instructor reserved the right to either raise or lower grades when necessary.

When the mean times and mean grades for each group on the 22 tasks were determined, tests for correlations between "time and grade" on each task were computed.

To analyze the nature of the 22 tasks in the study, the author used Gagné's (1970) basic levels or types of learning to classify the tasks. To strengthen the reliability of his judgements, the author asked an educational psychologist who regularly uses the Gagné book as a text to also classify the tasks, without knowledge of the author's choices.*

*The author wishes to thank Dr. Henry P. Cole, Assistant Professor of Ed. Psychology and Counseling, University of Kentucky, for his help.

Results

The pilot study produced means for task completion times as shown in Table 1. Only the means for tasks completed by at least eight students were computed. These means were then used as baseline data and given only to students in section X_1 as each new task was introduced during the semester of the actual study.

Table 2 shows the differences in means of task completion times for groups X_1 and X_2 at the conclusion of the semester. One student from X_2 had to be dropped from the study because of changing from credit to audit but otherwise the groups remained intact. Table 2 also shows the exact probabilities resulting from a "t" test comparing means of the two groups across tasks. Six tasks are shown to have significant differences ($<.05$) and are marked accordingly.

Table 3 shows a significant positive correlation ($<.001$) between the profile scores and peer supportive factors for the 46 students involved in the study.

Table 4 shows a comparison of means of grades on tasks for the two groups and the exact probabilities from "t" tests. Eight tasks reflected significantly higher grade achievement for students in Group X_2 .

The classification of tasks according to the Gagné levels (described earlier) are given in Table 5. The six tasks found to have significant time differences (see Table 2) were also assigned a "basic level" according to Bloom's Taxonomy of Educational Objectives, the Cognitive Domain. Using both the Gagné and Bloom models, the six tasks were all of a consistently higher order level of learning.

Finally, Table 6 shows the search for correlations between the amount of time spent and the grade achieved on each of the 22 tasks by both groups. With one exception, Group X_1 , which had received time-to-task inputs showed no

significant correlations between time and grade; in fact, nine tasks reflected performances producing negative correlations. Group X_2 , not given time-to-task information, also displayed one significant positive correlation and even though two instances of significant negative correlations were revealed, there were 14 of 22 tasks where higher "r" values occurred than in group X_1 .

Conclusions

The premise that giving students time-to-task data might help their performance was not substantiated in the present study. Moreover, careful examination of the data upon which significant differences occurred on time to complete tasks indicated that knowledge of time-to-task did not significantly inhibit graded performance on tasks that were of a higher order nature, as was originally thought. However, the author suspects that in his attempt to achieve overall success with the new instructional format being used in the study and particularly in allowing students to grade themselves, that the time-grade correlation may not have been the best way to determine the answer to the question of the importance of time-to-task. Glass (1972), in addressing the appropriate relationship between developer and evaluator, stressed the importance of anonymity in the two roles. Having been initially aware of this concept, this researcher thought he could create anonymity by having students grade themselves. Although the grades reported in the study did reveal higher grades for students in the "no time-to-task" group, there was probably a reluctance on the part of the author to down-grade individuals in the "time-to-task" group, perhaps fearing that the experimental treatment might have hindered performance.

Maybe the question can eventually be resolved by using more exact grade determinants and by completely separating the developer and evaluator roles.

In a more decisive vein, there was a high positive correlation between a student's quantitative task accomplishment and his success in the eyes of other students as a peer tutor. In other words, the study showed that even though a student took the time to help others and was viewed positively by those he helped, this activity did not restrict his efforts in doing tasks.

As a result of the present study, time-to-task data has not been given as such to students in subsequent media classes taught by the author. But students still keep records of time expended on progress sheets (see appendix). Students are encouraged to analyze their time expenditures from a descriptive standpoint; that is, in looking at the time spent for doing particular things, like organizing ideas, searching for materials, reading assignments, outlining or gathering information, etc., a pattern may emerge which reveals an inordinant amount of time spent in a certain learning function. Becoming aware of a weakness in such an area would be the first step toward correcting the problem.

Some other observations regarding student's reactions and their performances in the redesigned media course seem appropriate to mention. It seemed to take students about four or five class sessions to adjust to being "on their own" as far as learning was concerned. At first they would come into the media laboratory and just sit, waiting for the "performance" to start. Later, students were observed coming to class sometimes an hour early and starting to work on their own or in small groups. Often, students would stay on and work long after class time had elapsed.

At first, students had difficulty in putting a grade on their own work. They had difficulty in recognizing and establishing objective criteria upon which

to base a grade. Comments like, "I tried very hard" or "I did the best I could" were not uncommon notations on progress sheets. But after the author reminded students that part of the total task expectation was to build in objective checkpoints and after offering them examples of criteria for the tasks in question, the grading seemed to come easier for most.

Students commented that they liked the opportunity the system gave them to "be lazy" or to "spurt". They said it even helped them in other classes because it gave them more flexibility to adapt to demanding assignments made by other professors. The author conducted four progress checks throughout the semester and student records indicated these "lazy" and "spurt" periods. However, the majority of students still appeared to progress at a rather steady pace, one which was in close congruence with regularly scheduled discussions, demonstrations and other instructional inputs related to the objective at hand, even though this steadily paced performance was not required nor specially rewarded.

In summary, even though time-to-task inputs did not affect significant differences in performance in the present study there may still be value in accumulating such data and in analyzing it more microscopically in terms of the functions performed by the learner. Such inspection will probably reveal inadequacies in the basic design of instruction, thus serving as a valuable feedback loop.

The peer tutor concept seems to hold great promise as we have surely always known. But because of our great emphasis in the past on forced distribution of grades which has promoted too much competitiveness, we have neglected in the college classroom the very technique that students regularly use in their dormitories-- that of helping one another.

TABLE I
MEAN TASK COMPLETION TIMES
(Pilot Study)*

task**	N	mean (in hours)
I. 1.A.	48	.51
I. 1.B.	48	2.78
I. 2.A.	8	2.56
II. 1.A.	48	1.45
III. 1.A.	48	1.84
III. 2.A.	9	1.22
IV. 1.A.	47	2.01
V. 1.A.	48	3.37
V. 2.A.	11	1.50
VI. 1.A.	26	2.30
VI. 2.A.	21	2.12
VI. 3.A.	19	1.84
VII. 1.A.	48	1.26
VII. 2.A.	10	1.90
VIII. 1.A.	47	1.59
IX. 1.A.	48	1.56
IX. 2.A.	22	2.09
X. 1.A.	46	2.47
X. 2.A.	8	1.25
XI. 2.A.	17	1.44
XII. 1.A.	47	1.85
XIII. 1.A.	48	1.15

*Shows only those objectives eventually tried by enough subjects for statistical tests to apply.

**Refer to appendix for verbal description of tasks.

TABLE 2

COMPARISON OF GROUPS' COMPLETION TIMES**

task	X ₁ (N)	X ₂ (N)	"t" probability values
I. 1.A.	.84 (29)	1.22 (16)	.030 *
I. 1.B.	2.88 (29)	3.69 (16)	.072
I. 2.A.	2.20 (5)	2.72 (9)	.477
II. 1.A.	1.54 (28)	1.72 (16)	.317
III. 1.A.	2.19 (29)	2.13 (16)	.782
III. 2.A.	1.41 (17)	2.35 (10)	.039 *
IV. 1.A.	2.22 (29)	3.41 (16)	.004 *
V. 1.A.	3.62 (28)	3.97 (16)	.495
V. 2.A.	1.93 (7)	1.60 (5)	.612
VI. 1.A.	2.34 (22)	2.75 (16)	.134
VI. 2.A.	2.23 (20)	2.58 (12)	.368
VI. 3.A.	2.03 (15)	1.67 (6)	.279
VII. 1.A.	1.76 (29)	2.94 (16)	.003 *
VII. 2.A.	2.11 (14)	1.94 (8)	.616
VIII. 1.A.	1.84 (28)	2.72 (16)	.004 *
IX. 1.A.	1.66 (29)	1.67 (16)	.542
IX. 2.A.	2.10 (10)	2.25 (6)	.558
X. 1.A.	2.77 (27)	4.59 (14)	.015 *
X. 2.A.	1.06 (8)	1.58 (6)	.292
XI. 2.A.	1.66 (9)	2.06 (8)	.145
XII. 1.A.	2.05 (29)	2.27 (15)	.532
XIII. 1.A.	1.41 (29)	2.06 (16)	.419

*Between group mean differences significant at levels of confidence shown.

**Times shown in hours.

TABLE 3

CUMULATIVE PROFILE SCORES AND PEER SUPPORTIVE FACTORS, X_1 AND X_2

N	Profile Scores	Peer Supportive Factors
46	1153	80.

Value of Pearson product-moment correlation, $r = +.87$,
 Significant $< .001$ level of confidence.

TABLE 4
COMPARISON OF GROUPS' GRADES ON TASKS**

task	X ₁ (N)	X ₂ (N)	"t" probability values
I. 1.A.	4.66 (29)	4.98 (16)	.136
I. 1.B.	4.21 (29)	5.00 (16)	.002 *
I. 2.A.	4.40 (5)	4.67 (9)	.678
II. 1.A.	4.04 (28)	4.62 (16)	.131
III. 1.A.	4.07 (29)	4.81 (16)	.012 *
III. 2.A.	4.29 (17)	5.00 (10)	.007 *
IV. 1.A.	4.00 (29)	4.81 (16)	.007 *
V. 1.A.	4.33 (28)	4.62 (16)	.353
V. 2.A.	4.00 (7)	4.60 (5)	.425
VI. 1.A.	4.50 (22)	4.94 (16)	.053 *
VI. 2.A.	4.19 (20)	4.33 (12)	.691
VI. 3.A.	3.86 (15)	5.00 (6)	.007 *
VII. 1.A.	4.17 (29)	4.87 (16)	.007 *
VII. 2.A.	4.26 (14)	4.75 (8)	.158
VIII. 1.A.	4.33 (28)	4.75 (16)	.114
IX. 1.A.	4.86 (29)	4.87 (16)	.200
IX. 2.A.	4.64 (10)	4.83 (6)	.527
X. 1.A.	4.04 (27)	4.64 (14)	.025 *
X. 2.A.	4.62 (8)	4.67 (6)	.909
XI. 2.A.	4.67 (9)	4.87 (8)	.343
XII. 1.A.	4.54 (29)	4.67 (15)	.534
XIII. 1.A.	4.62 (29)	4.62 (16)	.984

*Between group mean differences significant at levels of confidence shown.

**Grade scale: 5.=A; 4.=A-; 3.=B+; 2.=B; 1.=B-; as students graded themselves.

TABLE 5

CLASSIFICATION OF TASKS BY LEVELS AND CATEGORIES

Tasks*	^a Gagné's levels of learning →	Chaining	Verbal Association	Discrimination	Concept	Rule	Problem Solving	^b Bloom's Cognitive Domain category ↓
I. 1.A. respond to statement							X**	Analysis/Synthesis
I. 1.B. demonstrate competency		X						
I. 2.A. classify objectives				X				
II. 1.A. compose definitions			X		c			
III. 1.A. construct form							X	
III. 2.A. construct consensus							X**	Evaluation
IV. 1.A. evaluate program							X**	Evaluation
V. 1.A. create visual					X			
V. 2.A. collect materials				X				
VI. 1.A. compose list					X			
VI. 2.A. prepare materials					X			
VI. 3.A. evaluate visuals						c	X	
VII. 1.A. compose questions						X**		Analysis/Synthesis
VII. 2.A. prepare visuals				X				
VIII. 1.A. develop lesson						X**		Analysis/Synthesis
IX. 1.A. answer questions				X				
IX. 2.A. critique program							X	
X. 1.A. write script							X**	Analysis/Synthesis
X. 2.A. prepare tape		X						
XI. 2.A. conduct test						X		
XII. 1.A. plan display					X			
XIII. 1.A. compose statement							X	

*Refer to appendix for complete task description.

**Tasks upon which significant differences appeared.

^aGagné, Robert M. The Conditions of Learning. (Second Edition.) New York: Holt, Rinehart, and Winston, Inc., 1970.

^bBloom, Benjamin S. (Ed.) Taxonomy of Educational Objectives, Handbook I: Cognitive Domain. New York: David McKay Co., Inc., 1956.

^cIndicates judges' classification if different from author's.

TABLE 6

CORRELATION OF TIME-GRADE
TASK PERFORMANCE OF GROUPS

<u>Group X₁</u>				<u>Group X₂</u>			
task	r values	df	p level	task	r values	df	p level
I. 1.A.	.012	27	ns	I. 1.A.	.332	14	ns
I. 1.B.	-.116	27	ns	I. 1.B.	.000	12	ns
I. 2.A.	-.086	3	ns	I. 2.A.	.416	7	ns
II. 1.A.	.000	25	ns	II. 1.A.	.278	14	ns
III. 1.A.	.293	27	ns	III. 1.A.	-.808	14	<.001
III. 2.A.	.404	12	ns	III. 2.A.	.000	8	ns
IV. 1.A.	.123	27	ns	IV. 1.A.	.059	14	ns
V. 1.A.	.287	26	ns	V. 1.A.	.325	14	ns
V. 2.A.	.333	2	ns	V. 2.A.	.443	3	ns
VI. 1.A.	-.358	18	ns	VI. 1.A.	.068	14	ns
VI. 2.A.	-.136	16	ns	VI. 2.A.	-.231	9	ns
VI. 3.A.	-.233	13	ns	VI. 3.A.	.000	4	ns
VII. 1.A.	.404	27	<.05	VII. 1.A.	.401	14	ns
VII. 2.A.	.207	11	ns	VII. 2.A.	.401	5	ns
VIII. 1.A.	.055	25	ns	VIII. 1.A.	-.014	14	ns
IX. 1.A.	-.105	27	ns	IX. 1.A.	.215	14	ns
IX. 2.A.	.311	8	ns	IX. 2.A.	.701	4	ns
X. 1.A.	.107	25	ns	X. 1.A.	.069	12	ns
X. 2.A.	-.167	5	ns	X. 2.A.	.375	3	ns
XI. 2.A.	-.522	6	ns	XI. 2.A.	.759	5	<.001
XII. 1.A.	-.154	27	ns	XII. 1.A.	.068	13	ns
XIII. 1.A.	.092	27	ns	XIII. 1.A.	-.583	14	<.02

A P P E N D I X

Figure 1

MEDIA COMPETENCY HIERARCHY

Upon successful completion of the course described in the present study, a student should be able to exhibit "media competency" as described in the hierarchy below:

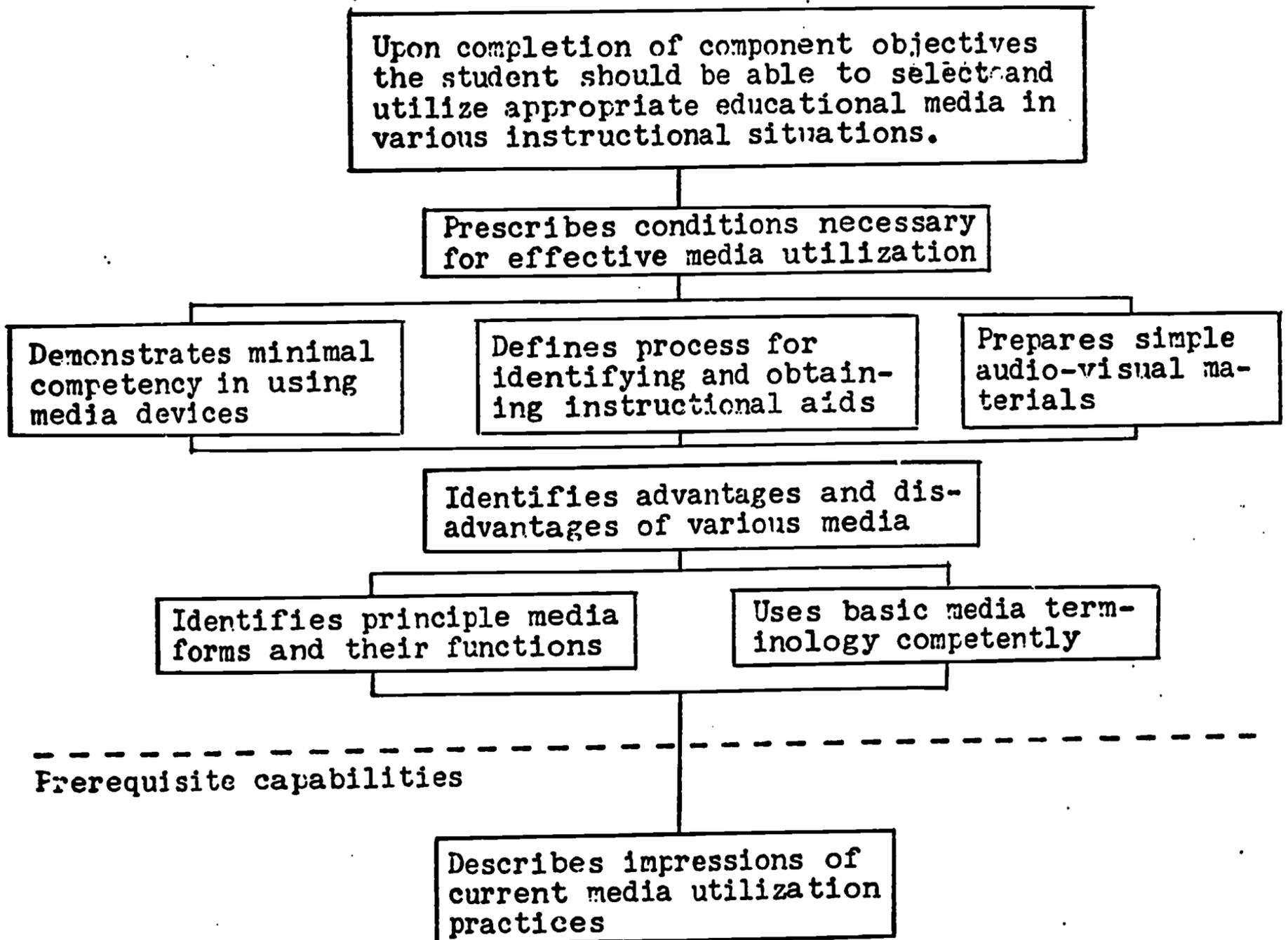


Figure 2

The components (or units) which complement the hierarchy described on the previous page are as follows: (each preceded by, "The student . . .")

expresses own view of current media practices
I.1.A.

practices operation of basic media devices
I.1.B.

exhibits competency in identifying behavioral objectives
I.2.A.

identifies sources of free or inexpensive materials
I.2.B.

demonstrates competency in using media terms
II.1.A.

outlines the uses, advantages, disadvantages of various media
II.1.B.

prepares enrichment packets for selected media
II.2.A.

prepares first-draft, textbook rating form
III.1.A.

prepares consensus rating form with others
III.2.A.

demonstrates the use of an information retrieval system
III.2.B.

evaluates existing programmed instructional materials
IV.1.A.

designs, tests, and revises small programmed package
IV.1.B.

plans, prepares and evaluates graphic presentation
V.1.A.

assembles graphic materials packet for a topic
V.2.A.

compiles comprehensive list of filmstrips
VI.1.A.

demonstrates techniques for mounting flat pictures
VI.2.A.

views, critiques and evaluates filmstrips
VI.3.A.

composes self-study quiz on overheads
VII.1.A.

prepares transparencies; describes the processes used
VII.2.A.

incorporates film as part of total lesson plan
VIII.1.A.

plans, produces and shows own 8mm film
VIII.2.A.

(continued)

FIGURE 2 (continued)

completes questions
related to t.v. field
trip experience
IX.1.A.

critiques segment
of educational
television program
IX.2.A.

prepares script for
making an audio
tape
X.1.A.

produces audio
tape planned in
previous objective
X.2.A.

constructs realia
test on equipment
of his choosing
XI.2.A.

applies system-
atic approach
to plan display
XII.1.A.

completes display
planned in pre-
vious objective
XII.2.A.

writes statement ex-
pressing views to-
ward most important
media decisions
XIII.1.A.

concludes work on
all objectives;
summarizes student
progress sheets
XIII.1.B.

FIGURE 3

Name _____

STUDENT PROGRESS SHEET

(use one sheet per objective)

OBJECTIVE:

STARTING DATE:

PREDICTED ENDING DATE:

**ADJUSTED ENDING DATE
IF LATER THAN ABOVE:
(instructor must initial
if necessary to adjust)**

ENDING DATE:

**Use the back of this
form to evaluate your
performance of this
objective.**

DAILY LOG OF TIME DEVOTED TO THIS OBJECTIVE

Date	Approx. hours (round to no less than 1/2)	Nature of Activity
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

****You need only make an entry for days upon which you worked on objective, either in class or out.**

(use back of form if necessary)

REFERENCES

- Arends, R. L., Masia, J. A., and Weber, W. A. Handbook for the Development of Instructional Modules in Competency-Based Teacher Education Programs. Buffalo, New York: Buffalo University and Syracuse University, January, 1971.
- Bloom, B. S. (Ed.) Taxonomy of Educational Objectives, Handbook I: Cognitive Domain. New York: David McKay Company, 1956.
- Bruning, J. L., and Kintz, B. L., Computational Handbook of Statistics. Glenview Illinois: Scott, Foresman and Company, 1968.
- Carroll, J. B. A Model of School Learning. Teachers College Record, 1963, 64, 723-733.
- Gagné, R. M. Conditions of Learning, Second Edition. New York: Holt, Rinehart and Winston, 1970.
- Glass, E. V. Evaluation Without Objectives. Address before College of Education Faculty, University of Kentucky, February 7, 1972.
- Gordon, J. M., Jr. Individualizing Instruction. Detroit: Wayne State University, unpublished paper, 1970.
- Heathers, G. A Definition of Individualized Instruction. Paper presented at annual meeting of the American Educational Research Association, New York, February 6, 1971.
- Howes, V. M. Individualization of Instruction. New York: Macmillan Company, 1970.