DOCUMENT RESUME

ABSTRACT
         A study skills program is proposed to help students
in developmental programs acquire the real learning process required
for success in an academic setting. Based on a developmental,
personalized theory of instruction, the program has a general
planning and instruction procedure that contains the following three
steps: (1) The study skills task is stated in a sequence of
subskills. The student's preinstructional strategy for mastering the
task is observed and the subskills that the student uses
spontaneously are analyzed. (2) Instruction in the study skill task
is designed in a way that allows the student to see the limitations
of the spontaneous strategy and the advantages of the method being
taught. (3) The method of instruction should reduce the load on
working memory to the lowest possible level. Subskills should be
divided into the smallest concept packages. When these three steps
are used, most study skill tasks can be converted from traditional
individualized or group instructional designs to a personalized,
developmental design. (The task of outlining the main idea of a
reading assignment is used to illustrate the design and instructional
phases of the study skills program.) (Author/RL)

A Developmental Personalized Approach

for Learning Assistance in Higher Education

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Running Head: Developmental
                        Instruction

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A difficult problem has emerged in colleges and universities:
entering students do not have the basic skills required for successful
college-level work (Cross, 1971, 1976; Devirian, Enright, & Smith, 1976;
Grant & Hoeber, 1978). Primary and secondary schools have been blamed
for this problem; and they, with community support, have responded
with moves toward intensified instruction in "basic skills" and toward
establishing minimum competency standards for promotion and graduation
(Haney & Madaus, 1978).

Blame has also been lodged with the changing make-up of the general
college population. More minority students have entered college through
open enrollment plans; more handicapped students are attending college;
and more of the older and otherwise "nontraditional" students are be-
ginning or continuing their college careers (Lavin, Alba, & Silberstein,
1979; Cross, 1971, 1976; Grant & Hoeber, 1978; Kerstiens, 1975; Rosenberg
& Gersh, 1973).

For these and undoubtedly other reasons, many students attending
college today are severely in need of remedial or tutorial work to
develop, enhance, or refresh skills necessary for completion of their
courses. Some students may require instruction in study skills such as
notetaking, library usage, time management, or writing expository
prose. Having mastered these skills, many students can go on to
successful college careers. Other more severe cases, frequently
designated "high risk" students, require comprehensive remediation to
bring math and/or reading skills up to a level commenserate with require-
ments of even the most introductory courses.

Universities have responded to these students by instituting

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programs and centers to provide instruction in the skills which students will need to accomplish work required in content courses. These programs are numerous in form and content. Their range extends from whole-class instruction to individualized, modular, laboratory approaches and to tutoring-plus-counseling programs providing instruction along with a ready-made support system for nontraditional students. The programs are financed and staffed by various departments within their colleges and universities and may or may not offer credit for work completed. Effectiveness varies. (Grant & Hoeber, 1978) but academic failure is one of the least-cited reasons for students' departures from college before graduation (Feng & Fetters, 1978).

Students in study skills classes may suffer problems distinct from any skill deficits they possess. They may experience what Case (1978a) has termed a "memory overload" as they are bombarded by academic material and by the fine points of study techniques. The result is their inability to put their new skills into practice in academic courses.

Individualized study skills instruction, with its diagnostic-prescriptive approach, alleviates some of the memory overload, for students are monitored as they progress at their own pace through material which they specifically need. The whole class approach does not afford this luxury, and some students inevitably fail to master the very material designed to help them in other courses.

A developmental approach to curriculum design has been proposed as one means of cutting down students' memory overload. Case (1978a, 1978b) and others have studied the approach specifically as it is applied in primary schools but maintain that its application to adult education is equally viable and in fact necessary as older learners attempt to

to master certain kinds of material. Case (1978a) has stated, "There are a number of cognitive tasks in which adults experience a working memory overload, and on which they apply strategies which are intuitively compelling yet incorrect." Educators who have seen the frustration of college students who sincerely want to master the skills required for college success can readily identify with Case's phrase "strategies that are intuitively compelling yet incorrect."

The developmental approach, in brief, requires breaking subject matter into subskills which are taught and practiced before the entirety of the topic or skill can be considered to have been mastered. The ramifications for study skills instruction are obvious: break the tasks to be learned into small enough units so that instruction and subsequent practice will not cause a "memory overload." Students will then have a better chance of fully mastering those skills which are supposed to aid them in their college work. Emphasis should be on the processes — the subskills — and their total mastery rather than on numerous finished "products." Mastery of these processes will facilitate transfer of skills to other academic work.

Case (1978a) lists three steps in designing a developmental curriculum. First, the subskills in the task to be taught must be stated in detail. Also, assessment must be made of the strategies which students would use spontaneously to accomplish the task. Second, instruction should be designed in such a way that students realize the limitations of their strategies and understand why the methods beign taught are preferable. Finally, instructional activities should reduce the load on working memory as much as possible.

It is by no means a new idea to analyze a task into its subskills

in order to develop instructional sequences (Gagné, 1970; Otto et al., 1974).
To assess what the students know is not new either. It is, however, some-
what unique to elicit what approaches students would spontaneously take
to accomplish a task — what compelling, yet potentially incorrect ideas
they have. The logistics of whole class instruction preclude knowing
students' spontaneous strategies prior to planning curricula. But dis-
cussion of how students would approach a task can help to make them recep-
tive to new material. They can compare what is presented with their own
strategies, contrast, alter, discard, and arrive at an understanding of
why the new method is perferable th their own.

The load on working memory can be reduced by elmininating from the
instructional sequence all but the most crucial subskills, the key pro-
cesses, required to accomplish the task. Activities to gauge mastery
should be as pure an indicator as possible that the task has been under-
stood. Activities that require the use of numerous extraneous skills
cloud the question of mastery -- and overload memory as students seek
to remember the many processes in order to accomplish one task.

The college reading and study skills facilitator or instructor can
utilize the Case (1978a) principles of developmental instruction in build-
ing a manageable and efficient study skills program. The transition from
a traditional individualized or group study skills program to a personal-
ized developmental program can be made in a practicable manner, but the
instructor must first understand the general procedure, in addition to
the content of the study skill area to be taught. The study skill chosen
for this demonstration is the general task of main idea outlining, and
the steps that follow illustrate the design and instruction phases of
the developmental program.

The facilitator/instructor should present the task of outlining a multi-paragraph, single-theme selection to the student and observe and record the student's spontaneous strategy for completing the task. After the spontaneous strategy is observed, the facilitator should generate hypotheses about the strategy applied by the student. Was it incorrect, inappropriate or oversimplified for mastery of the task? This would involve assigning several more main idea outlining tasks and noting the types of skills and the sequence of skills that the student uses spontaneously in attempting to complete tasks similar in nature to the first task presented. This step could, for efficiency, be preceeded by analysis and compilation of all possible strategies and substrategies that might be expected of a student attempting a main idea/ detail identification.

The facilitator would tnen determine the most efficient and precise way that the task of main idea outlining could be accomplished. Case (1978a) suggests consulting an expert for this step, which would most logically preceed the actual teaching/learning situation. The expert's strategy should be analyzed and dissected into a series of subskills. This is best accomplished by breaking down the major operation into several global steps, analyzing the global steps, and then subdividing them into a series of subskills. The experts (Joffee, 1975; Giroux & Williston, 1974) agree that the following global steps make up the task of outlining a reading selection: 1. Identify the main ideas and supporting details. 2. Identify the patterns of detail presentation that established the relationships between main idea and details and the relationships among details. 3. Generate an appropriate outline/graphic presentation of the relationship of the main ideas and supporting details. These three general operations are each composed of a sequence of several

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subskill tasks which are analyzed. The expert's strategy, now existing as a group of major steps which are composed of a series of subskills, is examined and, if possible, simplified with the intention of forming the most concise, most efficient strategy possible.

In keeping with Case's (1978a) principle. the instruction should be designed in such a way that the mehtod or strategy being taught will be obviously recognizable as the advantageous course to follow, and the ineffective method used spontaneously by the student on the first trial of the task is readily recognizable as a limited, oversimplified, or inappropriate tactic. This can be accomplished by presenting the student with guidelines for determining whether the attempt has been successful or unsuccessful. The student might learn, in the example of main idea outlining, to test his strategy by asking these four questions: Have I isolated the general topic addressed in the paragraph or selection? What is important to understand about the relationship of the main idea and the supporting details? Have I included irrelevant ideas that the author never intended? Have I discovered the author's major point of focus?

The student, after learning to test his or her strategy, should be given tasks similar to the original task, but for which the student's spontaneous strategies are inappropriate. The student learns at this point that a new technique is necessary for successful completion of the general task of main idea outlining. The student should become aware that one strategy, particularly if it is limited, will not work for all similar tasks. A limitation frequently observed in outlining reading selections is over-dependence on external clues such as topic sentence placement or specific wording which identifies main ideas. When the student encounters passages that contain no external clues, it

becomes evident that new tactics must be learned.

The student must then be helped to understand why the limited strategies did not work. This step can usually be effectively accomplished by student diagnosis of the problem. If the student failed to identify the correct main idea because of overreliance on external clues or because of any of a number of limited strategies, he or she should be challenged to find out why that strategy did not work, and as a result should be encouraged to find a more reliable strategy.

Immediately after the student's attempts to explain why the first method did not work, the instructor should demonstrate the correct method by explaining each subskill in sequence. Main idea outlining requires the student to adhere to a somewhat structured sequence of subskills that build to form a logical graphic representation of main ideas and supporting details. The student should be given sufficient practice in using the new strategy on tasks similar to the first type encountered in the observation and analysis phase. After the student gains mastery with the new strategy, the instructor/facilitator should provide the student with opportunities to apply the technique to more complex varieties of outlining.

The final principle in the developmental theory of instruction involves minimizing the load on working memory by limiting the number of items that the student must attend to at any given point in the instruction (Case, 1978a). Optimally, unfamiliar skills should be introduced gradually, and each skill should be practiced sufficiently prior to introducing the next in the series. Case (1978a) suggests that the more salient the stimuli or clue to be used in the task, the lighter the load will be on the working memory. Main idea outlining would logically be divided into three global steps. The first step,

identification of main idea and details, can be divided into at least
three subskills: identification of general and specific terms, identifi-
cation of topic sentence and identification of supporting sentences. The
second step, identification of main idea/detail relationship patterns,
can be divided into recognition of the patterns of chronological order,
enumeration, cause and effect, general to specific, specific to general,
easy to difficult, difficult to easy, most important to least important, and
least important to ·most important. The third step, generation of an
outline/graphic representation of the main idea and details, should
include instruction in selection of the appropriate type of graphic
representation for the assigned task and in the steps used in the
construction of each type of representation.

Developmental instruction in personalized study skills programs
may well be the most workable solution for many students who need to
master the process of learning. A program such as this allows the student
and instructor/facilitator to analyze and plan learning strategies as a
team. It allows for a healthy balance of demonstration instruction
and discovery learning, combining the positive effects of each — efficiency
and high student involvement.

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