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ABSTRACT
        Academic learning is a complex activity which is not
easily modified. Several models have been used to deliver lee ling
improvement programs, including the study skills course and the
discrete skills approach. These approaches make few if any
accommodations for variations in individual differences or needs.
Four factors, however, indicate that individual factors may be
responsible for the differential effects of skill-based programs: (1)
students appear more likely to learn well when they have a personal
conception of learning; (2) personal causation appears important to
effective learning; (3) students who set goals appear to have a
better chance to succeed and a better basis upon which to choose a
course of action; and (4) understanding is developmental in several
ways. These variables illustrate the idiosyncratic influences which
may affect learning improvement program outcomes. While most students
will probably respond positively to well-designed group-oriented
learning improvement programs, some students will require a careful
clinical approach oriented to addressing unique personal needs. This
paper describes a clinical approach to making decisions on learning
improvement programming which provides a structured,
decision-oriented model to address idiosyncratic developmental needs.
The clinical approach is described, assumptions for decision-making
for learning improvement programming are discussed, and clinical
decision points are presented. The areas of assessment, goals,
objectives, strategies, and evaluation are included. (NB)

A Clinical Approach to Learning
Improvement Decision-Making

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Research and theory on effective academic learning indicates that simple strategies taught in superficial programs produce poor results (Ford, 1981; Sherman, 1985). The primary reason that this type of program is ineffective is that academic learning is a complex activity which is not easily modified. Biggs (1978), Brown (1978), Pask (1976), Sherman (1985a) and others have demonstrated that factors such as perception of personal control, self-awareness of learning, personal goals and affective states can influence the quality and efficiency of academic learning. In addition, it has been shown that improved academic learning is a function of substantive changes in how students study and that changes in study actions frequently require alterations of fundamental modes of processing information. These changes are made when students adopt new thinking skills and apply these skills in a systematic manner (Sherman, 1984). While changing how students study is a clearly accepted goal for academic learning programs, the processes by which these changes can be made are far from obvious.

Several models have been used to deliver learning improvement programs. Perhaps the most popular approach is the study skills course. Typically these programs teach a sequence of effective study routines such as SQ3R and are based on at least an implicit assumption that a good way to study exists which will be benefitial to everyone. While how-to-study advice is quite common, there is little but anecdotal evidence to support its efficacy. In fact, when students do not use the advice or the skills "do not work," experts often blame the students for being lazy (e.g. Bower & Hilgard, 1981). A second change model is the discrete skills approach in which cognitive behaviors are analyzed

and modeled for students to imitate. This approach is based on cognitive behavior modification research which has shown that modeling and imitation are effective in helping individuals develop cognitive control (e.g. Meichenbaum, 1974). Programs using this approach have shown success in changing student academic performance when students' have actually changed their study behaviors. When learning improvement programs have included social and/or emotional involvement as well, the potential for positive change appears enhanced (Sherman, Branch & Woodson-Robinson, 1988).

These approaches to learning improvement programming are basically designed around a theoretical concept of academic learning which is normative. In most cases, the program design is based on cognitive behavioral principles and offered to students either in groups or individually. Few if any accommodations are made for variations in individual differences or needs. However, four factors indicate that individual factors may be responsible for the differential effects of skill based programs.

First, there is evidence that students are more likely to learn well when they have a personal conception of learning. Saljo (1979) interviewed Swedish teenagers and found a "taken-for-granted" and a "thematic" conception. These conceptions appeared to be characteristic of learning in school and out. Studies on metacognition also illustrate the importance of self-understanding for learning success (e.g. Long and Long, 1987). Thus, it is likely that the success of learning improvement programs will be affected by students' conceptions of learning. Learning conceptions can include the skills an individual has available, the skills selected, the processes by which skills are

selected and the general organization of learning. Students can reveal their conceptions in several ways such as, through their descriptions of how they study and their actual study behaviors.

Second, personal causation appears important to effective learning (Sherman, 1985a). The ability to attribute outcomes to behavior contributes to academic success just at it does to success in other sectors (e.g. Peters & Waterman, 1982). However, perceptions of personal causation vary widely (Lefcourt, 1976) and are associated with performance differences. For example, people who attribute good and bad happenings to luck tend to be much less successful. This relationship between personal causation and success appears to hold for academic achievement as well. For example, students who ask, "What did the teacher give me?" and "How did I do on the test? indicate that they do not understand their personal ability to control academic outcomes. In effect, they accept grades as something the teacher "gives" rather than a product of their effort to select and use specific skills.

Third, students who set goals appear to have a better chance to succeed as well as a better basis upon which to choose a course of action. The evidence available indicates that students' ideas of purpose when they study is far from uniform. A good match between what a professor expects and what is learned might be a reasonable definition of effective study. Yet, many students study with no specific purpose other than to "go over" the material. Thus, study is a process which is complete when the process of "going over" is done (i.e. finished the last page). In contrast, study for more effective learners is outcome oriented and complete only when some criterion is met (i.e. answer sample test questions, write a summary, etc.). Without some form of self-

evaluation, it is impossible to assess the quality or quantity of learning. A characteristic of poor students is their lack of understanding of what they do and do not understand as well as their inability to separate what they must know or learn from what they believe.

Fourth, it is quite clear that understanding is developmental in several ways. From a Pragetian perspective, learning can be classified in four major stages (sensory motor, preoperational, operational and formal). Movement from one stage to the next is influenced by a variety of experiential, maturational, social and interactive (equilibration) factors. Perry (1970) and Biggs (1978) have also proposed developmental schemes which describe a structure of the growth of understanding. These theories, while vague on the specific factors which promote growth, make clear the uneven pace of intellectual progress within and between individuals. Thus, it is quite likely there will be major differences in where, how and why a student might study the same or similar material at various times. These differences could easily be magnified within a group as individual variations multiply.

While these may not be all the variables which influence the effectiveness of academic success programs, they do illustrate the idiosyncratic influences which may affect learning improvement program outcomes. An implication may appear to be that all learning improvement programming must be individual. However, for many students, individually focused improvement programming may not be necessary. In fact, it is quite likely that most students will respond positively to well designed group oriented programs. However, for some students, improved learning may be possible only with a careful clinical approach oriented to addressing unique

personal needs. The purpose of this paper is to describe the decision points in a clinical approach to learning improvement.

The Clinical Approach

Clinical approaches are characterized by process and behaviors. The intent is to discover individual needs, define these needs. identify appropriate treatments, select and deliver a treatment and evaluate the results (e.g. Cormier & Cormier, 1985). In most cases, the process is guided by a set of assumptions or theory which structures the selection of specific behaviors. Thus, clinical counselors such as Lazarus (1981) and Seay (1978) describe not only an action sequence but also the major premises upon which their decisions are based. Implementing a clinical program requires more than performing a set of mechanical actions such as giving tests or presenting a study skills program. Like other solution oriented processes, informed, reasoned and carefully crafted decisions are critical for success.

The clinical model then is an information oriented process intended to enhance the clinitians' probablity of success. Though clinical judgements are recursive, clinical processes are usually presented as linear. A common representation of this type of process model is presented in Figure 1. This general concept has been the genesis of literally hundreds of more specific conceptualizations of structured processes in fields like instructional design (e.g. Sherman, 1980) and business management (e.g. Ullrich & Wieland, 1980). In the application reported here, the goal was to identify decision points in a clinical approach to learning improvement.

Assumptions

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A main assumption for decision-making for learning improvement programming is that human actions are the resuit of interactions between emotions, cognitions and behaviors (e.g. Adler, 1964; Lazarus, 1981). This implies that there is a functional interaction between all components of human action. Consequently, it may be important to incorporate change strategies which influence more than isolated study behaviors to promote sufficient and enduring change. It appears highly unlikely, for example, that individuals could make fundamental changes in the attention, encoding, storage and retrieval processes used while studying and not coincidently make changes in the ways these same processes are used in other areas of their lives.

A second assumption is that effective learning is a product of using learned skills rather than measured ability. Clearly, considerable evidence exists that an aptitude defined as general intelligence is correlated with academic achievement (e.g. Cronback and Snow, 1977). However, there have been sufficiently frequent challenges to the trait conception of intelligence to justify making the assumption that academic success is skill based (Bransford, 1979; Sherman, 1983; Resnick, 1987). From the skill based perspective, school success is a product of skills and abilities which must be learned and applied to the unique task requirements demanded in school. Unfortunately, rarely are these skills explicitly taught, though many students do appear to learn them. However, many others only partially or never learn to learn well. These learning to learn skills appear to require considerable dedication to teach and to learn as well as "developmental" time and energy (Sherman, 1985b). In addition, considerable skill

may be necessary to teach these skills particularly to students who have had long standing learning problems.

Finally, cognitive science and cognitive behavioral psychology offer theory and research upon which instructional decisions may be based. These theories are particularly well suited to investigate, analyze and understand problems individuals may experience relative to academic learning. Cognitive science and cognitive behavioral psychology also emphasize the powerful effects of variables such as prior knowledge, preconceptions, experience, personal attribution and cognitive/behavioral action on academic success. In addition, cognitive scientists and cognitive behavioral psychologists have been very active in producing effective intervention strategies which can be applied well to academic learning problems (e.g. Sherman, 1985b).

Clinical Decision Points

The purpose of a clinical approach is to generate and select change processes which are more responsive to individual needs than is typical of most learning improvement programs. By involving students more completely, the opportunity to make lasting changes in both processes and skills increases. In fact, it is not unrealistic to consider this approach as developing a "lifestyle" which enhances learning potential (Sherman, Branch & Woodson-Robinson, 1988).

Clinical decision making is guided by theory, practical resources and a general process schema. Figure 2 is a visual representation of decision points in a clinical approach to learning improvement. This decision-making model is based on the general sequence of a systematic approach and structures specific decision points for designing an individual learning improvement program.

<u>Assessment</u> The purpose of assessment is to gather information to understand the individual, the conditions impacting the individual and to develop an information base upon which a developmental program may be built. Three subcomponents are included in assessment.

1. Problem Identification: The purpose of problem identification is to identify the individual's specific presenting situations and the range of these situations. Doing so will involve carefully structured interview procedures and the use of assessment instruments as well. The goal is to gather sufficient information to help individuals understand the nature of their learning problems.

2. Defintion: The client and learning improvement specialist review assessment data to define problem situations. The goal is to identify the conditions, behaviors, attitudes and emotions which have prevented success.

3. Resolution: Once impediments have been defined, the next step is to propose and discuss the means to resolve them. The purpose is to help students understand that actions are available to overcome learning problems and that they can develop skills and abilities to succeed.

<u>Goals</u> Goals establish the main purposes of the learning improvement efforts. Goals should be clear, outcome oriented, realistic and personal. Lloyd (1983) has noted that goal planning can be reactive in that the process of setting goals can promote behavioral change. Thus, goal setting may be an important contributor to the success of a learning improvement program. Four subcomponents are included under goals.

1. Solicit and Present Options: This subcomponent of Goals is intended to provide students with a range of options for outcomes they could pursue. Ideally, students will propose many of these options. However, it is likely many students will not be able to either propose or independently consider potential outcomes. The goal is to construct a list of potential outcomes.

2. Explore Outcomes and Behavior Changes: The next step is to explore the outcomes generated and the changes which will be necessary to reach those outcomes. It will

probably be necessary to work through each outcome sepa-
rately in order to cover each adequately and identify
implications for each. A relatively common problem with
students who do not learn well is that they express
willingness to "do anything." Thus, at this stage it is
a good idea to reality test the responsibilities, effort
and committment associated with each outcome.

3. Review Constraints, Committments and Opportunities: Af-
ter outcomes have been realistically discussed, students
should be led through an examination of factors which
will help and hinder them achieve the goals they choose.
This examination is done at this point in order to help
students recognize the relation between their actions,
the control they exercise over contributing factors and
their success. In particular, students should explore
factors which they believe have prevented them from suc-
ceeding (e.g. interest, poor study conditions, etc.),
committments they have which can and cannot be modified
and opportunities which may promote success.

4. Select Outcomes: The final step in the goal setting
process is to select specific outcomes. It is critical
that these goals be positive and outcome oriented so that
the behaviors leading to success as well as the products
can be measured. Goals may be choice oriented when stu-
dents possess the necessary skills or developmentally
oriented when new skills, attitudes and behaviors are
needed. All goals should be "owned" by the student and
be consistent with resources available. Again, students
will often need considerable assistance to select real-
istic goals. The purpose is for students to make an in-
formed and conscious decision about changes they will
make.

Objectives This component focuses on analyzing goals into a

plan of sequenced behavioral changes which are specific and goal

oriented. The purpose is to develop a sufficiently detailed set

of objectives which will make possible consistent progress toward

goals. This "milestone" approach was used successfully by

DeCharms (1980) to teach disadvantaged youth to control effec-

tively the events which influenced their lives. Five subcompo-

nents are included.

1. Specify Behavioral Changes: It is necessary to identify
behavior changes needed to meet each goal. A major pur-
pose of this component is to identify actions needed to
produce the outcomes specified in the goals. Thus, for

each goal it will be necessary to state specifically what the students must do differently to meet the goal.

2. Establish a Sequence of Objectives. At this point, each goal should have a set of actions. These actions must now be analyzed into separate objectives and placed in a sequence. This is basically a shaping sequence or behavioral hierarchy which defines the steps leading to goal achievement.

3. Develop a Plan of Action. The students must now develop a specific plan of action to accomplish each objective. The process is to review the whole sequence of objectives and develop an action plan for each. Again the emphasis is on actions that will be taken to achieve objectives. Students should be encouraged to identify what they will do in terms of observable behaviors to achieve outcomes. Specificity is particularly critical for "mental" actions to avoid descriptions such as "read," "going over" and "study."

4. Review Obstacles. Students must review all objectives and evaluate them for practical, personal and logistical obstacles which could prevent or hinder success. This should include a careful review of living arrangement, behavioral habits, study procedures, resources available and other factors which may inhibit using effective learning skills.

5. Secure Committment. Students should perceive themselves as fully informed and ready to dedicate themselves to attacking the goals they have established. Goals and objectives should be written and an overt committment should be made such as a personal contract.

Strategies This component involves selecting and implementing specific actions to promote change. Two types of strategies will be necessary: instructional strategies to teach the skills, attitudes, learning strategies and behaviors students need to be succcessful and the motivational strategies to encourage and maintain progress toward goals. Five subcomponents are included:

1. Generate and Review Options. Along with students, the learning skills specialist should identify potential strategies for learning new skills. In many cases, students will have few specific ideas about strategies because poor learners typically have little sense of how they learn. Consequently, students will probably have to be told about strategies available and the implications of these strategies as well as general procedures for presenting strategies. A critical action at this

point will be t. ensure students understand that change is necessary and that the strategies being considered are changes they must make.

2. Select Strategy and Form Plan. Once strategies have been reviewed, a plan should be developed. This may be a co-operative venture though most likely the learning skills specialist will be the primary plan developer.

3. Present Plan. Students should be presented with the plan as a formal set of actions leading to development of skills, attitudes and strategies. The plan should be thoroughly explained including the effort and committment required by the student.

4. Secure Committment. As with goals and objectives, students should overtly commit to completing the planned change strategies. The formality of a signing process may produce reactive effects and provide a reference document for problem resolution.

5. Program Delivery. The final subcomponent is delivering the program. In addition to providing the needed training and supervision, care should be taken to schedule appropriately. Learning assistance specialists should also employ a variety of interpersonal skills, understanding, emphathy and positive regard. A special emphasis should be placed on change and the need for change to improve learning skills and strategies.

Evaluation The last component is evaluation, the process of gathering information and judging outcomes. Evaluation of learning improvement programs must be both formative or on-going and summative to determine final outcomes.

Formative Evaluation is represented as a cyclical process of examining goal formation, committment, change actions and outcomes. Formative evaluation should be based on clinical impressions as well as outcomes defined in objectives. The continuing nature of evaluation, in addition to providing feedback on student progress, will help students make self-judgements about their successes. Formative evaluation as an on-going process should assess goal formation, the nature and quality of student committment, the quality and quantity

of student outcomes and results achieved from implementing new study skills attitudes and strategies.

Summative evaluation focuses on the changes students have made during a program and the contributions components of the program have made to these changes. Summative evaluation should investigate three main factors. First, the decision-making process should be examined. This will include assessment of all components of the clinical model to verify the quality and propriety of the decisions made. Second, all goals should be evaluated to determine if they have been met. Finally, client satisfaction should be judged in terms of self-perceptions and the client's perception of the quality of the services provided.

This clinical approach to making decisions on learning improvement programming provides a structured, decision oriented model to address idiosyncratic developmental needs. An approach like this is probably most appropriate in situations such as those suggested by Gold (1981) when other more economical or group oriented methods are ineffective. Nonetheless, a committment to resolving learning problems with all students will be more successful when intervention decisions are guided by a systematic conceptual decision model.

FIGURE 1

General Process Model Depicting
A Logical Behavioral Sequence

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┌─────────────────────┐
│                     │
│     ASSESSMENT      │
│                     │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│                     │
│       GOALS         │
│                     │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│                     │
│     OBJECTIVES      │
│                     │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│                     │
│     STRATEGIES      │
│                     │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│                     │
│     EVALUATION      │
│                     │
└─────────────────────┘
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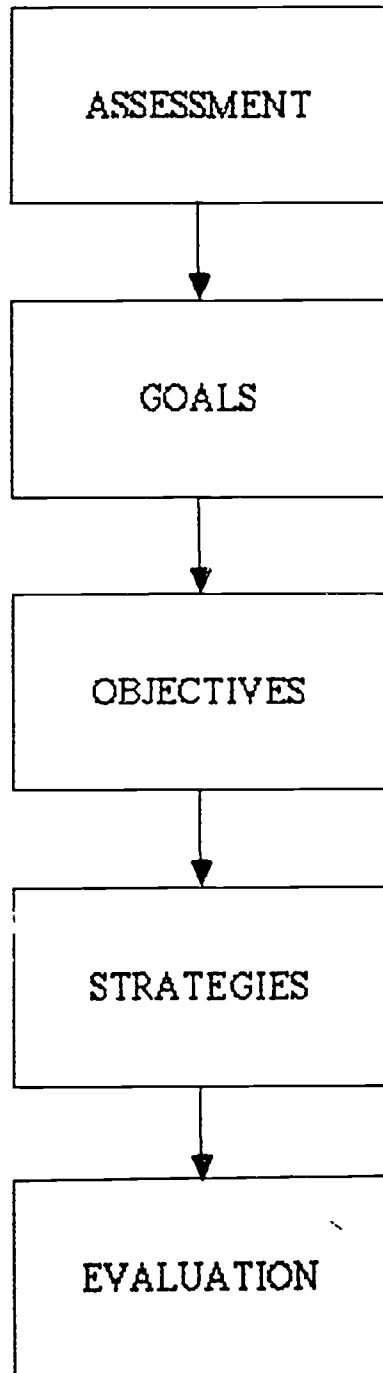
FIGURE 2

Decision Points in a Clinical Approach to Learning Improvement

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┌─────────────────────────────────────────┐
│          Problem Identification          │
│                Definition                │
│                Resolution                │
└─────────────────────────────────────────┘
                     │
                     ▼
┌─────────────────────────────────────────┐
│            Solicit and Present           │
│                Goal Options              │
│                                          │
│           Explore Outcomes and           │
│              Behavior Changes            │
│                                          │
│            Review Constraints            │
│             and Opportunities            │
│                                          │
│              Select Outcomes             │
└─────────────────────────────────────────┘
                     │
                     ▼
┌─────────────────────────────────────────┐
│         Specify Behavior Changes         │
│                                          │
│        Establish Change Sequence         │
│                                          │
│           Develop Action Plan            │
│                                          │
│             Review Obstacles             │
│                                          │
│            Secure Committment            │
└─────────────────────────────────────────┘
                     │
                     ▼
┌─────────────────────────────────────────┐
│              Review Options              │
│                                          │
│             Select Strategies            │
│                                          │
│               Present Plan               │
│                                          │
│            Secure Committment            │
│                                          │
│               Deliver Plan               │
└─────────────────────────────────────────┘
                     │
                     ▼
┌─────────────────────────────────────────┐
│   Formative                 Summative    │
│                                          │
│              Goals          1. Process   │
│                             2. Outcome   │
│   Outcome                   3. Client    │
│   Judgement    Committments    Satisfaction │
│        Change Actions                    │
└─────────────────────────────────────────┘
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