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ABSTRACT
              The Information Acquisition Preference Inventory was
used to examine cognitive styles in relationship to students' use of
study tasks and to assess subjects' preferred ways of learning and
problem solving. The inventory, which has students rank words
describing their own learning behavior, identifies four distinctive
learning preference modes: concrete sequential (CS), concrete random
(CR), abstract sequential (AS), and abstract random (AR). A study
skills survey completed by 40 students enrolled in a college reading
and study skills course indicated that the concrete sequential
learner was predominant among the students sampled. Not only were 46%
of the students exhibiting one learning preference (concrete
sequential learners), but 79% of the double dominant learners had a
CS mixture. As for study techniques, the greatest number of learners
in all categories reported using personal schedules "sometimes," with
the next largest number using schedules "almost always." Most
students reported using the textbook study system "sometimes," and
the Cornell note-taking method and mapping techniques "very little"
or "never." Results also indicated that the concrete random learners
used the study techniques somewhat more than did the other students.
(Appendixes include the study skills survey and the Information
Acquisition Preference Inventory.) (HOD)

ED239223

Student Learning Styles and Use of Study Techniques

by

Sally A. Lipsky

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Until recently individual differences were not a contributing factor in the many educational practices applied to students (Kiernan, 1979). However, currently more and more educators are considering individual preferences and tendencies ; that is, learning styles, in the development of instruction. There are many researchers in the field of learning styles who indicate that "how a student learns is perhaps the most important factor related to academic achievement" (Dunn, Dunn, and Price, 1979, p. 419). It would seem that this impact of learning styles on achievement would be especially important in the undergraduate students' study processes. With the proliferation of reading and study skills courses on college and university campuses within recent years, it is becoming increasingly necessary for educators to consider learning styles within the context of study approaches. Thus, the purpose of this study is to respond to the following questions:

1. What are the dominant cognitive learning preferences of undergraduate students enrolled in a college reading and study skills course?

2. How do individual students with dominant learning styles report their use of study skill techniques which were previously taught in the college reading and study skills course?

Definitions

Keefe (1979) defines learning styles as "characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p. 4). The cognitive behaviors deal with the learners' modes of processing information. As Messick (1976) points

out, it is important to distinquish cognitive styles from abilities.
Whereas abilities deal with cognitive content and are valued, cognitive
styles tell how students learn and are value differentiated. Keefe (1979)
categorizies the many dimensions of cognitive style as being either
receptive styles, such as field-independence/dependence; or concept
formation and retention styles, such as reflection/impulsivity.

On the other hand, affective styles are motivational processes
dealing with either attention styles, such as perseverance and anxiety;
or expectancy and incentive styles, such as locus of control, achievement
motivation, and the like. Finally, the physiological styles deal with
the biological modes of response. For example, variations in sex-
related behavior, health-related behavior, and various reactions
to the physical environment are all physiological styles.

Learning Styles and the Study Process

Research demonstrates that all of the three components of learning
style--cognitive, affective, and physiological--interact to determine
the effectiveness of the study process. Entwistle (1979 a.,b.) identifies
processes (cognitive) and motivation (affective) as important components
determining students' approaches to learning. It is these assorted
approaches which can be contributing factors as to why students don't
learn. As Gibbs (1979) points out, not only do students often lack the
necessary study skills or developmental level to succeed in their under-
graduate studies, but learning can also be impeded because students are of
different types who invariably choose different approaches, many of which
are not effective. Morgan (1980) cites study habits as consisting of
individual perceptions, orientation, and approaches to study; in

addition to the content learning outcomes.

Taylor (1980) agrees that the amount students learn depends upon their approaches and perceptions, but adds level of information processing as a vital dimension. Taylor's emphasis on processing level indicates the importance of cognitive style in a study situation, a basis for this research. Added support for research directed at cognitive style's influence on the study process is given by Marton and Svensson (1976). These two researchers conclude that the best way of influencing study skill is by influencing the "cognitive attitude" during the process of learning.

Biggs (1979) also views cognitive and affective styles as being interacting components of the study process. He divides this process of studying into three separate and independent dimensions--utilizing, internalizing, and achieving. Furthermore, these dimensions have strategic, or cognitive, characteristics; as well as the motivational, or affective, components. This study will examine the influence of the cognitive/strategic styles on the utilizing dimension of study.

Cognitive Style's Influence on Study Tasks.

Research has been done to assess the influences of undergraduate students' cognitive styles on specific study tasks. For instance, Annis (1979) investigated the effect of cognitive style, defined as field-independence/dependence, on textbook note-taking and subsequent testing. The results indicated a definite disparity between the two types of learners--the field-independents scored better on the assessment of sentences of high-structural importance to the passage the students read and took notes on.

Other research supports the descriptive differences between field-inde-
pendent (analytical, active, structured) and field-dependent (global,
passive, intuitive) learners. Morgan (1981) trained his experimental
group in a study technique involving self-assessment and self-monitoring.
As predicted, after reading, studying, and being tested on text material,
the field-independents in the experimental group performed markedly better
than any of the other groups.

This difference between field-independents and field-dependents
was not as definite in a study done be Annis and Davis (1978). The
authors investigated the effect of the variables of study technique,
preference for study technique, review, and cognitive style on a test
of recall and recognition. Though the field-independents scored better
when using a nonpreferred study technique with no review, there was no
other significant difference between the two styles when comparing
the other study situations.

Smith and Standel (1981) sought to compare field-independent and
field-dependent learners with the success of training of two
note-taking methods--paraphrasing and mapping. Although neither of
the treatment groups did better than the control group, the results
indicated that the field-independents did better than the field-
dependents on all of the comprehension test sections. No data
from this study signified whether one cognitive style benefited
more from one study technique that another.

Though by far most of the research on cognitive style and study
techniques has used the field-independent/dependent dimension, other
categories of styles have been examined. For example, Eanet (1977)

used impulsive/reflective cognitive styles in her study of a particular textbook study system, called REAP. Though this experimental procedure was found to be no more effective than the SQ3R procedure, or the control group, the impulsive students did show more improvement from pre- to post-tests than did the reflective students.

Svensson (1977) categorized students as being either atomistic-- focusing on details, or holistic--focusing on overall meaning. He sought to examine qualitative differences concerning the tasks of reading, understanding, and remembering text materials. After analyzing extensive data, Svensson concluded that holistic students were overwhelmingly more adept at drawing conclusions than were atomistic students.

These studies indicate that cognitive styles do have an effect on particular reading and study procedures. However, unlike the above studies which relied mainly on test performance to assess the influence of cognitive styles on study tasks, this study will examine cognitive styles in relationship to students' use of the study tasks.

The Information Acquisition Preference Inventory

Unlike much of the previous research, this study is based on a two-dimensional model of learners' preferred ways of learning and problem solving. The instrument used to assess cognitive style, Gregorc's Information Acquisition Preference Inventory, was adapted from Kolb's work in the area of learning styles.

Kolb (1971) developed what he terms the experiential learning model in which he combined the characteristics of learning and problem

solving into a single process. Kolb conceived of this process as being
a four-stage cycle containing active/passive and concrete/abstract elements.
These stages are: 1.)concrete experiences, followed by 2.)observation
and reflection, leading to 3.) the formation of abstract concepts and
generalizations, leading to 4.)hypotheses to be tested in future action;
which, in turn, leads to new experiences. Thus, this model is cyclical
in nature--recurring continuously.

```
                    concrete
                    experience
          active                     reflective
          experimentation            observation
                    abstract
                    conceptualization
```
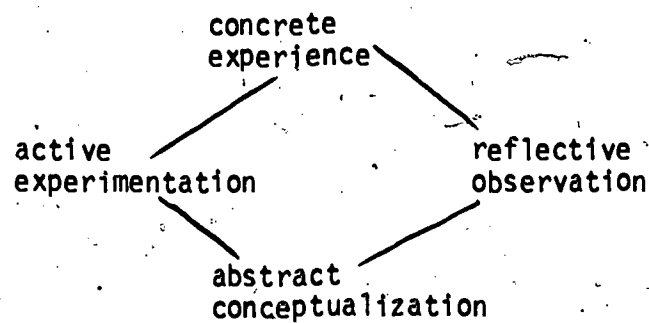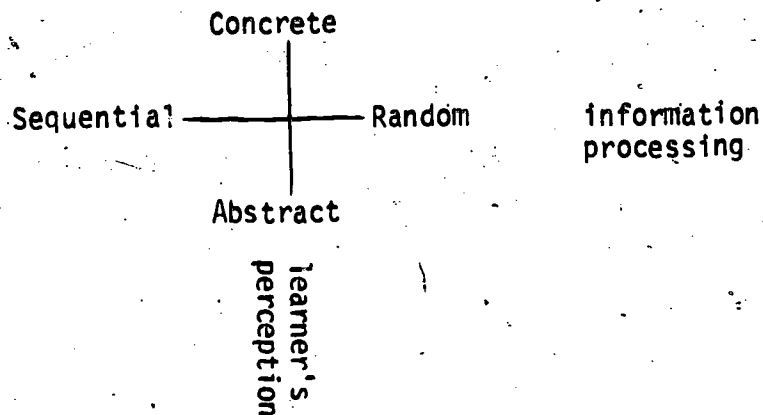
However, though everyone learns through this four-stage process, Kolb
notes that different stages are emphasized by different individuals.
No one stage, or mode, of learning is better or worse than another, though
various modes are appropriate in various situations. Everybody
"develops a learning style that has some weak points and strong points"
(p. 28). The goal, of course, is for individuals to become aware of which
modes they tend to emphasize and, thus, become more adaptive in different
learning and problem solving situations.

Kolb conceived his model from a managerial standpoint, as did
McKenney (1974) with his model of data-gathering and data-processing.
The information-gathering continuum, that is, the processes used to organ-
ize information, consists of preceptive and receptive individuals. Pre-
ceptive thinkers use concepts to focus on relationships between items;
whereas, receptive thinkers focus on details. The information evalua-

tion continuum; that is, modes of problem solving, has systematic individ-
uals who use very structured methods or intuitive individuals who have
a trial-and-error approach to problem solving. Again, each mode has advan-
tages and disadvantages in various situations where particular tasks are
more suited to one cognitive style over another.

```
                          Preceptive
                              |
                              |
      Systematic  ————————————+———————————— Intuitive    information
                              |                           evaluation
                              |
                          Receptive

                          information
                          gathering
```

(p. 81)
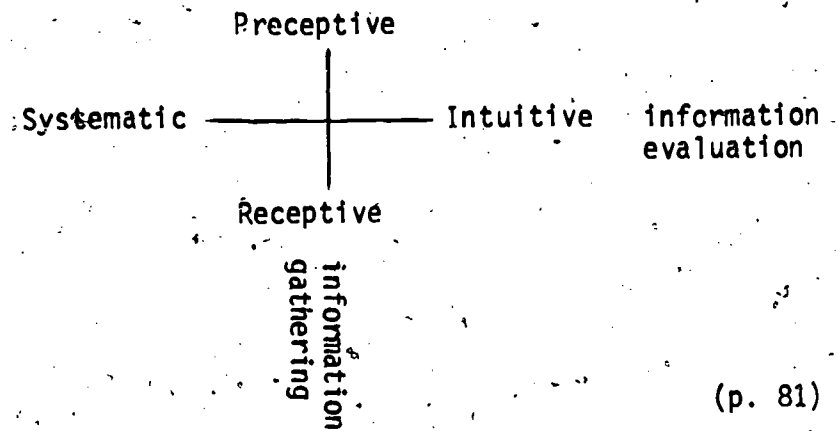
Both Kolb and McKenney have developed inventories to assess t e
styles described in the models. Gregorc's Information Acquisition
Preference (IAP) Inventory (1977) is very similar to the other two inventories,
although Gregorc describes his styles from a student/teacher viewpoint.
Like Kolb, Gregorc uses the concrete/abstract dimension in his model,
but he labels the second dimension sequential/ random, similar to
McKenney's systematic/intuitive.

```
                          Concrete
                              |
                              |
      Sequential ————————————+———————————— Random        information
                              |                           processing
                              |
                          Abstract

                          learner's
                          perception
```

Gregorc and Ward (1977) describe the four distinct learning preference modes as follows:

Concrete Sequential Learner (CS)--derives information from direct, hands-on experience; appreciates order and logical sequence; prefers step-by-step directions and clearly ordered presentations; will defer to authority and guidance; doesn't tolerate distractions.

Concrete Random Learner (CR)--has experimental attitude; can make intuitive leaps in problem solving situations; derives information from trial-and-error approach; likes stimulus-rich environments.

Abstract Sequential Learner (AS)--has excellent decoding skills; lots of conceptual, visual pictures in mind; prefers rational, sequential presentations; defers to authority; low tolerance for distractions.

Abstract Random Learner (AR)--able to sense and interpret human behavior; associates medium with the message; prefers receiving information in an unstructured manner; organizes material through reflection; likes stimulus-rich environment.

Gregorc and Ward maintain that, though everybody naturally uses all four modes, at least 90% of the hundreds of people they have observed expressed a definite preference for one or two modes of acquiring information(p.21) A sample IAP Inventory is attached to the end of this paper. This is a self-report inventory which relies on the students' ranking words descriptive of themselves. The numbers in each of the four columns are then totaled to obtain the score for each preference mode--the first column is CS, followed be AR, AS, and Cr.

Gregorc (1979a) does mention limitations of learning style assessment instruments. First of all, inventories such as these are exclusive and;

therefore, leave out other possibilities. Furthermore, students
(wittingly or unwittingly) are able to lie on self-report inventories.
Interpretations of words can differ from student to student. In addition,
"some students have used artificial means of adapting for so long that they
report these as 'preferred means of learning'" (p. 235). Thus, instead
of natural tendencies being reported, scores represent these artificial
styles.

<div align="center">Procedure</div>

A cover letter explaining the purpose of the study, Gregorc's
Information Acquisition Preference Inventory, a study skills survey, and
a return envelope were sent to 132 students who voluntarily enrolled
in the three-credit College Reading and Study Skills Course at the
University of Pittsburgh. All of the students who were sent a set of
surveys completed one of four fall sections or three winter sections of
the course during the 1981-82 school year. In order to ensure as much
honesty as possible, the students were requested not to sign their names
to the surveys. However, a code number was used to match-up both
survey sheets.

Upon return of the surveys, the researcher tallied the IAP Inventory
in order to find each student's dominant learning preference. The students
were identified as having one dominant style if the highest score in any
category was at least two points higher than the next highest category.
The students were identified as having double dominant styles if there was
a tie or only one point difference between the two highest scores. If
this one point difference existed for three or more categories, the students
were classified as having no dominant learning preference. Each student's

dominant style(s) was then matched-up with their responses on the
study skills survey.

Results

Of the total of 45 students who responded to the surveys, four
sets had to be immediately discarded because they were completed incorrectly.
In addition, one student, who could not be identified as having a single
or double dominant style, was not included in the final sample of 40
students.

The breakdown of the 26 students exhibiting a single dominant
learning preference was as follows:

Style	Number	Percent
Concrete Sequential	12	46
Abstract Random	5	19
Abstract Sequential	4	16
Concrete Random	5	19
Total	26	

The original intention of this research was to identify the single
dominant cognitive style of each student enrolled in the study skills
courses. However, according to the scoring system set-up to determine
learning preference, 14 of the 40 subjects fell into the category of
mixed, or double, dominance. Consequently, the researcher was faced with
the decision of whether to included the combination breakdowns of the
learners in the findings. In order to simplify interpretation of the
results, especially in regards to the second research question, the
investigator decided to combine the double dominant learners into one
large category. Not only will this single category ease the reporting

of data concerning the use of study techniques, but it was also
reasoned that these 'mixed' dominant students would skew the results
if added to the single categories. Surely the students who exhibit
double dominant learning preferences, some of which seemed at odds
with one another (such as CS/AR), have unique characteristics--the
interpretation of which was considered beyond the scope of this study.

However, it must be noted for future discussion that the
double dominant learners formed the following categories:

Style	Number	Percent
CS/AR	5	36
CS/CR	5	36
CS/AS	1	7
AR/AS	2	14
AR/CR	1	7

Total 14

The data for the second part of the study--how do individuals
with dominant learning styles report their use?--was compiled as follows:

Personal Schedule

Style	Very Little/Never number %		Sometimes number %		Always number %		Total number
CS	1	8	6	50	5	42	12
AR	0	0	3	60	2	40	5
AS	1	25	2	50	1	25	4
CR	1	20	2	40	2	40	5
"Double"	1	7	11	79	2	14	14

Cornell Note-taking Technique

Style	Very Little/Never number	%	Sometimes number	%	Always number	%	Total number
CS	7	58	3	25	2	17	12
AR	3	60	2	40	0	0	5
AS	3	75	0	0	1	25	4
CR	1	20	3	60	1	20	5
"Double"	5	38	3	24	5	38	13

Textbook Study System

Style	Very Little/Never number	%	Sometimes number	%	Always number	%	Total number
CS	2	18	8	73	1	9	11
AR	1	20	3	60	1	20	5
AS	1	25	3	75	0	0	4
CR	0	0	3	60	2	40	5
"Double"	3	23	8	62	2	15	13

Mapping

Style	Very Little/Never number	%	Sometimes number	%	Always number	%	Total number
CS	8	73	1	9	2	18	11
AR	5	100	0	0	0	0	5
AS	4	100	0	0	0	0	4
CR	1	20	3	60	1	20	5
"Double"	10	77	3	23	0	0	13

Discussion

The concrete sequential learner is prominent among the students in the sample. Not only are there more than twice as many concrete sequential learners among the students who exhibit one learning preference, but 79% of the double dominant learners have a CS mixture.

However, it is unclear whether the CS learner is representative of the population as a whole, or just indicates those students returning the surveys. As with any research which relies on the voluntary completion of mailed surveys, the sample is going to be biased. One could rightfully argue that the concrete sequentials, who are characterized as being orderly with a deference to authority, would more likely fill-out and return survey sheets.

On the other hand, it might be true that the college reading and study skills classes contain more concrete sequential learners. The students enroll in the course voluntarily, although sometimes with the strong urging of an advisor. Because concrete sequential learners need order in their study environments, they may be more inclined to enroll in a course which would reinforce and emphasize organized reading/study approaches. Experiencing formal, systematic study approaches would certainly appeal to the concrete sequential learner. These types of students would no doubt feel any deficit they have in their study habits much more acutely than the other three learner classifications, and; thus, tend to seek concrete help from coursework. As McKenney points out, "There is a tendency, particularly in late high school and college, for a student to increasingly choose courses that build on his strengths" (1974, p. 82).

The fact that 35% of this study's sample show a double dominance indicates a wider area of "strengths" for these students. It could be reasoned that the double dominant students should be more flexible learners and, possibly, more able to adapt to and use study techniques taught in class. However, the results of the second survey sheets-- students use of study techniques--do not support this hypothesis.

Before discussing the findings of the study technique usage sheets any further, it must be noted that, because of the small numbers in many of the categories, a difference in one student can result in a fairly large percentage difference. Nonetheless, patterns do emerge from the compilation of data.

To begin with, all types of learners exhibit a higher usage of personal schedules than they do with any of the other three techniques surveyed. However, there is no major difference among the cognitive styles as to how often they use schedules--the majority indicating "sometimes", with "almost always" a close second, except in the case of the double dominant students.

The majority of students in three out of the four single dominant groups use the Cornell note-taking technique "very little or never". However, the majority of the concrete random learners indicate that they "sometimes" use this lecture note-taking technique.

All of the learner categories have a clear majority of students who use a text book study system "sometimes". This wide majority is also evident concerning the mapping usage for four of the five groups. The concrete random learners once again break the pattern established by the other groups--most of the CR students "sometimes" use the mapping technique.

Again, any discussion of the results of this portion of the study must be viewed within the context of the limited sample size. Certainly the findings would be more meaningful if there were larger numbers involved. However, certain patterns of usage can be concluded from this sample. First of all, all categories of learners--those having single as well as double dominant preferences--report similar amounts of usage of the study techniques. Generally, all use personal schedules "sometimes", with "almost always" a close second. The textbook study system is a definite "sometimes" for all the learner groups. The Cornell note-taking method and the mapping technique are used "very little or never" by most of the cognitive styles. However, one learning style--concrete random--does stand out in relationship to the other styles. The concrete random learners report using the study techniques somewhat more than do the other students. This reported increase in usage is especially apparent with the Cornell note-taking and mapping techniques, and to a lesser degree in the schedules and textbook study system.

It is difficult to explain why concrete random learners report a higher usage of these four rather formal and systematic study techniques. It would seem that concrete random learners would typically shun standardized procedures as being a hindrance to their preferred trial-and-error approaches to problem solving. In fact, it is the concrete random learners who are described as making intuitive leaps in unstructured experiences and, thus, are often chided in structured situations for not showing their steps--all of which seem contrary to the organized study techniques taught in reading and study skills courses. On the other hand, concrete random learners have a

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much stronger experimental attitude and accompanying behavior than do the other three learner types. It seems that this experimental characteristic would be essential for students who are expected to change and adapt their techniques of study. Students need to be able to give up former study habits and then be willing to try new techniques and procedures if they are to successfully become more efficient learners. The concrete random learner is most comfortable with trying new procedures--an attitude most likely to lead to the adoption of different habits of study. Thus, it is possible that the pattern of increased study technique usage displayed by the concrete random learners is a result of their trial-and-error approaches and their willingness to experiment.

The findings of both questions addressed in this study hold implications for educators involved in college reading and study skills courses. First of all, both the instructor and the students need to know their styles of learning. This self-awareness can only aid the students in gaining flexibility concerning their study habits. This flexibility needs to be extended to the instructor's presentation of various reading/study procedures. As Gregorc (1979a) himself admits, "Diagnosis of learning style is far from being an exact science. We must, however, continue to diagnose in order to understand more about . . . how people learn." (p. 236) If a typical study skills course attracts more concrete sequential learners, educators must seek ways to recruit and adapt techniques for the other types of learners. After all, the needs of all types of students must be met, especially in a course which teaches skills deemed essential to academic success.

Furthermore, instructors need to adapt teaching methods, as well as course content, to increase the students' usage of various study skills. Techniques based on the strengths of the students, though not exclusively, would seemingly be popular with students. Classroom activities incorporating the experimental trial-and-error approaches so familiar to the concrete random learners are needed. This includes both small group and independent work. The students need to be encouraged to try new techniques and to learn to adapt these techniques to various learning situations.

Certainly continued research needs to be done to verify these conclusions. This research needs to include a larger and more representative sample. Furthermore, another instrument based on a different model of learning styles might be more appropriate, especially a bi-polar model which usually results in more clear-cut findings.

In addition, future studies could examine learning styles, reported use of study techniques, and the students' academic success, i.e. grades, in the study skills courses, as well as the content-area courses. Also, although not included in the original problem of this study, the results indicate a definite disparity among the popularity of the four study techniques. Schedules are obviously the most popular technique and mapping the least. Whether this indicates a difference of emphasis in coursework or a real difference in usefulness to the students is unknown. However, findings such as these have a significance to any instructor of a college reading and study skills course, and would certainly be an area of future exploration.

References

Annis, L. F. Effect of cognitive style and learning passage
organization on study technique effectiveness. _Journal of_
Educational Psychology, 1979, _71_, 620-626.

Annis, L. & Davis, J. K. Study techniques and cognitive style:
Their effect on recall and recognition. _Journal of Educational_
Research, 1978, _71_(3), 175-178.

Biggs, J. B. Individual differences in study processes and the
quality of learning outcomes. _Higher Education_, 1979, _8_(4),
381-394.

Dunn, R., Dunn, K., & Price, G. E. Diagnosing learning styles: A
prescription for avoiding malpractice suits. _Phi Delta Kappan_,
1977, January, 418-420.

Eanet, M. G. An investigation of the REAP reading/study procedure:
Its rationale. Annual Meeting of the National Reading Conference,
1977. (ERIC Document Reproduction Service No. ED 149 323)

Entwistle, N. & others Identifying distinctive approaches to
studying. _Higher Education_, 1979, _8_(4), 365-380. (a)

Entwistle, N. Motivation, styles of learning, and the academic
environment, 1979. (ERIC Document Reproduction Service No.
ED 190 636) (b)

Gibbs, G. & others Understanding why students don't learn. Open
University, England, Institute of Educational Technology, 1979.
(ERIC Document Reproduction Service No. ED 189 982)

Gregorc, A. F. Learning/teaching styles: Potent forces behind them.
Educational Leadership, 1979, January, 234-236. (a)

Gregorc, A. F. Learning/teaching styles: Their nature and effects.

In Student Learning Styles: Diagnosing and Prescribing Programs.

Reston; Virginia: National Association of Secondary School

Principals, 1979. (b)

Gregorc, A. F. & Ward, H. B. A new definition for individual.

NASSP Bulletin, 1977, February, 20-26.

Keefe, J. W. Learning style: An overview. In Student Learning

Styles: Diagnosing and Prescribing Programs. Reston, Virginia:

National Association of Secondary School Principals, 1979.

Kiernan, O. B. Forward. In Student Learning Styles: Diagnosing

and Prescribing Programs. Reston, Virginia: National Association

of Secondary School Principals, 1979.

Kolb, D. A., Rubin, I. M., & McIntyre, J. M. Organizational

Psychology: An Experiential Approach. Englewood Cliffs, New

Jersey: Prentice-Hall, Inc., 1971.

Marton, F. & Svensson, L. Study skills and learning. Educational

Development; Information on Research and Development in Post-

Secondary Education, 1976. (ERIC Document Reproduction Service

No. ED 127 319)

McKenney, J. L. & Keen, P. G. W. How manager's minds work. Harvard

Business Review, 1974, 52(3), 79-90.

Messick, S. & associates. Individuality in Learning. San Francisco:

Jossey-Bass, 1976.

Morgan, A. & others. The work of the study methods group, 1980.

(ERIC Document Reproduction Service No. ED 190 561)

Morgan, M. Self-derived objectives in private study. Journal of

Educational Research, 1981, 74(5), 327-332.

Smith, E. R. & Standel, T. C. Learning styles and study techniques.
Journal of Reading, 1981, April, 599-602.

Svensson, L. On qualitative differences in learning: III--Study
skill and learning. The British Journal of Educational Psychology,
1977, 47(3), 233-243.

Taylor, E. & others The value of the lecture: Looking from the
inside. Report No. 3, 1980. (ERIC Document Reproduction
Service No. ED 190 562)

STUDY SKILLS SURVEY

Dear Student:

Reflect about your study habits since being taught each of the following skills in L. Com. 10, and then check how often you have used each of the skills. How much have they become a part of your daily study habits? Please, BE HONEST—Do not sign your name.

	very little or never (0-25% of the time)	sometimes (25-75% of the time)	almost always (75-100% of the time)
Personal Schedule			
Cornell Note-Taking Technique			
Textbook Study System (SQ3R)			
Mapping			

LEARNING STYLE
INFORMATION ACQUISITION PREFERENCE INVENTORY

This Inventory is designed to assess your preferred means of gathering information from your environment. These preferences are determined by your ranking the words in the following sets. There are no right or wrong answers. Different words in the lists are equally good. The aim of this Inventory is to identify preference patterns, not evaluate them.

INSTRUCTIONS: There are ten sets of four words listed below. Rank order across each set of four words giving a 4 to the word which best describes you, a 3 to the word which is next most descriptive, and a 2 to the next most word, and a 1 to the word which is least like you. BE SURE TO ASSIGN A DIFFERENT RANK NUMBER TO EACH OF THE FOUR WORDS IN EACH SET. DO NOT MAKE TIES.

EXAMPLE: 0. _____ sun   _____ moon   _____ stars   _____ clouds

Now, please rank order each set of four words.

1. ____involved   ____tentative   ____discriminating   ____practical

2. ____receptive   ____impartial   ____analytical   ____relevant

3. ____feeling   ____watching   ____thinking   ____doing

4. ____accepting   ____aware   ____evaluative   ____risk-taker

5. ____intuitive   ____questioning   ____logical   ____productive

6. ____concrete   ____observing   ____abstract   ____active

7. ____present-   ____reflecting   ____future-   ____pragmatic
      oriented   oriented

8. ____open to new   ____perceptive   ____intelligent   ____competent
      experiences

9. ____experience   ____observation   ____conceptualization ____experimen-
                                                                          tation

10. ____intense   ____reserved   ____rational   ____responsible

FOR SCORING ONLY:

CS_____   AR_____   AS_____   CR_____

by Anthony Gregorc

(Adapted from Kolb, Irwin, and McIntyre, Organizational Psychology: an experimental approach, Prentice-Hall, Inc., 1971).