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Learning with Style and Skill:

A Description of a Self-Calculating, Computerized Learning Styles Profile  
and Study Skills Inventory and Its Use for Diagnosing and Prescribing Learning

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## Learning With Style and Skill

### *Introduction*

A Self-Calculating, Computerized Learning Styles Profile and Study Skills Inventory are described with applications for its use in diagnosing and prescribing learning according to the individual needs of the student. After completing thirty-nine items on “How I Learn and Remember Best”, six charts relating to modalities, interpersonal and leadership skills are then visible on the Learning Styles Profile (LSP). The forty-two item Study Skills Inventory (SSI) provides results on sixteen study skills. The combination of both programs provides teachers valuable information about themselves and their students for the development of effective instructional strategies and assessment techniques. Matching a student’s learning style to a variety of study methods enhances academic achievement.

## Learning with Style and Skill

### *Background*

In elementary, secondary and post secondary education there has been an emphasis on teachers providing study skills based upon an individual’s learning styles (Journal of Education for Business, v61 n7 p303-07 Apr 1986). To gain a better understanding as a teacher or learner, it helps to evaluate the way learning best takes place. To develop a method that enhances learning potential, both learning style inventories and study skill inventories have been developed by educators. The following are instruments commonly used in assessing learning style and study approaches:

- The **Myers-Briggs Type Indicator (MBTI)** gives insight into one's personality and how it affects interpersonal, organizational, and learning style preferences.
- The **Kolb Learning Style Inventory (LSI)** gives a picture of one's usual way of perceiving and processing information and shows how one can use his or her strengths and increase learning flexibility.
- The **Barsch Learning Style Inventory** evaluates visual, auditory, and kinesthetic approach to learning to better understand how to process information most effectively.
- The **Learning and Study Strategies Inventory (LASSI)** ask specific questions about current study strategies in order to highlight one's relative strengths and weaknesses as a student, thereby helping to focus on study skills that need improvement.

Although these are the more widely used inventories, they do not necessarily represent one's comprehensive learning style and directly relate the learning styles to the most appropriate study skills needed for the individual. As an example, the LASSI evaluates eight categories of study skill areas; whereas, the Parker's Study Skills Inventory (PSSI) was developed to be as inclusive as possible. The result was feedback to the individual in 16 areas and with a comparison to the individual's learning styles a prescription can be given to maximize the learning.

Over a decade ago, studies began to look at the effects learning styles had on learning as well as the relationship to various study skills. Carns and Carns (1991) developed a study skills approach to improve learning in students by making them more aware of metacognitive skills, learning strategies, and learning styles. Students in the study improved in all California Test of Basic Skills subtests greater than what would be expected from the elapsed time.

Smith and Smith (1989) developed a teacher's guide to provide a study skills program that evaluated the individual student learning styles of at-risk students who might possibly dropout in high school. The skills model was used for all grade levels as practical and easy to implement.

The skills model was sectioned, as follows:

1. An introduction, offers an overview of the project, and a description of learning styles, current programs, study skills, and development of the program.
2. "The Schoolwide Study Skills Model," lists the components to the model.
3. "Study Skills Teaching Methods," discusses each of the program teaching methods and provides some classroom examples in various content areas. The skills covered include the following: (1) organization/time management; (2) note-taking; (3) memory skills; (4) test-taking; (5) reading in content areas; (6) vocabulary development; (7) listening; and (8) achieving metacognition.
4. Describes implementing the school-wide program including setting the stage, training, and use of resources. A conclusion reviews the benefits of such a program. Included are eight figures, a glossary of 14 terms, 22 references, and a compliance statement.

This began a trend among some schools to accommodate the needs of students regarding identifying individual learning styles and developing an academic needs assessment around applicable and effective study skills. However, it has not been widely embraced as a common practice in many schools, as can be observed today.

Rowntree (1998) in his book, Learn How to Study, and Marshall and Rowland (1993) in their book, A Guide to Learning Independently, included most all important study techniques for organizing study time, writing essays, tackling textbooks, making notes, learning from seminars, and taking exams; but rather than taking the “old-fashioned” approach that everybody learns the same way, suggestions are given considering the learner’s individual needs.

In recognition of these changes, a new millennium has led education into an era of recognizing the individual’s way of learning and instructing to those needs effectively. In educational research, the term today that describes the action for which a teacher responds to a student’s learning style is *differentiated instruction/learning* (Guild and Garger, 1998). Tomlinson (1995, 2000) emphasizes the need for understanding the individual’s learning styles and habits for the best solutions to implementing differentiated instruction. In educational research leading into this millennium, the literature has become overwhelming regarding learning styles and differentiated instruction (learning). Now an effort must be sought to integrate a prescription for the individual student to maximize learning potential. As a result, the development of Parkers’ Learning Styles Profile (PLSP) and Parker’ Study Skills Inventory (PSSI) brings together a comprehensive approach to view an individual’s learning patterns (beyond just the usual auditory, kinesthetic and visual modalities) and study skills strengths and weaknesses. Once the student is diagnosed, a prescription is provided for academic success.

### *Integration of Learning Styles and Study Skills*

A synergy for maximum benefit in learning is a consideration of both learning styles and Study skills. Only until recently, research and state requirements have been demonstrating a relevance and relationship of considering an individuals study skills to his or her learning style. In 2001, a learning styles profile that was comprehensive in several areas including modalities, interpersonal relationships, and communication skills was developed. Shortly after that, a study skills inventory was also included. Currently they are used in conjunction to maximize the quality and quantity of learning.

### Program Descriptions

#### *Learning Styles Profile (LSP)*

The Learning Styles Profile (LSP) was developed using the Microsoft Excel Spreadsheet. Thirty-nine statements completing the sentence, “I learn and remember best by...”, are given value by the respondent based upon a Likert Scale from 5 (most preferred) to 1 (least preferred) with 3 being “not sure” (Figure 1). The response cells were programmed with that value applied to the characteristics of the categories of the following charts (Figures 2-7):

1. Interpersonal Communications Chart – People, Data, and Things
2. Field Dependent/Field Independent Chart
3. Modalities Chart – Kinesthetic, Auditory, and Visual
4. Action Model Chart
5. Student/Teacher Task Relationship Chart
6. Leadership/Management Characteristics Chart

The respondent chart in each case is a preference of some combination of the areas making up the chart. Again, the results do not represent actuality, but preference.

Consideration should also be given to a variation of percent of preference. The result of a

respondent could be very balanced in each area, which would include a balanced preference.

The Interpersonal Communications Chart (Figure 2) represents the three areas in which all individuals prefer to demonstrate competent behavior. In the interpersonal realm, competent behavior is not simply performing some intricate series of steps; but it has outcomes or consequences that make a difference with respect to some goal or problem. By adapting certain categories used in the U.S. Department of Labor's Dictionary of Occupational Titles to the broader purposes of education, this chart identifies three general categories of competencies. Two of them are exercised without any necessary interaction with people. There is competence in dealing with THINGS (psychomotor skills such as typing, writing, running, etc.). Secondly, there is competence in compiling and interpreting of DATA (manipulation of factual material). Finally, competence in dealing with PEOPLE is the desired interpersonal skill.

The Field Dependent/Field Independent Chart (Figure 3) includes the two areas that are in direct correlation to how our right side and left side of the brain processes information.

The Dependent Learner prefers:

1. Clear and precise learning instructions,
2. Objective-type assessment,
3. An instructor who controls the learning,
4. A socially-related learning atmosphere,
5. Organization in the learning process,
6. A well-defined job description.

The Independent Learner prefers:

1. Self-directed learning situations,
2. A choice of assessment methods,
3. The instructor as mentor or facilitator,
4. Work usually with little or no supervision,
5. Non-traditional learning settings.

The chart represents a combination of the two areas since we prefer to use both sides of our brain to some degree or the other.

The Modalities Chart (Figure 4) is the most common of terms used in learning: Auditory, Kinesthetic, and Visual. After the respondent completes this chart, the characteristics of each area are noted:

The Auditory Learner prefers...

1. Hearing instruction and enjoying discussion,
2. Remembering names rather than faces,
3. Remembering by speaking repetitiously,
4. Moving lips while reading silently,
5. Talking about situations and problems,
6. Having illustrations explained,
7. Expressing emotions,
8. Listening to music,
9. Sitting in the back of classroom.

The Visual Learner prefers...

1. Seeing (watching) demonstrations,
2. Learning situations rather than imaging words,
3. Writing down information to keep organized,
4. Sitting in the front of the class,
5. Learning to read by sighting words,
6. Remembering faces rather than names,
7. Studying without music or movement,
8. Written examination as assessment tool.

The Kinesthetic Learner prefers...

1. Remembering by doing and participating,
2. Moving (acting out) while memorizing,
3. Space,
4. Moving to music,
5. Non-verbal communication,
6. Physical activity when solving problems,
7. How-to-do books and videos,
8. Simulations, group activities, and projects as assessment.

The Action Model Chart (Figure 5) relates the respondent's social relationship preference to his or her own emphasis in the learning cycle. A simplistic cycle of

learning is used for this chart. The extremities of the axes include hear, see, think, and do in that order, with these four quadrants of characteristics:

1. Motivated Action Taker (do and hear)
2. Concerned Listener (hear and see)
3. Thoughtful Observer (see and think)
4. Active Processor (think and do)

The Teacher/Student Task Relationship Chart (Figure 6) is based upon preferred tendencies in an instructor and student interaction. Either the student will be “on task” or “off task” in the learning process. The desired reaction of the instructor is that he or she would manage the student’s learning in either case. However, tendencies are that the instructor could bring different roles into the learning process. These are defined as follows:

#### Teacher (Manager)/Student Task Relationships

1. An observant instructor would respond to a student doing their work by being an Exhorter.
2. An observant instructor would respond to a student not doing their work as a Restorer.
3. An indifferent instructor who would not respond to a student not doing their work is a Neglector.
4. An overzealous instructor who might prescribe inappropriate learning to a student doing their work would be an Offender.

Although a couple of these identifiers leave a negative connotation, it does make one aware of possible tendencies. It should be emphasized that in each graph these areas are preferences and may not represent the actual attitudes that may suppress the initial preference.

The Leadership/Management Characteristics Chart (Figure 7) also give the instructor defined areas of organization. Knowing one’s strengths and weaknesses in

these areas will aid in the planning and overseeing of learning. Eleven areas were selected and they include:

1. Supervising,
2. Instructing,
3. Consulting,
4. Entertaining,
5. Persuading,
6. Mentoring,
7. Managing,
8. Leading,
9. Negotiating.

#### Definition of Leadership/Management Skill Areas

A person who **mentors...**

works with individuals having problems affecting their life adjustment in order to advise, counsel, and/or guide them according to legal, scientific, clinical, spiritual, and/or other professional principles and advises clients on implications of analyses or diagnoses made of problems, courses of action open to deal with them, and merits of one strategy over another.

A person who **manages...**

Controls, directs, and coordinates the relationships of individuals and groups under supervision; works with individuals answering questions, airing concerns and offering helpful information on how to improve behavioral problems affecting effective group functioning; maintains flow of communication without interrupting unnecessarily; respects other views and maintains rapport by not offending others sensibilities; keeps conversation on track and brings it to conclusion; and, takes responsibility for sufficient interaction of individuals and groups of individuals in order to achieve the stated objectives.

A person who **leads...**

works with groups of individuals establishing policies that will directly affect their behavior in a significant manner; employs persuasion techniques to influence and motivate groups of individuals to trust in his/her judgment about the priorities and direction the group should take; uses symbols familiar to the group to promote adherence to his/her policies and controls any serious resistance with firm sanctions acknowledged by the group to be lawful extensions of leader's authority; and maintains group solidarity while accomplishing objectives with group cooperation.

A person who **negotiates...**

bargains and discusses on a formal basis as a representative of one side of a transaction for advantages in resources, rights, privileges, and/or contractual obligations, "giving and taking" within the limits provided by authority or within the framework or the perceived requirements and integrity of a program.

A person who **instructs...**

Teaches subject matter to others or trains others through explanation, demonstration, and testing.

A person who **supervises...**

determines and/or interprets work procedures for a group of workers; assigns specific duties to them (delineating prescribed and discretionary content); maintains harmonious relations among them: evaluates performance (both prescribed and discretionary); a promotes efficiency and other organizational values; and, makes decisions on procedural and technical levels.

A person who **consults...**

serves as a source of technical information and gives such information or provides ideas to define, clarify, enlarge upon, or sharpen procedures, capabilities, or product specifications.

A person who **entertains...**

amuses or diverts or distracts individuals and/or audiences or lightens a situation.

A person who **persuades...**

influences others in favor of a product, service, or point of view by talks or demonstrations.

A person who **communicates...**

sends or transmits verbal or nonverbal signals, which if received by the intended party are decoded and translated into general or specific messages that serve as sources of information about the sender. The recipient of the message can respond to the original stimulus immediately, or not at all, or at some point in the future depending upon the meaning which he or she attaches to the content of the message. The forms of communication are verbal or nonverbal. The two forms of verbal communication are spoken and written. The communication process is dependent upon another person being capable of seeing, hearing, touching, and comprehending the nature of the symbols employed to transmit the message.

A person who **serves...**

Attends to the needs or requests of people or to the expressed or implicit wishes of people and immediate response is involved.

A person who **helps...**

attends to the work assignment, instructions, or orders of supervisor and immediate response or verbal exchange is required unless clarification of instruction is needed.

These six charts in the Learning Styles Profile give comprehensive perspective to the instructor as well as the student in the self-actualization process, which is paramount in the learning process. An understanding of different learning styles and management of learning bring cohesiveness in the development of meaningful learning experiences.

### *The Study Skills Inventory (SSI)*

The Study Skills Inventory (SSI) was developed in a similar manner as the LSP except the outcome included results in the following sixteen study skills (Figure 8):

1. Time-Management
2. Note-taking
3. Reading
4. Listening
5. Test-taking
6. Written Communications
7. Stress
8. Career-Oriented
9. Memory
10. Learning Behavior
11. Critical Thinking
12. Research
13. Technology
14. Decision Making
15. Life Skills
16. Health

The SSI was designed to be used twice; that is, before (Figure 9) and at the conclusion of a course program that included the training in study skills (Figure 10). The respondent is asked after the first time to complete a “Personal Reaction” to the results in each area by answering basic questions, as follows:

1. Did the score reflect a strength or weakness?
2. What actions would be necessary for you to take in order for you to improve even more in the category?

Then at the end of the course, the respondent completes the same inventory and completes a “Personal Reflection” of each study skill by answering the following questions:

1. Was there a significant change in the scores?
2. Did you show an improvement in the category?
3. How are you going to improve and develop lifelong learning habits in the category?

When the LSP and SSI have been completed and evaluated, then, it is at this time that the diagnosis and prescription for learning for the respondent can begin.

### *Integration of Programs*

Once a learning segment has been established, the study skill that would best accommodate the learning can be determined. Next, consider how well the respondent is prepared for that study skill. In addition, determine if the study skill could be altered considering the respondents learning styles. This approach maximizes both the amount of time it takes to learn and the amount of material that is to be learned, satisfying the need for quality and quantity of learning.

### *Diagnosis and Prescription for Success*

It has often been said, “Nothing succeeds like success”. Much like the medical doctor diagnoses our ailments and prescribes the appropriate medications; teachers too look to answers for learning problems and must diagnose learning problems and prescribe the best solutions for the students’ needs. So, it should always be asked... What teaching

methods are best for which learning style? What are the study skills that need to be reinforced? How would the combination of learning with style and skill result so that, the quality and quantity of learning is maximized?

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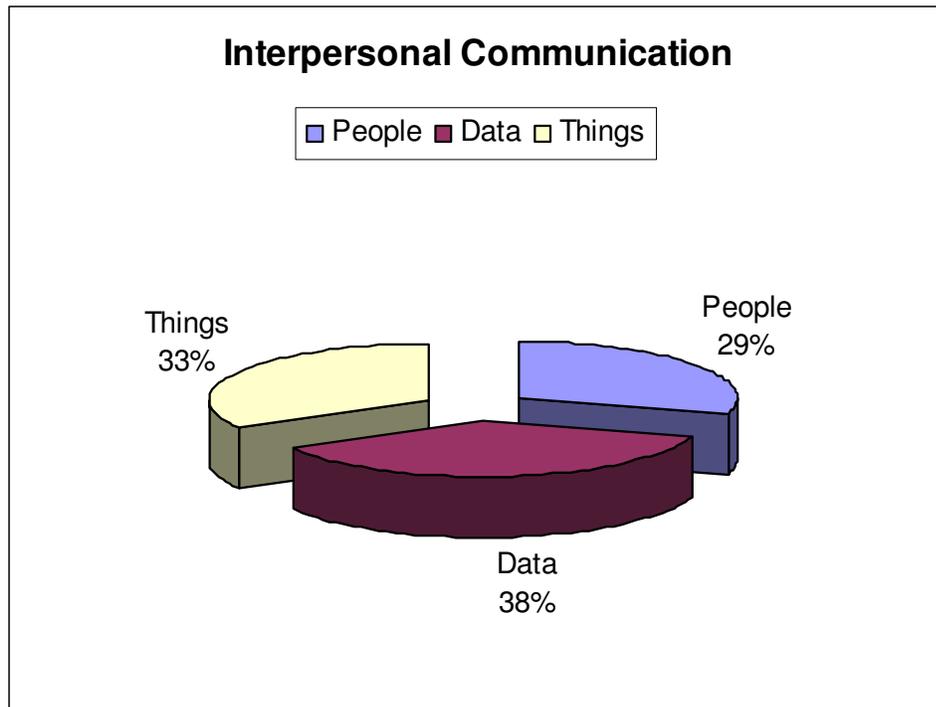
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*Figure 1.* A sample of The Learning Styles Profile statements.

Answer with numbers 5 (most preferred) to 1 (least preferred); 3 being not sure. <b>I learn and remember best by...</b>		answer here
1. reading.	1	4
2. taking notes.	2	3
3. listening to lectures.	3	4
4. watching visual aids.	4	3
5. observing demonstrations.	5	4
6. participating in an activity.	6	3
7. performing the task.	7	2
8. writing a paper on the subject.	8	3
9. applying the concepts to life's situations.	9	2

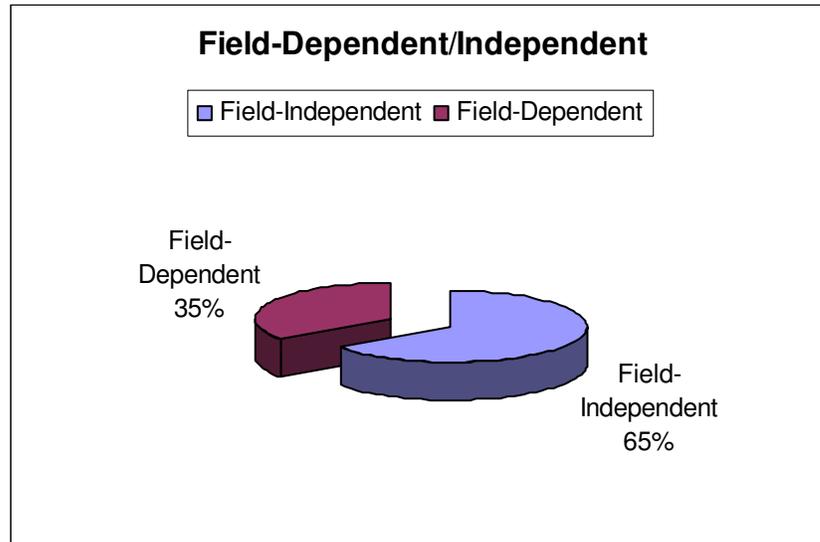
The Interpersonal Communications Chart

Figure 2. A sampling of a respondent's results of People, Data, and Things.



### The Field Dependent/Field Independent Chart

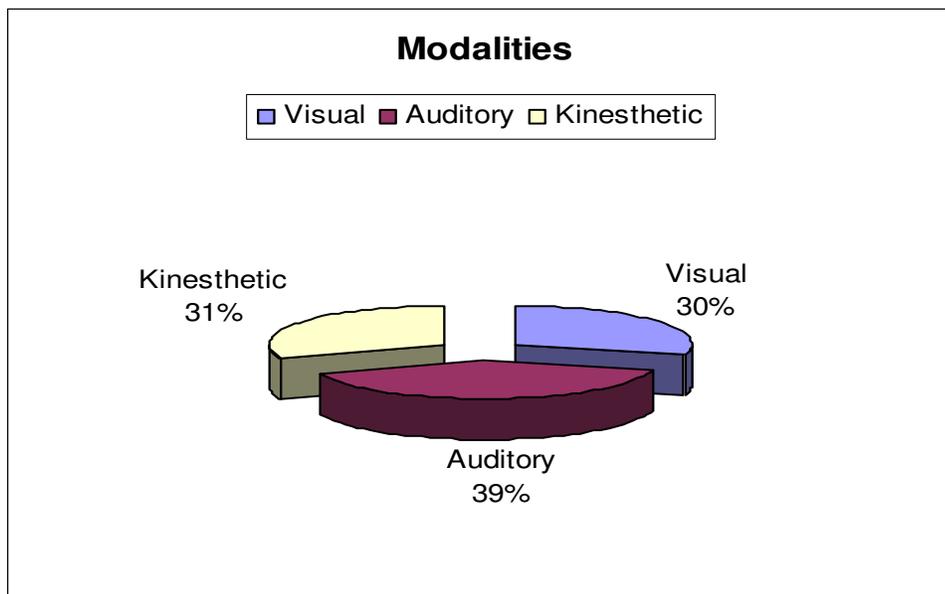
Figure 3. A sampling of a respondent's result for Field Dependent/Field Independent.



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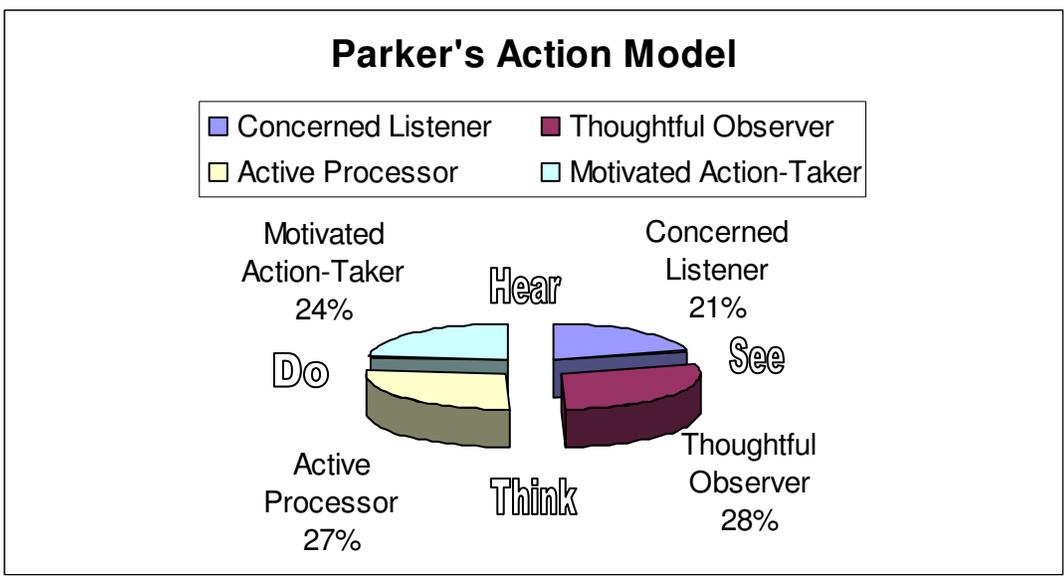
## The Modalities Chart

Figure 4. A sampling of a respondent's results for Auditory, Kinesthetic, and Visual.



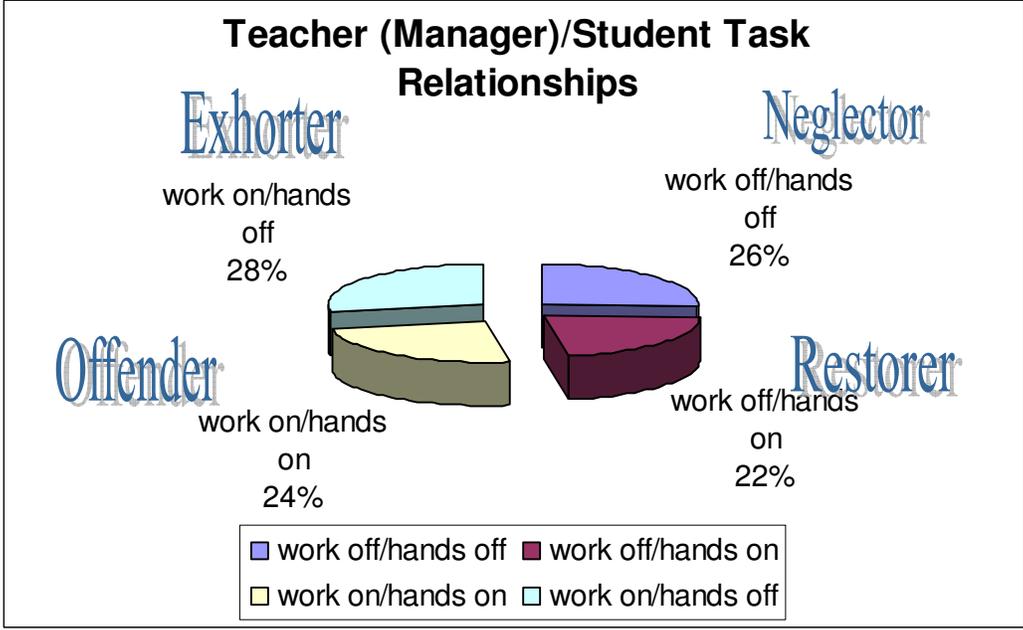
### The Action Model Chart

Figure 5. A sampling of a respondent's results for the Action Model.



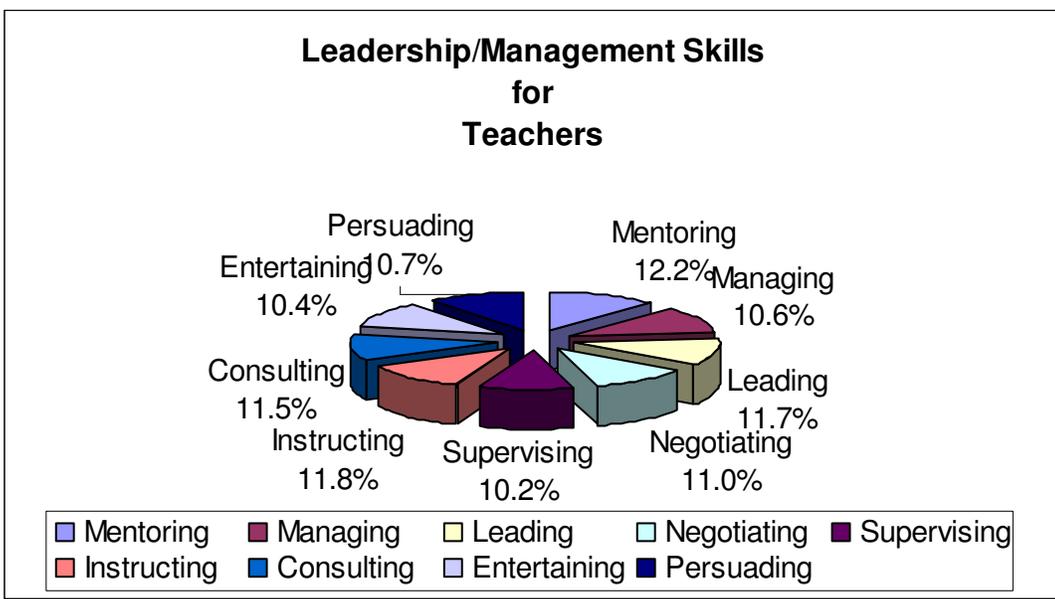
The Teacher/Student Task Relationships Chart

Figure 6. A sampling of a respondent's results for Teacher/Student relationships.



The Leadership/Management Skills for Teachers Chart

Figure 7. A sampling of a respondent's results for the nine Leadership/Management characteristics.



## The Study Skills Inventory

*Figure 8.* A sampling of statements for the Study Skills Inventory

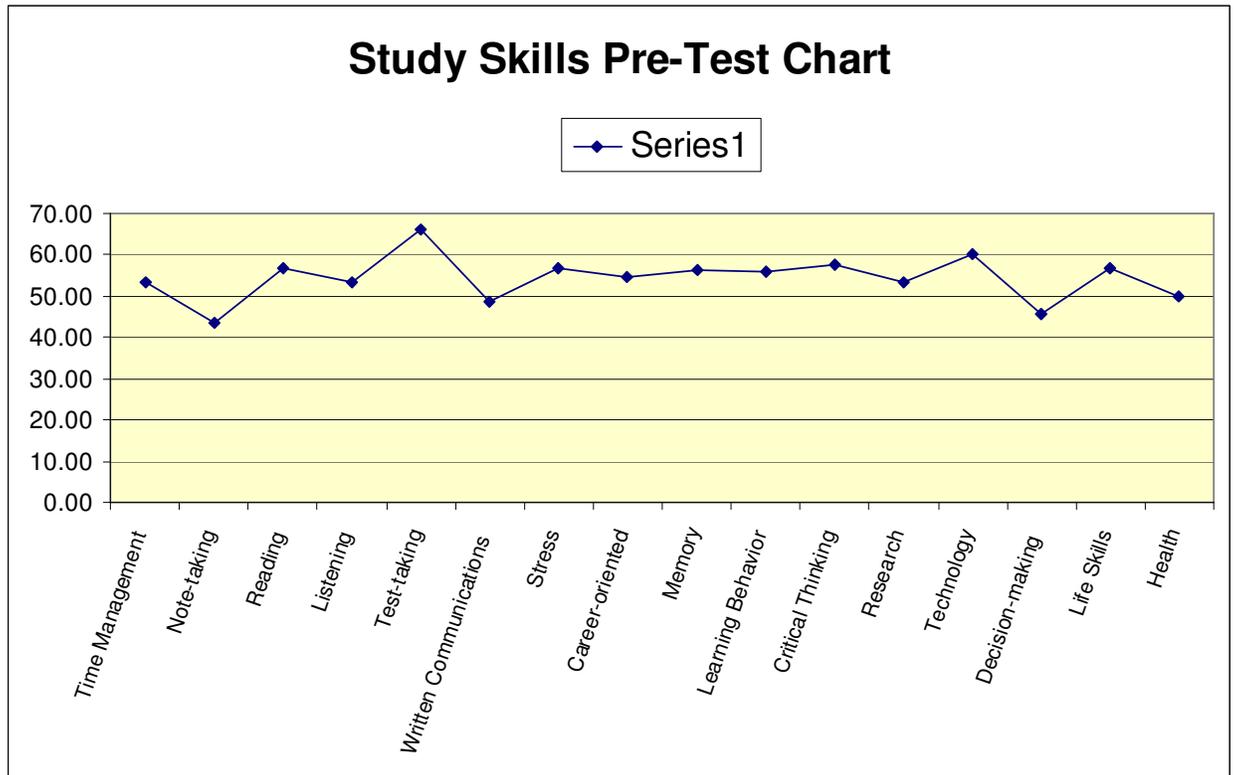
**Answer with numbers 5 (most like me) to 1 (least like me); 3 not being sure**

1. I schedule my appointments, etc. in a journal-type notebook
2. At meetings I'm prepared to take notes to more readily remember things.
3. Whenever I undertake a task, I have the confidence I need to complete it.
4. I do NOT get frustrated easily when answering essay questions on a test.
5. It is NOT difficult for me to keep up with my daily course assignments.
6. I comprehend well when I read a textbook.
7. I do NOT like to be interrupted when I try to focus on a difficult task.

answer  
here

3
2
3
4
3
4
3

## The Study Skills Inventory (SSI) Pre-Test Results

*Figure 9.* A sampling of a respondent's results for the SSI Pre-Test.

The Study Skills Inventory (SSI) Pre-Test and Post-Test Comparison Chart

Figure 10. A sampling of a respondent's results for the comparison of the Pre-Test (before the study skills training) and Post-Test (at the end of a study skills training session).

