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# Learning Styles: An Assessment — An Application

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"As teachers, we invest a great deal of time thinking about and preparing for *what* we should teach. Likewise, we should spend an equal amount of time thinking about and preparing for *how* we should teach" wrote Cox and Zamudio in 1993. As we plan *how* to teach, one variable which deserves attention is the learning style of students in our classrooms.

Learning styles is not a new concept. However, because educational practitioners discovered learning style technology at about the time most psychologists were losing interest, progress in the area has been slow (Keefe and Monk, 1986). So what are learning styles?

## Defining Learning Styles

Learning styles are stable characteristics of students and are expressed through the interaction of behaviors and personality as one approaches a learning task (Garger & Garger, 1984). Learning style refers to the predominant and preferred manner in which individuals take-in, retain, process and recall information (Whittington and Raven, 1995). Keefe and Monk (1986) suggested that learning styles represent both inherited and environmental influences. As such, the following assumptions can be made regarding learning styles:

Learning styles emerge from natural predisposition.

Learning styles need to be recognized, brought out, encouraged, unfolded, developed, and disciplined.

Individuals can learn certain stylistic behaviors and add them to their repertoire.

Individuals learn other styles only in terms of a limited capacity and willingness to work at practicing a behavior.

These learned styles are not as natural.

The late Herman A. Witkin, a pioneer in learning styles, defined learning style in process terms. Witkin argued that learning styles are concerned with the form rather than the content of the learning activity. Learning styles refer to individual differences in how we perceive, think, solve problems,

learn, and relate to others (Witkin, Moore, Goodenough, & Cox, 1977).

Witkin spent much of his academic career developing measures of learning style. His work concentrated on determining the extent to which a person's perception of an item was influenced by its surrounding field. Witkin wanted to determine if some people saw the tree, while others saw the forest.

## Measuring Learning Styles

Witkin's research showed there were differences in perception of discrete items within a surrounding field. Witkin et al. (1977) described the extremes of these differences as a continuum between "field-dependence" and "field-independence". He advocated that when perception was strongly dominated by the prevailing field (a region, space or sphere where mental or physical activity exists), the mode of perception was designated as "field-dependent". The field-dependent learners saw the forest. However, when the person experienced items as more or less separate from the surrounding field, the perception was designated as "field-independent". Whereas field-dependent people saw the forest, field-independent learners saw the tree within the forest.

## The Workshop

The purpose of this workshop was to achieve the following objectives:

1. Define learning style and assess one's own preferred way of learning.
2. Identify the learning characteristics of different learning styles.
3. Analyze how an individual's learning style influences his/her learning and teaching.
4. Identify teaching strategies which will bring about more effective teaching and learning.

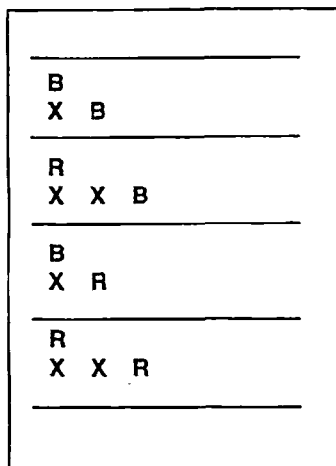
Participants began by engaging in a learning styles activity whereby they were asked to solve the following problem:

*You are given four black cards and four red cards from an ordinary deck. You have to arrange them in a stack, face down, so that you can deal them out (until no cards remain) as follows:*

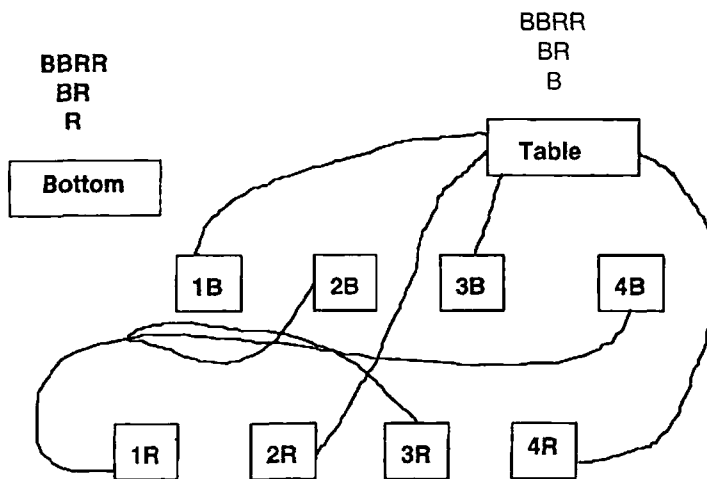
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**Figure 1. One Possible Solution**



**Figure 2. Another Solution**



**The Right Answer : BBRBRRRR**

1. You place the top card on the table face up. It is black.
2. You place the next card (now on top of the deck) on the bottom of the deck.
3. You place the next card on the table, face up. It is red.
4. You place the next card on the bottom of the deck.

*Continue the pattern until no cards remain in the deck.*

Several participants shared graphic representations of their solutions with the assembly (see Figures 1 and 2). The discussion following the exercise allowed participants to see the thought processes utilized by others, encouraged comparisons of various thought processes, and opened avenues of thought regarding the various learning styles used by students in classrooms.

Witkin was convinced, based on over two decades of research, that whether one is field-dependent or field-independent influences a person's learning and resultantly has wide

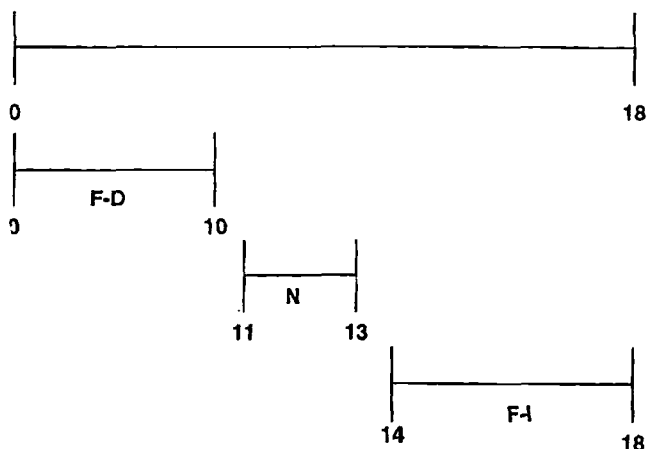
application to teaching and learning theory. Not only does a person's learning style influence the way the person learns, but learning style also has implications on how they teach others.

Consequently, teachers that are aware of their learning style, as well as the styles of their students, are better able to make sure that any differences between their learning styles will not impede learning (Raven, 1992). The key to teaching students with different learning styles is the identification of our own learning style as well as our students' styles.

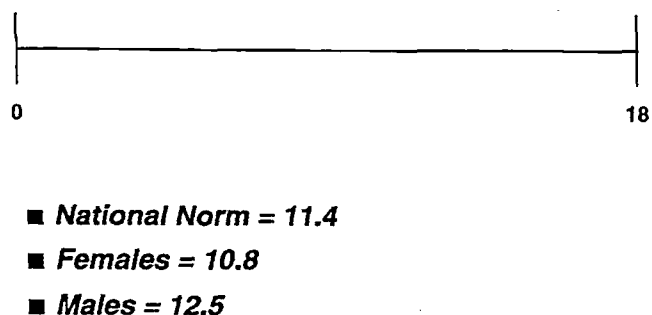
### An Assessment

A number of instruments have been developed to measure a person's learning style. One of the easiest to administer and interpret, especially in group situations, is the Group Embedded Figures Test (GEFT) (Witkin, Oltman, Raskin, & Karp,

**Figure 3. Interpreting GEFT Scores**



**Figure 4. Interpreting GEFT Scores**



1971). The GEFT is a perceptual test which requires the subject to locate a previously seen figure within a larger complex figure. The GEFT, which is comprised of 18 complex figures, can be administered in 20 minutes and can be quickly scored.

Subjects' scores on the GEFT range from 0 to 18 with the number correct being the score. The national norm on the GEFT is 11.4 correct (see Figure 3). The higher the score above the group mean the more the person is considered to be field-independent (see Figure 4). Conversely, the lower the score below the group mean the more the person is field-dependent. Raven advocates a third zone, the neutral or ambidextrous zone, which exists in the middle range on the continuum. Common traits of field-dependent and field-independent learners and teachers can be found in Table 1.

It must be stressed that learning styles are independent of intelligence. Remember, field-dependence/field-independence is more related to the PROCESS of learning, not the APTITUDE for learning. Both field-dependent and field-independent people make equally good students as well as teachers.

### **An Application: Dealing with Differing Learning Styles**

Just as students have a preferred learning style, so do teachers, and that learning style influences the effectiveness of the teacher. According to Rollins and Yoder

(1993). "Research has demonstrated that learning style preferences and the consideration educators give to learning styles are closely related to learning achievement..." (p. 19).

Is it possible that students who perform better in a given class just happen to match the learning style of the instructor? One would expect field-dependent learners to have difficulty grasping a subject if their instructor exclusively used a field-independent teaching style or vice versa. If a field-independent teacher was trying to motivate students by giving students freedom to design their own learning structure, a field-dependent learner would be frustrated instead of motivated (Raven, 1992). Consequently, teachers need to be sure that their instructional methods meet the learning styles of both field-dependent and field-independent students. Additionally, a teacher must be flexible in their motivational techniques.

An all-out effort must be made to ensure that a wide variety of approaches are used that will motivate both field-de-

**Table 1. Field-Dependent and Field Independent Characteristics.**  
(Source: Garger & Guild, 1984).

Field-Dependent	Field-Independent
<b>Learning Styles</b>	
<ul style="list-style-type: none"> <li>• perceives globally</li> <li>• experiences in a global fashion, adheres to structures as given</li> <li>• makes broad general distinctions among concepts, sees relationships</li> <li>• social orientation</li> <li>• learns material with social content best</li> <li>• attends best to material relevant to own experience</li> <li>• requires externally defined goals and reinforcements</li> <li>• needs organization provided</li> <li>• more affected by criticism</li> <li>• Uses spectator approach for concept</li> </ul>	<ul style="list-style-type: none"> <li>• perceives analytically</li> <li>• experiences in an articulated fashion, imposes structure or restrictions</li> <li>• makes specific concept distinctions, little overlap</li> <li>• impersonal orientation</li> <li>• learns social material as an intentional task</li> <li>• interested in new concepts for their own sake</li> <li>• has self-defined goals and reinforcements</li> <li>• can self-structure situations</li> <li>• less affected by criticism</li> <li>• uses hypothesis-testing approach to attain concepts</li> </ul>
<b>Teaching Styles</b>	
<ul style="list-style-type: none"> <li>• prefers teaching situations that allow interaction and discussion with students</li> <li>• uses questions to introduce topics and probe student answers</li> <li>• uses student-centered activities</li> <li>• viewed by students as teaching facts</li> <li>• provides less feedback, avoids negative evaluation</li> <li>• strong in establishing a warm and personal learning environment</li> </ul>	<ul style="list-style-type: none"> <li>• prefers impersonal teaching situations such as lectures, emphasizes cognitive aspects of instruction</li> <li>• uses questions to check on student learning following instruction</li> <li>• uses teacher-organized learning situation</li> <li>• viewed by students as encouraging to apply principles</li> <li>• gives corrective feedback, uses negative evaluation</li> <li>• strong in organizing and guiding student learning</li> </ul>

pendent and field-independent learners. For example, a teacher could let students choose to either work in a group or by themselves on an assignment. The best strategy would provide an opportunity for field-dependent and field-independent students to select the method of studying that best meets their learning style.

### **A Final Charge**

As educators we know that the students seated in our classrooms at the beginning of a new term are all different from each other and different from us. It is wrong for us to ignore these differences.

There exists a need for professors to explore the learning styles of students in our classes and, accordingly, design lessons that capture the educational uniqueness inherent in these individuals. Adding variability to our methods and ap-

proaches will result in improved instruction and, thus, enhanced learning.

### Summary

The time we spend thinking about *how* we will teach must include some thoughts about the learning styles of our students — the processes they are using to take-in, retain, process, and recall information. Students are unique. However, teachers have the responsibility to reach all students, no matter what the students' learning style. Instructors may use informal observations or standardized instruments, such as the GEFT, to identify learning styles. Then teachers must use a variety of instructional and motivational strategies that take into account the learning styles of both field-dependent and field-independent students.

Knowing that learning styles are a natural predisposition, yet can be learned, assists educators in realizing that time spent planning and utilizing techniques designed to reach various learning styles, will pay dividends in long-term benefits to our students. By improving the match between the learning style of the student and the techniques utilized by the instructor, there should be an increase in the achievement level of students and thus a renewed satisfaction in teaching for the professor.

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