Learning styles and culture

A practical application

by Pam Gentry

Originally published as:

Gentry, Pam. 1990. "Learning styles and culture: A practical application." *Notes on Literacy* 62:1–14. See also: Gentry 1990 (in *Bibliography (Literacy)*)

[Topics: culture, learning styles]

1. Introduction

With development of psychology as a field of study in the twentieth century, attention has been focused on thinking and learning. Research has attempted to discover universal and individual factors which affect how people process information and solve problems.

Studies of non-Western cultures give some insight into these areas. Such studies are based on one of two assumptions: that intelligence is based on a measurable innate ability or that intelligence is a culturally based phenomena. Those who promote intelligence as ability based, state that some groups of people develop more generalized intellectual abilities than others. The advocates of this position, define cognition by specified tasks which they assume will be performed the same regardless of who performs the task. Those who promote intelligence and learning as a culturally-based phenomena note how specific skills are transferred within a society.

It is evident that “primitive” cultures make different sorts of intellectual demands than do “technologically advanced” societies. For example, the Kpelle people of Northern Liberia are exceptionally good at estimating the volume of rice in a container. This task would be very difficult for most Americans. However, the Kpelle people are rice farmers who deal with these measurements on an almost daily basis. Their experience gives them aptitude. Researchers who contend that intelligence is

culturally based conclude that as cultural conditions change, the skills that people learn change as well. This view is well supported by the universal finding that children in third world countries who attend Western-style schools show a marked increase in the development of problem-solving skills (Cole 1971).

Given that the ability to learn is generally the same for all people, irrespective of geography or culture, what factors affect the learning process? How can we account for the differences in ability to perform specific cognitive tasks found from culture to culture? This is the question that researchers in the field of learning styles attempt to answer.

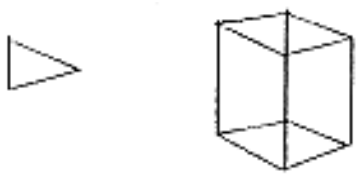
2. Definition of learning style

Learning style refers to "the characteristic way in which a student uses information" (Sodeman 1987:1). Extensive research by Witkin and others has shown that people tend to be consistent in the way they approach problem-solving tasks and in the attitudes and emotions they bring to a situation (Cole and Scribner 1974:82). Terms variously used in the literature on this subject are: cognitive styles (Witkin 1967:110), temperament styles in learning patterns (Golay 1982:5), learning strategies (Stringer 1984:6), cultural learning style (Bulmer 1983:22), cognitive learning style (Cohen 1969:828), conceptual style (Lingenfelter and Gray 1981:15), learning style, modality, and perceptual strength (Carbo 1986 3, 13, 91), and cultural values (Mayers 1979:5). The term(s) used by each author reflect(s) the focus of his/her research and its application. These foci can be grouped into three main categories as cognitive, perceptual, and cultural aspects of the learning process.

2.1. Cognitive learning style

[Topics: cognitive learning styles]

Authors who describe cognitive aspects of the learning process concentrate on the degree of field independence an individual demonstrates. Field independence refers to the ability to see a complex figure as an integral collection of smaller parts. The field independent person is skilled in recognizing detail and organizing features of his environment. Embedded figures are often used to measure one's degree of field independence. For example, in Figures 1a and 1b, the individual is told to examine the two figures. He must quickly and accurately identify the triangle as part of the more complex figure on the right (Cole and Scribner 1974:82). Quick and accurate performance indicates field independence.



1a. 1b.

Authors who concentrate on this cognitive aspect of learning preferences vary in their use of terms. They also differ in terms of the weight that the cognitive aspects of thinking carry in their model of learning style. In the following chart, I have collected the terms used by various authors. Like terms are listed together and identified according to the principal writer who uses that set of terms.

Dawson and Berry (as cited by Cole 1974)	field dependent	field independent
Witkin (1967) (as cited by Cole)	global	articulated
Cohen (1969)	relational	analytical
Carbo and others (1986)	global	analytical
Mayers (1979)	holistic	dichotomizing
Entwistle (1981)	holist	serialist
	right brain	left brain

Terms for cognitive learning styles

2.2. Perceptual learning style

[Topics: learning styles]

Authors who concentrate on the types of physical stimuli the learner uses most productively describe perceptual aspects of the learning process. Literature emphasizing these aspects variously refers to modalities, perceptual strengths, and the visual, auditory, tactile, or kinesthetic learner. Though their terms differ, authors writing on this subject all describe a dependency on, or preferred use of, specific sensory information in the environment. The following descriptions of visual, auditory, tactile, and kinesthetic learners are condensed from Carbo, Dunn, and Dunn (1986:13–15).

Perceptual strength	Characteristics
Visual learner	• Remember what they see • Concentrate on recalling "mental pictures" • Learn best by viewing, watching, and observing
Auditory learner	• Remember 75 percent of what they hear • Store spoken words in their brain like a recorder • Learn best by listening to others
Tactile learner	• Use fingers and hands while concentrating • Remember best when they write, doodle, draw, or "fiddle" • Learn best by touching, manipulating, and handling
Kinesthetic learner	• Poor recall of what they have been told or

have seen

- Learn best through experiencing, doing, and involvement
- Reinforcement through tactile sense

I would like to note at this point that use of the cover term, *perceptual strength,* is significant. My experience as a teacher has shown me that very few learners are totally dominated by a particular modality. Most students can use other forms of stimuli in addition to that which they process most easily. The latter are strengths and preferences, not absolute categories. As Marie Carbo points out in *Teaching students to read through their individual learning styles,* learning is enhanced when new material is introduced through a student's preferred learning style and is effectively reinforced through secondary modalities (Carbo 1986).

2.3. Cultural learning style

[Topics: cultural learning styles]

All cultures educate their members and the form of that education differs from culture to culture. For example, in traditional Bushman society there is little explicit teaching. The majority of learning takes place through observation and imitation in the context of daily life (Stringer 1984). In contrast, American society is becoming increasingly specialized so that "real learning" is confined to the classroom. Americans attend cooking classes, driving classes, photography, and needlework classes. There are even classes for young children to learn how to play together.

According to Spindler

> Culture is idealized in the educative process and every teacher defends the cultural drama …; world view is encapsulated within each gesture, admonition, indoctrination or explanation (Spindler 1963:69).

Each culture has a set of values which is reinforced through its unique education process. As this occurs there are two outcomes. First, the members of the society learn how to function within that culture. Second, a preferred learning style is reinforced.

2.3.A. Basic values model

[Topics: values]

Marvin Mayers has identified six pairs of basic values which affect "different decision-making processes and different learning styles" (Bulmer 1983:24). The following values and their descriptions were taken from *The basic values: A model of cognitive styles for analyzing human behavior* by Marvin K. Mayers (1979:6).

The basic values

The categories of thought utilized in the basic values model include the following patterns of behavior:

Note: A pattern of behavior is observed, **then** named.

Time orientation is concerned with seconds, minutes, and hours; when something begins and when it ends; how frequently something is done in a time period; and how orderly it is done, that is, in relation to schedule and range of punctuality.

Event orientation is concerned with who's there, what's going on, and how the event can be embellished—with light, sound, touch, body movement, and so forth.

Dichotomism orientation sets up distinction, divisions, and categories; concern is with the here or there, right or wrong, this or that; the part is more important than the whole; one starts with the part—not the whole.

Holism orientation is concerned with the whole and the parts as wholes in relation to the whole; patterns and configurations are important.

Crisis orientation focuses on one alternative, that alternative being the only correct alternative and a sharply defined authority system to maintain that alternative, and closure on that alternative.

Noncrisis orientation considers many alternatives, any of them valid and worthy of selection now or later. Therefore, authority is in keeping with alternative; closure is delayed and less intense.

Vulnerability as strength orientation permits admission of error, assumes no loss of respect when there is evidence of weakness, error, or the like.

Vulnerability as weakness orientation covers any error or weakness so that it is not perceived in any way as weakness.

Thing or object as goal causes one to set up timed goals to achieve some object.

Person as goal causes one to concern himself more with person than the accomplishment of some object. Time schedules may be ignored; programs will be measured more in terms of what happens to the people involved.

Prestige as achieved orientation causes one to work to gain one's respect. Prestige is assigned only to the role.

> Prestige as ascribed orientation develops criteria for ascription of respect and prestige, the machinery for receiving this and living up to the expectations of one's ascribed status, and the motivation to live up to that status. Prestige is assigned to both the person and the role that one fills in society.

2.3.B. Educational model

Dunn and Dunn identify 21 elements that affect learning style (Carbo 1986). Though the Dunns do not specifically relate their model to the cross-cultural context, I find a lot of similarity to Mayers' model of basic values. In the following discussion, I will relate Mayers' model of basic cultural values to the Dunns' educational model of learning styles. In addition, I will relate other elements of the Dunn model to the cross-cultural context based on my own understanding of culture as gleaned from others with more experience than my own.

The following descriptions of each element of learning style are based on those given in *Teaching students to read through their individual learning styles* by Marie Carbo, Rita Dunn, and Kenneth Dunn (1986:2–20). The authors identify five major categories of elements that affect learning style: environmental, emotional, sociological, physical, and psychological stimuli.

2.3.B.1. Environmental stimuli

Environmental stimuli which affect learning style include the elements of sound, light, temperature, and design. The intensity, quality, and presence of ambient noise within the learning environment affect people in different ways. Some people are aided by the presence of noise while others perceive this as distracting. The intensity of light is also an important aspect for some. Mayers identifies these two elements as part of event orientation in his model. Temperature can also play a role in a person's ability to learn. Though this may be a purely physical preference, it certainly becomes significant in countries that experience extreme temperatures. Cultures which thrive in a hot climate often regulate their activities to coincide with the cool of the day. A wise program planner will pay attention to the effects of temperature on people's work habits. Formal versus informal classroom design is another environmental element identified by Dunn and Dunn. This refers to a preference for working at a desk versus sprawling on the floor or moving about the room. In a non-Western context, sensitivity to this element may mean having a great deal of flexibility concerning where class is held. It may be preferable to sit under a tree outside rather than within the confines of four walls. The cross-cultural teacher should also be flexible about furniture. The people may prefer sitting on the ground with slates on their laps rather than sitting on chairs at desks.

2.3.B.2. Emotional stimuli

The Dunns identify four elements that are categorized as *emotional* stimuli. First, they cite motivation. This refers to an individual's interest in learning. The cross-cultural worker needs to search for intrinsic motivators within the culture. Often prestige is a good motivator, hence, Marvin Mayers' model overlaps in this area as well. Persistence is affected by motivation; it is also affected by the provision of successful

learning. The third emotional element is responsibility. Carbo, Dunn, and Dunn identify this as the ability to "follow through on assignments, complete them to the best of their ability, and … do so without continuing supervision" (1986:8). I would say that this is a culturally specific definition of responsibility. A culture's time-event orientation, crisis-orientation, and goal determination would affect this element. The fourth emotional element relates to the need for structure. "Some people like to know **exactly** what is expected of them before they begin a project or assignment …" (1986:11, author's emphasis). This describes a dichotomized orientation which is concerned with right and wrong in each situation.

2.3.B.3. Sociological elements

Sociological elements of learning style clearly fall under the category of culturally influenced factors. In many cultures, the group takes precedence over the individual. For example, according to Tom Headland, the Agta people of the Philippines are very group oriented. When he taught them to play croquet, the people did not consider the game completed until all the players had been helped to complete the course. When this was accomplished, they reveled in their success as a team. According to Mayers' model, these people are people oriented rather that goal oriented; they value relationships over task completion. In addition to the kinds of working relationships encouraged within a culture, the cross-cultural worker should be sensitive to the recognized and accepted authority structure. This is another area in which a Western goal-oriented person might conflict with a people-oriented culture. In many societies, preservation of status roles and privileges takes precedence over "the most efficient way to get the job done."

2.3.B.4. Physical stimulus

Physical stimulus elements of learning style include perceptual strengths, food intake, time of day or night energy levels, and mobility. Perceptual strengths were described in an earlier section of this paper. However, I would like to briefly discuss the effects of culture on perception. Researchers have identified differences in the way people of different cultures respond to stimuli, but they have been unsuccessful in identifying differences in interpretation (Cole and Scribner 1974). It seems that the working principle is this: people are good at doing things that are important to them and they use the environmental information that is relevant to daily living. Carbo and the Dunns note that many learners relate to the need for food intake when concentrating or studying and that most learners have an optimum time of day for processing new information. The cross-cultural worker should note how people prefer to use their day. When do the people work, when do they socialize, and when do they spend concentrated thinking time? The amount of mobility preferred by the learner was discussed in conjunction with the environmental element of structure.

2.3.B.5. Psychological elements

I find the greatest overlap between Dunn and Dunn's model of learning styles and Mayers' model of basic cultural values in the area of *psychological* elements that affect learning style. The global versus analytic dichotomy closely follows Mayers' holistic versus dichotomized dichotomy. The global person is identified as one who sees the "whole picture"; like the holistic individual, he is concerned with overall

patterns and sees parts in relation to the whole. The analytic person tends to focus on small parts and details. Similarly, the dichotomized individual sets up distinctions and categories based on parts. He always looks at the smaller elements first. Hemisphere dominance is another psychological element that affects learning style. This is a broad category only briefly commented on by Carbo, Dunn, and Dunn. In reference to literacy they cite Levy who says,

> … the child with a biased arousal of the left hemisphere may gain reading skills more easily through a phonetic, analytic method, while the child with a biased arousal of the right hemisphere may learn to read better by the sight method … the gateway into whole-brain learning may differ for different children … (Carbo, Dunn, and Dunn 1986:19).

It is possible that some cultures may tend toward left- or right-brain dominance since these preferences are closely, but not wholly, related to cognitive learning style. However, I have not found any specific literature on this subject.

The final pair of psychological elements are impulsivity and reflectivity. These refer to the immediacy with which an individual responds to stimuli as well as his willingness to take risks and be flexible. Mayers' crisis-oriented person who shows little flexibility and reacts conservatively to threatening situations correlates with the Dunns' reflective individual. The less analytic, risk-taking, impulsive person relates to Mayers' noncrisis oriented person who is less intense and can delay closure.

The following chart displays the stimuli and elements that affect learning style. I have color-coded the boxes to indicate the areas that overlap with Mayers' model of basic cultural values and those which are generally affected by culture. I have not shaded areas where I have some question concerning the exact relationship to culture.

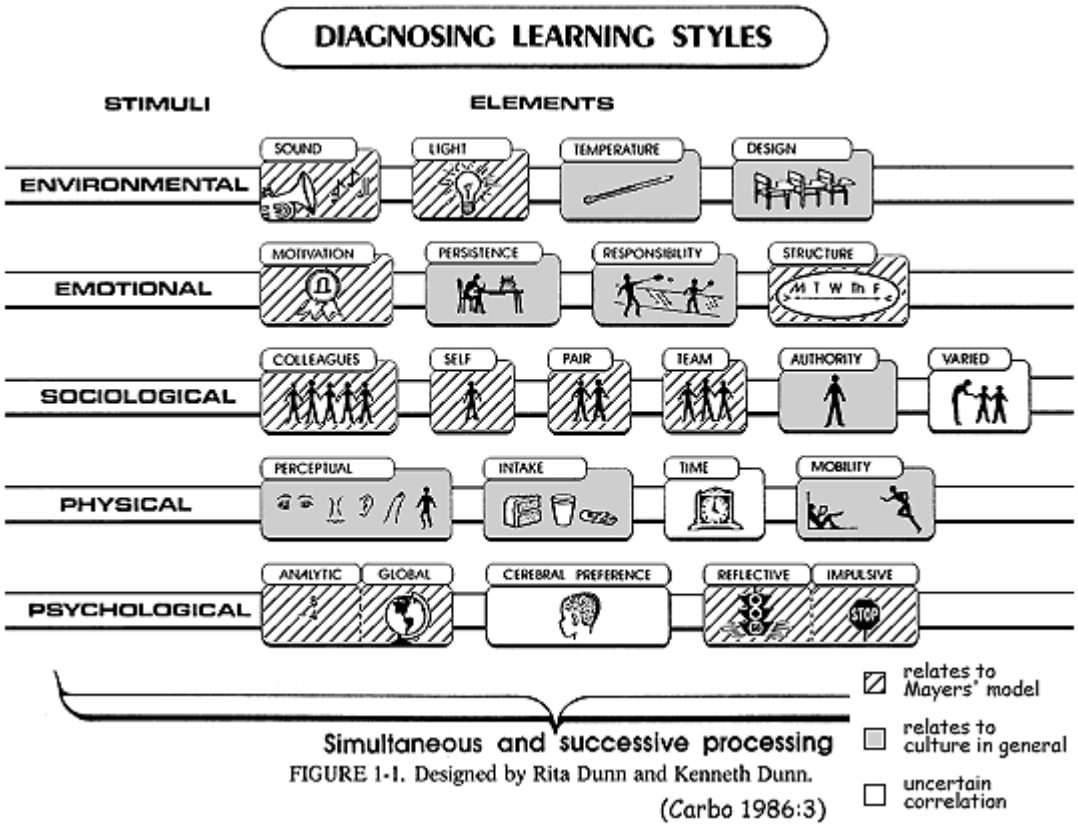


FIGURE 1-1. Designed by Rita Dunn and Kenneth Dunn.
(Carbo 1986:3)

3. Significance of learning style

Thus far, I have defined learning style and discussed the various premises on which the identification of learning styles are based. Now, I will discuss the significance of learning styles in the classroom.

3.1. Elements of a learning situation

In any learning situation, whether formal or informal, there are at least four factors which interact with one another to affect the acquisition of learning. These four factors are the learner, the institution, the teacher, and the method of pedagogy. We have discussed various aspects of the learner's inherent learning style. The teacher also has an inherent learning style which affects his or her teaching style (Entwistle 1981). Teachers tend to teach in a way that complements their own predisposition (Carbo 1986). In addition, the institutional context within which learning takes place has an inherent teaching style, whether it be a mission or government school, a family, and so forth (Spindler 1963). Finally, each method of teaching and its accompanied curriculum is bent toward a particular learning style (Carbo 1986). The teaching styles of the institution, the teacher, and the pedagogical method must correlate with the style of the learner for optimum ease of learning and long-term retention (Sodeman 1987; Cohen 1969).

3.2. Mismatching across cultures

In a cross-cultural context, the potential for mismatch is even greater because of the disparity in cultural values. For example, Black and Mexican American children tend to be more field dependent, and they learn global aspects of a lesson more readily, especially when they are made personally relevant. In addition, such persons tend to be socially tied into the group, prefer to work cooperatively, and have a close relationship with their teacher. These values are not generally helpful for success in the average American classroom where independence, formality, and abstract reasoning are fostered (Sodeman 1987).

There are also examples of mismatch within the SIL context. Don Davis, a translator in the South Pacific, noted that nationals did not respond to his initial efforts at conducting translation workshops. Upon reflection, he recognized that his teaching method was very analytical and abstract in contrast to the men's preference to learn the concrete, practical "how-tos." When he changed his methods, the response of nationals and their ability to learn the skill of Bible translation also changed (Davis 1985).

Having related learning styles to the general educational environment, I will now consider their significance in relation to world literacy. Lingenfelter and Gray note that "people who respond slowly as a whole to reading may be dealing with a cultural barrier" and they conclude that planning for a language program should include "an evaluation of the type of thinking rewarded by the culture" (Lingenfelter and Gray 1981:11).

4. Evaluating learning styles across cultures

So then, given that the learning style of the student needs to be matched with the teaching style of the teacher, institution, and teaching method, how can this match be achieved when designing a literacy program? Obviously, an evaluative instrument must be devised. However, I have not found a comprehensive or widely-applicable instrument. To fill this gap, I propose a broad application of Dunn and Dunn's 21 elements of learning style in order to subjectively evaluate the learner, teacher, teaching environment (this includes the institution), and the method of teaching reading.

Following is a proposed evaluation procedure:

Step 1. Evaluate yourself.

a. Apply each of the Dunns' 21 elements of learning style to yourself as a learner to determine your own learning style. Ask: Do I prefer quiet or noise, bright light or dim? How does temperature affect my ability and desire to concentrate? Am I more comfortable in a relaxed, or formal, learning environment? How am I motivated? How persistent am I? Do I follow through on difficult tasks and am I reliable in getting the job done? How important are these factors to me on a scale of one to ten?

b. Administer Mayers' test for identifying cultural values as they pertain to you.

c. Combine all these factors into a single column list.

Step 2. Evaluate your students.

a. Watch people in the community to determine generalizations you can make about them and their culture. Ask the same questions about these people that you asked about yourself. Pay special

attention to situations where transfer of skills or information is taking place. These are culturally-appropriate learning situations.

b. Try to identify which of Mayers' basic values best describe this culture.

c. Combine all these factors into a single column list on a separate piece of paper from the list that describes you. List the factors that describe the people and their culture in the same order that you listed the factors that describe you.

d. Place the two lists side by side so that you can compare them line by line. Note where there are similarities between yourself and the people. Enjoy the similarities; they will make teaching easier. Note where there are contrasts; this is where you need to be sensitive to the students' preferred learning style. You will probably need to make some changes in these areas or at least develop flexibility.

Step 3. Evaluate the learning environment.

a. If there is an existing institution within which you need to work, evaluate it according to the elements that apply. Leave spaces for the items that do not apply, so that this list can be compared with the previous two lists.

b. Make note of elements that cannot be changed due to matters outside of your control. These are factors that you and the students will have to accommodate to. Also, make note of elements that are not consistent with the student's learning style but can possibly be changed.

Step 4. Evaluate the reading method.

a. Use the following chart to note the primary perceptual and psychological avenues used by each reading method widely used in non-Western societies. Find the reading method that makes the best match with the people's preferred perceptual and psychological orientation.

Learning Style Element†	Laubach	Gudschinsky	Multistrat.	Freire	LEA††
Perceptual Strength:					
auditory	X	?	X	X	
visual	X	X	X	X	X
tactile		X	?		
kinesthetic			X	X	
Cognitive Strength:					
analytical	X	X	X		
global		?	X	X	X

† For analysis of the reading methods on the basis of learning style, I used the following resources: Carbo 1986; Gudschinsky 1973; Laubach 1957; Mayers 1979; Peet 1980; Stringer and Faraclas 1987. †† In this chart, LEA is an acronym for Language Experience Approach.

5. Unanswered questions

As I stated at the beginning of this paper, there is a lot of literature that relates to learning and culture. The scope of this paper has been limited to integrating the different perspectives of learning styles. Several areas have remained untouched. For example, I am curious to know how the concept of brain-hemisphere dominance fits into this scheme. Carbo, Dunn, and Dunn report research that indicates that a high percentage of poor readers are right-hemisphere preferenced (1986:20). In addition, I would like to try out my evaluation procedures to test their reliability and to improve on the methodology.

6. Conclusion

This paper has outlined a global view of the field of cultural learning styles. The search for a universal definition of intellectual ability (intelligence) leads in two unsatisfying directions. It seems that a culturally unbiased definition of intelligence defies universal application. However, researchers have identified many elements that affect how a person learns. These elements can be grouped on the basis of their relation to cognition, perception, and culture. The study of learning style has application in any environment where teaching or learning takes place, but it is especially helpful to those training across cultures. By considering the inherent learning style of his students, himself, the teaching environment, and the teaching method, the teacher can be more effective.

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