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### Chapter 3

# Understanding and supporting the culturally diverse distance learner

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This chapter focuses on culturally diverse distance learners and examines ways in which the needs of these learners can be taken into consideration in the design of distance instruction and learner support. We begin with a discussion of changing demographics in the United States and the educational needs of adults from different cultures, analyses of the literature on individual differences and learning styles, and the influence of culture on learning. A learning style profile of Hispanic adult learners will be discussed as a case example showing how the understanding of the Hispanic learner as described in the profile can be applied to the design of distance instruction and learner support systems.

## The Growing Cultural Diversity of Learners

The United States has been home to many people with diverse cultural and ethnic backgrounds for centuries; however, there is little doubt that the face of America is changing. Recent articles in popular magazines such as *Time* and *Newsweek* have chronicled the change in America's population or what they call the "Browning of America," and the increase in numbers of ethnic minority populations in many parts of the country. Rodriguez (1988) has noted that by the year 2000, the "current minority will have become the majority" in the 53 most-populated cities in the country. The increase in ethnic minority populations is having an impact in two major American institutions, namely the work force and the educational system.

One of the major work force-related trends that is often cited is the magnitude of cultural diversity that will characterize the work forces of organizations beginning in the 1990s (Cox, 1993). Gardenswartz and Rowe (1993) cite five changes in demographics that will impact the work force. The changes are fundamental and far-reaching. How American organizations deal with the dilemmas presented by these trends will affect not only their success but also their approach to promoting learning in the organization. The education and training of the work force of the future is also affected. These changes are:

- *Increase in the number of women in the work force.* By the year 2000, women will make up almost half (47%) of the labor force and 60% of new job entrants into the work force (Hudson Institute, 1988).
- *Increase in the number of minorities in the workforce.* The Hudson Institute Report predicts that as early as the year 2000, minorities will make up 29% of the work force. This increase is particularly true for Hispanics, whose population has increased by 30% since 1980 and is increasing at a rate five

times greater than other groups, making them the fastest growing group in the U.S. The Census Bureau estimates that their population will reach 29 million by the year 2000 and that, by the year 2050, Hispanics will constitute 30% of the population and may become the largest minority group in the country (Valdivieso and Davis, 1988).

- *Increase in number of immigrants.* Today's newcomers are not primarily European, as they were in the early 1900s; most are coming from Latin America, Asia, and the Middle East. These new immigrants are not as willing to assimilate and give up their unique cultures (Hodgkinson, 1985).
- *The aging of the workforce.* The demographic bulge created by the baby boom as it passes into maturity moves a large proportion of the work force into middle age. While the majority of workers in the next decade will still be in their most productive years (30-54), the labor force is slowly getting older.
- *Rise in education and skill requirement for employment.* Jobs in the 21st century will require a more highly skilled work force in a society where education and skill levels are declining. Work force 2000 predicts that the majority of jobs from now on will require education beyond high school, signaling the need for bold new methods of training employees in both basic and job-related skills.

These demographic changes will impact workplace training and require a response that includes increased need and opportunities for distance education.

The increase in both ethnic minority populations and cultural diversity will also impact the educational arena. By the year 2010, minority populations will be the majority populations in certain segments of the country (Hodgkinson, 1985). Ross-Gordon (1991) points out that in 25 of the largest school districts in the country, the student population is composed of a "minority" majority and that 26% of all students in the country come from a minority group. Sanders and Wassermann (1990) point out that classroom demography is becoming increasingly multicultural, thereby creating a critical need to pay attention to the diverse learning styles associated with various ethnic groups.

Distance learners in many education and training programs now and in the future will be composed of different cultural groups. But there will be other related differences that emerge across diverse groups of learners that need to be carefully considered as educators design and deliver distance education.

## **Individual Differences and Learning Styles**

During the past twenty years, there has been increasing interest in educational research focusing on individual differences. One of those individual differences has been learning styles, defined as "people's characteristic way of information processing, feeling and behaving in and toward learning situations" (Smith, 1986, p. 24).

The assessment of learning styles and the impact of matching learning style and teaching style has been the focus of many studies. Dun et. al. (1981) report that the learning styles research in the past decade has "yielded useful findings about the effects of environmental sociological and cognitive preferences on the achievement of students." (p. 50) "Further, many researchers have specifically analyzed how culturally different students begin to concentrate, process and retain new and different academic information" (Dunn, 1983, p. 25). Reviewing the results of these studies, Dunn continues noting that in all groups of learners - gifted, average or high achievers - there were statistically significant differences among and

between groups of culturally different students. Although each ethnic and racial group may exhibit statistically significant differences with clusters of specific learning style variables, each group also contained individuals with widely diverse learning styles.

The history of learning styles research can be summarized as a result of work conducted by a group of psychologists in America, namely the Fells Institute Group (Kagan and colleagues), the Minnesinger Foundation group (Klein, Gardner, Schesinger, and Holzman), the Brooklyn group (Witkin and colleagues), and a group from Europe and Australia: Marton, Pask, Saljo, and Entwistle (Bonham, 1988). Curry (1987) describes the chief difference in their work as the fact that North American research was based upon cognitive psychology and included "psychometric considerations" as an integral part of the research and classified learning behaviors as strategies that were subject to change, whereas the European /Australian group focused upon detailed learning behaviors based on small numbers of learners and focused more on deeper "style" concepts.

Out of this research, numerous theories of cognitive processing and controls were developed. The most notable include theories of cognitive control, cognitive flexibility, and cognitive strategies employed by learners in the learning process. The following description presents the key focus and theorist of the major theories:

### Cognitive Control Theories

*Field-dependence vs. Field-independence:* Witkin (1977) and his colleagues studied how individuals orient themselves in space and analyzed the relationship between an individual's visual and kinesthetic cues and the degree of emphasis an individual places on internal (self) or external (field) referents. He designated the tendency to rely primarily on "internal referents" as being field-independent and the tendency to systematically rely upon "external referents" as being field-dependent. He posited that the internal frames of reference available to field-independent people allowed them to structure situations on their own and therefore, as learners, they are internally motivated, prefer to learn on their own, arrive at their own learning strategies, and prefer intrinsic rewards. Field-dependents, on the other hand, are holistic, global learners who prefer instructor guidance and involvement, are externally motivated, and prefer group work and extrinsic rewards.

*Global vs. Analytical:* The two researchers primarily identified with this theory are Kirby (1988) and Schmeck (1988). The characteristics assigned to global learners include being field-dependent, formulation of global impressions rather than precisely articulated codes, random and numerous associations, intuitive thinkers, consider feelings in making decisions, less emphasis on control, impulsive, holistic, and gifted at seeing similarities in situations. Analytical learners are described as being field-independent, having focused attention, focus on and remember details, interested in how things operate, emphasis on the proper way of doing things, prefer step-by-step, sequential, organized schemes, exhibit controlled thinking divorced from feelings, gifted at logical thinking, can see differences rather than similarities, and prefer sequential, serial learning activities.

### Cognitive Flexibility Theories

*Constricted vs. Flexible Control:* This theory developed by Menninger Foundation group (Gardner, Holzman, Klein, Linton, and Spence, 1959) analyzes the ability to focus on relevant stimuli by ignoring distractions, and the ability to inhibit incorrect verbal response (Jonassen and Grabowski, 1993). It is also a measure of an individual's flexibility or readiness to change his or her judgment of a proposed solution to a problem. The flexible individual is not as easily distracted by conflicting cues as a constricted processor and therefore is better able to restrict irrelevant responses.

*Impulsivity vs. Reflectivity:* Kagan (1966) and his colleagues proposed this bipolar construct, which is sometimes known as cognitive tempo. It measures the individual's ability to reflect on the accuracy of an answer and to inhibit responding impulsively. Individuals at the reflective end have longer response times and commit fewer errors than impulsive individuals, who answer quickly and with greater frequency of error leading to the belief that reflectives think before they act. Kagan (1966) proposed that cognitive tempo is developmental in nature and that individuals become more reflective as they age.

*Focal Attention/ Scanning vs. Focusing:* This theory (Santostefano, 1964) describes the differences in the processing of stimulus fields and measures the individual's ability to scan a field and cognitively record and compare visual and verbal properties from available information. It measures the intensity (active or passive) and extensiveness (narrow or broad) of scanning.

### Cognitive Strategies

*Holist vs. Serialist:* Pask (1988) describes holist learners as paying attention to global aspects of the learning situation and serialist as paying attention to detailed, sequential analysis of the learning elements. His learners closely parallel the concept of global and analytical learners.

*Right-Brained vs. Left-Brained:* Torrence and Rockenstein's (1988) theory is associated with creativity or problem-solving strategies used in learning situations. They describe left-brained thinkers as conforming individuals who prefer structure and verbal material in order to look for specific facts to sequence into ideas and draw conclusions to solve problems logically to improve things. Right-brained thinkers are non-Conforming persons who prefer open-ended assignments, exploration, and imagery and who look for main ideas to show relationships in order to produce new ideas or invent something new.

*Visual vs. Haptic:* Associated with the work of Lownefield (1946), Kagan (1965), and Galbraith and James (1985), this theory describes an individual's preference for processing information with visual or haptic orientations. According to Jonassen and Grabowski (1993), visually oriented individuals use spatial relations, visual discrimination, figure-ground discrimination, and object recognition to gather information, whereas the haptic individuals prefer to extract information using tactile and kinesthetic manipulation of objects.

*Visual vs. Verbalizer:* This cognitive style describes the individual's preference for attending to and processing verbal or visual information. It is associated with the work of Paivio (1971), Richardson (1977), and Swassing and Barbe (1979), who describe verbalizers as preferring to process information from words, spoken or written, and visualizers as preferring pictures, charts, and imagery to obtain information.

*Leveling vs. Sharpening:* This cognitive style measures how individuals perceive and memorize images. Levelers tend to condense story elements, simplify stories, frequently miss changes or inconsistencies, merge new impressions and experience with older ones, and integrate information more readily into memory. Sharpeners, on the other hand, are able to clearly differentiate between discrete images and identify the small differences between them, recall structure, and remember details, and they rely more on rote memory than levelers.

Knowing these theories and understanding the impact of individual differences is important to the distance educator in designing instruction as well as recognizing that differences exist not only between cultural groups but also within these groups.

## Influences of Culture on Learning

Guild (1994) reminds educators of the connection between culture and learning style and that effective educational practices stem from an understanding of the way that individuals learn, including knowing the students' culture and its effect upon learning. As Anderson (1988) notes,

All components of a culture are built upon some basic conceptual system or philosophical world view, and the various cultural systems tend to include the same general themes (life, death, birth, mortality, human nature, religion, etc.). Even though these beliefs appear across cultures, they can be viewed differently within each culture. (p. 3)

Anderson (1988, p. 6) suggests that those in the dominant Western world view include Euro-Americans (primarily males) and minorities with a high degree of acculturation. Many Euro-American females and the vast majority of other cultural groups in the U.S. would be categorized as sharing a Non-Western world view. The fundamental dimensions of Non-Western and Western world views and those who share aspects of that world view are seen in Table 1.

Based on an extensive review of the literature, Anderson further posits cognitive style and cultural groupings comparisons as seen in Table 2 (Anderson, 1988, p. 6). While reminding the reader that no one style is better than any other, he does note that Euro-American style, characterized by field-independence and analytic thinking with limited affective thinking, is often most valued in our higher education settings.

Anderson (1988, p. 8) concludes that these differences must be accounted for in the educational setting and states that "a, different set of understandings about the way diverse populations communicate, behave, and think needs to be developed by educators. Until this occurs, education will continue to stagnate in the dark ages and educators will provide lip service rather than action to the egalitarian values associated with pluralism and multiculturalism... . As professional educators we must settle for nothing less."

<b>Non-Western</b>	<b>Western</b>
Emphasize group cooperation	Emphasize individual competition
Achievement as it reflects group	Achievement for the individual
Value harmony with nature	Must master and control nature
Time is relative	Adhere to rigid time schedule
Accept affective expression	Limit affective expression
Extended family	Nuclear family
Holistic thinking	Dualistic thinking
Religion permeates culture	Religion is distinct from other parts of culture
Accept world views of other cultures	Feel their world view is superior
Socially oriented	Task-oriented

**Table 1: Some Fundamental Dimensions of Non-Western vs. Western World View**

Dunn and Griggs (1995) note that each cultural group also tends to have some learning style elements that distinguish it from other cultural groups. However, they point out that a consistent finding in research is that each individual within a family, classroom, or culture has unique learning style preferences that differ from those of their siblings, parents, peers, and cultural group. They state that instructors need to be aware of three critical factors:

- Universal principles of learning do exist.
- Culture influences both the learning process and its outcomes.
- Each individual has unique learning style preferences that affect his or her potential for achievement.

Dunn and Griggs (1995) observe that cultural values influence the socialization practices of all ethnic groups, which in turn affect how individuals prefer to learn. However, focusing on their specific research, which studied learning styles of Native American adolescents, they note that the learning differences within the Native American population are greater than the mean differences between Native Americans and other ethnic groups, echoing Dunn's 1983 caution. Thus, when teaching Native American adolescents, it is important to understand the group cultural heritage and values. However, it is also important to keep in mind that, within groups, individuals differ significantly from each other, and therefore, it is equally important to identify and respond to the individual's learning style preferences.

Field- Dependent  
Relational/ Holistic  
Affective

**Characteristics**

1. Perceive elements as apart of a total picture.
2. Do the best on verbal tasks.
3. Learn material which has a human social content and which is characterized by fantasy and humor.
4. Performance influenced by authorizing figure's expression of confidence or doubt.
5. Style conflicts with traditional school environment.

Field-Independent  
Analytic  
Non-Affective

**Characteristics**

1. Perceive elements as discrete from their background.
2. Do best on analytic task.
3. Learn material that is inanimate and impersonal more easily.
4. Performance not greatly affected by the opinions of others.
5. Style matches up with most school environments.

**Table 2: Cognitive Style Comparison**

## **A Case Study –Hispanic Adult Learners**

In order to understand how culture affects learning, Sanchez (1996) studied the learning style preferences of one group of Hispanic adult learners. The study looked at the learning preferences of 240 adult learners, utilizing Curry's (1991) Theoretical Model of Learning Style Components and Effects, and analyzes three essential elements which, combines together, define a learning style:

1. **Motivational maintenance level**, which measures the learner's preference for specific elements in the learning environment and the specific skills of attention, motivation, persistence, and need that the learner brings to the learning situation.
2. **Task engagement level**, which is the interaction between the motivational condition of the learner and the active processing work required by the new learning task and includes such elements as attention, enthusiasm, degree of participation, and concentration exhibited by the learner in the new learning situation.
3. **Cognitive processing level**, which involves the "cognitive information processing habits or controls system" that the learner brings to the learning situation.

The model utilizes three instruments to assess each level. Level One (Motivation Maintenance) is measured by the Friedman and Stritter (1976) *Instructional Preference Questionnaire*, the Grasha and Reichman (1975) *Students Learning Styles Scale*, and the Rezler and Rezmovic (1981) *Learning Preference Inventory*. Level Two (Task Engagement) is assessed using the Kagan (1964) *Matching Familiar Figures Test*, the Schmeck, Ribich, and Ramanaiah (1977) *Inventory of Learning Processes*, and the Weinstein, Palmer, and Schulte (1987) *Learning and Studies Strategies Inventory*. The Third Level (Cognitive Control Functions) measured using the Kolb (1977) *Learning Styles Inventory*, the Myers-Briggs Type Indicator (1962), and the Witkin (1971) *Group Embedded Figures Test*.

The 240 subjects completed the nine instruments using a Greco-Latin Square design to control for "test fatigue." Subjects completed the two timed tests (*Matching Familiar Figures Test* and *Group Embedded Figures Test*) in one session and then were given the seven other instruments to complete on their own. Data was analyzed using measures of central tendency, t-tests, chi-square, and factor analysis. The results of the data were utilized in developing a profile of learning preferences for each of the scales measured by the nine instruments. Demographic factors such as gender, degree of bilingualism, educational level, and age were examined to assess their impact upon the scales. A sub-sample of subjects (n=24) were interviewed to assess whether they felt their individual learning styles profile accurately reflected or matched their conceptions of how they learn and to further validate the acceptability of the nine instruments for use with Hispanic adult learners.

## **Learning Styles Preferences for Hispanic Adult Learners**

The following profile of learning style preferences for the study population emerged. This profile describes learning preferences for Hispanic adult learners for the various scales of the instruments and the three levels of Curry's (1991) model. The list of preferences that follow were significant. These scales (variables) received the highest scores and can be interpreted as strong preferences for the variable or as a strong propensity to utilize the component represented by the scale as a learning strategy.

Motivation maintenance findings show the study group displayed a high preference for:

- Feedback - degree to which students find evaluative mechanisms such as tests helpful in learning
- Participation over avoidance - desire to participate rather than not to participate in classroom activities

- Collaborative over competitive - preference to share ideas and work in groups over a desire to perform better than others in class and to compete with other students for teachers' attention and grades
- Concrete over abstract - preference for tangible, specific, practical tasks over theories, hypotheses, general principles, and concepts

On the task engagement level, learners exhibited, the following strong preferences or propensities:

- Fact retention - memory capacity which influences learning
- Elaborative processing - the lengths to which students will go in order to encode new information, such as interrelating new and old information, using visual imagery, rephrasing in one's own words, and thinking of practical applications
- Attitude - attitude and interest in learning in an academic environment
- Motivation - the students' diligence, self-discipline, and willingness to work hard
- Concentration - the students' ability to pay close attention to academic tasks
- Information processing - the use of imagery, verbal elaboration, comprehension-monitoring, and reasoning
- Selecting main idea - the students' ability to pick out important information
- Test strategies - the students' approach to preparing for and taking examinations
- Reflectivity-the measure of cognitive tempo or ability to reflect on the accuracy of the available hypotheses

In terms of the cognitive controls level, the Hispanic learners in this study preferred:

- Active experimentation - an action-based, active approach to learning
- Judgment over perception - the preference for using a judgment process (thinking or feeling) rather than a perceptive process (sensing or intuitive) for dealing with the outer world

Being aware of these preferences may be useful in designing instructional programs for this group or a similar group of Hispanics. It is also important to keep in mind that these components were affected by the demographic variables of gender, educational level, degree of bilingualism, and age; therefore, these elements must also be taken into account when designing instruction for this group.

It is imperative to remember that these results cannot be generalized to all Hispanics. As Guild (1994) points out, "Generalizations about a *group* of people often lead to naive inference about *individual* members of that group" (p. 20). Further, Cox, and Rameriz (1981) caution that misusing information about the learning preferences of a group can lead to stereotyping and labeling rather than the identification of educationally meaningful differences among individuals.

If a distance education course were designed that would support culturally diverse learners who displayed these characteristics, the following ideas might be taken into consideration.



## **Implications for Designing Distance Instruction and Learner Support**

Based on the learning style profile for Hispanic learners described in the Sanchez (1996) study, it is possible to provide guidelines for designing distance instruction and support for these learners. In general, it can be stated that distance instructors must employ a variety of teaching strategies to accommodate a variety of learning style preferences. While it is possible to use a variety of teaching strategies - group work, lecture, discussion, role play - through a single medium, such as audio teleconferencing, it is also important to consider employing a variety of media, capitalizing on the unique strengths of each medium. In general, when trying to accommodate a variety of learning styles in the instructional design, it is always best to design alternative activities to reach the same objective and give the students the option of selecting from these alternative activities those which best meet their preferred learning style.

Reflecting on the maintenance of motivation, the Hispanic learning style profile shows a strong preference for feedback. Faculty teaching at a distance need to be mindful of providing frequent and adequate feedback to support these learners. This can be done through comments on assignments, individual letters, fax, or e-mail. These learners also show a preference for collaborative over competitive activities and like to participate in class activities. Having the opportunity to work in groups on projects that are planned, carried out, and evaluated by the group would accommodate these preferences. An excellent medium for doing this is computer conferencing that supports extended group dialogue. Group activities - such as a discussion on a topic, problem-solving, or role playing - can be planned so that learners can moderate these activities and evaluate themselves. These learners also showed a preference for reflectivity in task engagement and the medium of computer conferencing accommodates reflective learners better than the face-to-face classroom. Where computer conferencing is not available, it is possible to provide for group activities and assignments at remote sites using other means. If there are study centers in the distance education system, then these group activities can be arranged at these centers. If the system of delivery is a satellite-based two-way interactive system or simply audioconferencing, the broadcasts can be broken into segments in which students do group activities and engage in group discussion at their sites. Activities that encourage the application of the concepts taught during the conference to the local environment can be followed by time to report back to the larger class for collaborative learning.

Hispanic learners also showed a preference for concrete over abstract and a preference for active experimentation, that is, a preference for an action-based, active approach to learning. Therefore, teaching strategies should include those that allow learners to plan and carry out projects that require the practical application of principles and theories to real life. It may be useful to design constructive learning environments (Jonassen, 1994) after an introduction to theory and principles, in order to provide learners with an opportunity to share knowledge with others, apply it to real life, test hypotheses, and make meaning for themselves.

The Hispanic adult learners in question also showed a preference for information processing, elaborative processing, and judgment over perception. This implies the ability to engage in higher-order cognitive processing. In order to support these processes, instructors should design activities that engage the learner in processing different types of information, synthesizing information, and making judgments based on that information. Activities using the Internet and the World Wide Web, which offer access to a variety of information, may provide an opportunity for these learners to engage in information processing and elaborative processing. In order to support these activities, novice learners should be first oriented to the technology and then provided with a concept map of the structure of information on the World Wide Web.

These are some of the ways in which the learning style profile for Hispanic adult learners described above can provide guidance for instructional methods, strategies, and support for the distance learner.

## Conclusions

The learners in higher education are becoming increasingly diverse. Further, anecdotal reports suggest that the use of instructional technologies that enable teaching and learning at a distance has further diversified higher education by increasing access to a wide variety of cultural groups.

Our challenge is to recognize the diversity of culture and learning styles and to begin to design distance education to enable diverse learners to enhance their learning. The variety of learners, cultures, and learning styles presents a challenge - and variety itself becomes the solution. Providing a variety of instructional activities and resources through a wide array of available instructional technologies gives each learner an opportunity to excel in ways in which he or she prefers to learn. It also serves to challenge learners to expand their repertoire of learning styles, to allow them to more fully function in the diverse world.

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