Chapter I
Beginnings in Instructional Design and Culture

PIONEERS IN LEARNING, LEARNING THEORY, & PSYCHOLOGY

If the history of the world is properly searched, the birth of innovation in learning theory as a practice and psychology as a science can be found in the literature of scholars across nations. In Germany, Wilhelm A. Lay (1903) studied the relationship between psychology (i.e., memory, perception, muscle response) and the practice of teaching subject matter (i.e., reading, writing, and arithmetic). Lay believed that educational topics could benefit from an experimental approach that explored “not only the psychological but also the biological, anthropological, hygienic, economic, logical, ethical, aesthetic, and religious experiences of the pupil and his community by means of observation, statistics and the experiment (Lay, 1936, p. 139).”

In Geneva, Edouard Claparède (1905) argued that the type of teaching should be dependent on the knowledge the child brings with them. Claparède believed that the learner needed to know how to learn in order to learn. Ernst Meumann (1907), in Germany, continued with this line of inquiry into experimental psychology and experimental pedagogy examining the application of psychology methods to pedagogical problems. Given the increased demands on children to learn more information, Meumann sought to develop psychologically based methods to improve
teaching and learning. Meumann (1913) wrote in the introduction of the book *The Psychology of Learning*:

*In the traditional pedagogy we read a great deal about methods of teaching; but in most cases, the pedagogical text-books can tell us nothing about methods of learning. And yet we find ourselves confronted by the very serious question as to whether the efficiency of school-room management may not be increased by systematically improving the pupil’s procedure in the act of learning in such a fashion that his learning may be perfected in its technical aspects and accomplished more economically (p. xiv).*

In the United States, early examples of the scientific approach to the child study movement can be found in the works of psychologists G. Stanley Hall (e.g., *The Contents of Children’s Minds on Entering School* - 1893) and James M. Cattell (e.g., *Mental Tests and Measurements* - 1890). Furthering the research in child psychology, John Dewey and Edward Lee Thorndike explored the psychology of schooling and the child. Dewey (1897) theorized that, to educate an individual, one must know about their “psychological structure and activities” and their “social conditions” (p. 4). This knowledge aided in determining where the child came from and where they were headed. Specifically, Dewey sought to understand how socialization influenced learning and how it could aid in educating the individual. Edward Lee Thorndike (1903, 1906) contributed several textbooks on the psychology of education, teaching, and learning. In the textbook *Educational Psychology*, Thorndike (1903) examined the influences of mental development, environment, and genetics. In formulating a theory of education, Thorndike (1903) hypothesized the following:

*To know the original natures of the beings to be educated and to know the influence of the forces of nature, human lives and all the paraphernalia of civilization upon these original natures is to know how to control their education in the interest of the aim we have chosen (p. 163).*

Thorndike proposed that, through knowing humankind, it is possible to control the quantity and quality of our knowledge. This possibility, like the theorizing of Thorndike’s predecessors, had great implications for the design of instruction and, further, in educating the human race.

The contributions of Marxist psychologists should be added to the history of instructional design. This work contributed to the research conducted during the 1920-1940s on child study, teaching, and learning. In the United Soviet Socialist Republics (USSR), Lev Vygotsky’s research with the Institute of Psychology at Moscow University produced a manual on the practical applications of teaching.
This 1926 teachers’ manual, titled *Educational Psychology (Pedagogical Psychology)*, sought to provide teachers with insight on the psychology of children and the process of instruction (Vygotsky, 1926). Vygotsky wrote extensively in the area of child development. By example, the publication of *The Problem of the Cultural Development of the Child* (1929) provided insight into the natural and the cultural psychological development of a child. Alexander R. Luria, Vygotsky’s colleague, collaborated in writing *Ape, Primitive Man, and Child: Essays in the History of Behaviour* (1930). In this text, Luria and Vygotsky (1930) presented a theory of psychological development from ape to cultured child. Another notable psychologist who contributed to child study is Henri Wallon [*The Origins of Thought in the Child* (1947) and *The Psychological and Sociological Study of the Child* (1947)].

By the start of World War II, the beginnings of the process approach were clearly defined as psychologists and educators conducted research and developed training materials to help war efforts. Robert Gagné, Leslie Briggs, John Flanagan, and others used the research on learning, instruction, and behavior to inform instructional strategies that they developed for the military. The systematic design procedures aided in the management of military projects (Johnson, 1989; Richey, 1986; Seels, 1989). For example, the development process of the atomic bomb was an application of the systems approach. Instructional systems development (ISD) was the military’s version of instructional design. Industry used ISD in its training films. These instructional films taught large groups of people skills such as aircraft maintenance, nursing, and woodworking, as these jobs were needed during wartime (Saettler, 1990).

By the 1950s, the pioneering work of behaviorists and cognitivists further defined the field of instructional design. B. F. Skinner examined the behavior of organisms and how these organisms learned (Skinner, 1954). Specifically, Skinner’s work on programmed instruction and his development of teaching machines provided methods and devices to scientifically investigate instruction and learning (Reigeluth, 1988; Seels, 1989; Skinner, 1954; Tennyson & Schott, 1997). Skinner’s (1954) programmed instruction is based on operant conditioning where the learner’s responses are followed by a reinforcing stimulus. Through the use of teaching machines, Skinner shaped the learner’s responses by offering information in small increments through a mechanical device. The learner proceeded through a series of stimulus-response-reinforcement cycles where they were provided with a stimulus, prompted to initiate a response, and then received feedback or reinforcement as to the correctness of the response.

Cognitive learning theory flourished throughout the world. In Switzerland, psychologist Jean Piaget’s theory of cognitive development explored the development of intelligence in a child (Piaget, 1954). Hans Aebli’s (1951) foundational work in “psychological didactics” led to instructional innovations in Austria, Germany, and
Switzerland. Aebli transformed Piaget’s work in developmental psychology into an instructional theory. Specifically, in this work Aebli used a didactical method consisting of “active methods,” “learning by acting,” and “searching and inquiring.” These methods aided in constructing mental operations and helped with “exterior operations and step-by-step symbolizations” (as cited in Einsiedler, 1997, p. 272).

In the 1960s, behaviorist approaches to learning transitioned into cognitive approaches. Learning theories gave way to theories pertinent to the design of instruction. Jerome Bruner (1966) developed a theory of instruction that supported both learning and development. Bruner’s theory of instruction proposes that (a) the learner’s environmental experiences should foster a predisposition to learn; (b) there must be a structure to the acquisition of knowledge; (c) materials for learning should be presented in a sequence; and (d) rewards and punishments must be paced. Bruner believed that obtaining knowledge is a process. David Ausubel (1960) developed a theory of cognitive structures that emphasized the subsumption of knowledge—meaning how one increases and reorganizes one’s knowledge. His instructional theory proposed the use of advance organizers to arrange information from the general to the more specific.

The work of Robert Gagné for the next two decades strongly influenced the field of instructional design because of its focus on learning, learning outcomes, design, instruction, systems development, and the needs of learners or users. Gagné’s (1962b) “theory of knowledge acquisition” proposed that knowledge can be acquired through a systematic means (p. 357). Learners must first perform simple tasks to acquire subordinate knowledges. These subordinate knowledges once recalled create a hierarchy to the more complex tasks or superordinate knowledges. Then in 1965, Gagné’s publication Conditions of Learning provided descriptions of learning conditions that could be observed and therefore experimentally studied. Gagné argued that the design of a “learning situation” determines its effectiveness (p. 250). Therefore, if instruction is programmed it allows for the creation of an adaptive design that meets the needs of learners and provides indicators for assessment.

**EARLY INSTRUCTIONAL DESIGN MODELS**

From the research in task analysis, systems development and instructional systems came some of the earliest examples of instructional design models (Gagné, 1962a; Silvern, 1967). Most instructional design models are represented by some form of visual language (i.e., flowchart, venn diagram or graphic shapes) (Botturi & Stubbs, 2008). Gagne (1962a) designed a flowchart to represent his model of systems development. Figure 1.1 demonstrates that in the systems development of machines there must be a simultaneous development of the human functions. The model plans
the human interaction with the machine. The goal is to achieve the highest level of efficiency as the human and machine engage.

Other models of the 1960s included those of Leonard C. Silvern, Bela H. Banathy, and John Barson. Silvern (1967) created a “cybernetic model” that examined the multiple paths from outside the high school that supply real-life employment information to the occupational teacher who would, in turn, make curriculum adjustments on the basis of this information (p. 82). Banathy’s (1968) model demonstrated how to apply the systems approach to curriculum development and specifically focused on learners in a school environment. Barson (1967) designed a decision-making model for higher education institutions that used the systems approach to improve teaching and instruction and further implement new communications media. These early models laid the foundation to a framework for design and development. By
the 1970s, many more instructional design models were created with a focus on
the systematic design of instruction (Dick & Carey, 1978; Gagné & Briggs, 1974;

Several histories of instructional design models have been written in 70s, 80s, 90s
and 2000s to demonstrate their continued proliferation and evolution (Andrews &
Goodson, 1980; Edmonds, Branch, & Mukherjee, 1994; Gustafson, 1991; Gustafson
& Branch, 1997, 2002; Salisbury, 1990; Stamas, 1973; Twelker, Urbach, & Buck,
1972). This evolution is marked by diversity in the types of models, purpose, origin,
function, audience, plan of instruction, and learning goal. Further, many of these
instructional design models consistently maintain components of ADDIE. During
the ADDIE process, all areas (i.e., analysis, design, development, implementation
and evaluation) interact with each other at different stages of the process. The most
prevalent change from the early models to the more contemporary is that the design
and development of instruction is multifaceted; this is demonstrated through the
variety of visual languages that have moved from linear to “concurrent or recursive”
design procedures (Gustafson & Branch, 2002, p. 5).

ASSESSING LEARNERS AND LEARNING

Testing and evaluation research from the 1960s-1970s also documents a shift from
behavioral to cognitive objectives in techniques such as: criterion referenced mea-

Copyright © 2009, IGI Global, distributing in print or electronic forms without written permission of IGI Global
is prohibited.
situation) and behavior (i.e., mental procedures). These task analyses were designed around criterion-referenced tests (Klauer, 1974; Klauer, Fricke, Herbig, Rupprecht, & Schott, 1972; Schott, 1975, 1992).

**ISD**

The systems approach to instructional design was fully established by the 1970s. This is evident by the creation of graduate educational programs in instructional systems at colleges and universities and teacher and university faculty training devoted to the use of media and the implementation of instructional design (Merrill, 1971; Patridge & Tennyson, 1979). Instructional systems design found a place in business and industry in the area of training. The military continued to use ISD to streamline its training and improve efficiency (Mager, 1977).

**TRANSFORMING THEORIES**

Learning theory flourished both internationally and nationally in the late 1970s and early 1980s. In Europe, Hans Aebli’s (1978, 1980, 1981) work on constructivist learning investigated knowledge construction. Aebli experimented with how the mind constructs and acquires knowledge and the relationship of this knowledge to schema construction (as cited by Steiner, 1997). In North America, Robert Gagné and Leslie Briggs formulated a theory of learning specific to instructional design. Gagné and Briggs (1974) argued that to design instruction, it is best to work from the end (i.e., outcomes) to the beginning, thereby setting up the educational goal. The framework proposed by Gagné and Briggs consisted of five categories of learning outcomes: attitude, cognitive strategies, intellectual skills, motor skills, and verbal information. These five categories are acquired through human learning and can be observed and analyzed to design instruction based on human performance. Joseph M. Scandura’s (1971, 1977) structural learning theory provided a framework for explaining and predicting cognitive behavior as it pertains to certain learning situations. This theory deals with three perspectives of a theory of knowledge that include determining (a) the characterization of knowledge; (b) the ideal cognitive behavior of how knowledge is learned, selected, and used; and (c) cognitive capacity as it relates to information processing and memory.

By the 1980s, learning theories transformed into integrated instructional design theories of learning that focused on the methods of instruction versus learning processes (Merrill, 1983; Reigeluth, 1979; Reigeluth & Stein, 1983; Tennyson & Cocchiarella, 1986). M. David Merrill’s (1983) component display theory guides the
design of learning activities (i.e., events that the learner must acquire to achieve objectives) through a set of prescriptive relationships related to content and performance. It specifically deals with the development of microstrategies in the management of instruction, whereas Reigeluth and Stein’s “The Elaboration Theory of Instruction” (1979) offers methods of sequencing and organizing instruction on the macrolevel across the areas of sequencing, selection, summarizing, and synthesizing. Tennyson and Cocchiarella’s (1986) theory of concept teaching proposes that the design of instructional strategies is contingent on how information or content is structured. Content can be structured as relational or attribute characteristics; thereafter, the appropriate instructional strategy can be determined.

Constructivist theories of learning dominated the 1990s as methodologies to improve learning and instruction. Although constructivist theories hold a diversity of perspectives, consistency is held on the following points: (a) Learners actively construct knowledge in their mind, and (b) instruction supports the construction of knowledge. Therefore, knowledge is socially constructed (Duffy & Cunningham, 1996). Constructivists are interested in connecting the learner to their environment by authentic or real world situations. Cognitive experiences are situated in authentic or real world activities (i.e., cognitive apprenticeship) (Bednar, Cunningham, Duffy & Perry, 1992). Authentic activities include those that involve the task and the environment (Brown, Collins & Duguid, 1989; Resnick, 1987). These authentic learning environments should be adaptable in complexity and should reflect the learner’s experience and knowledge base (Bednar et al., 1992). Cognitive apprenticeship, by example, focuses on developing, acquiring, and using cognitive skills in authentic tasks. This methodology assists in improving teaching and learning. Teaching becomes a process used by experts to manage complicated tasks and guide a learning experience (Collins, Brown, & Newman, 1989).

The 1990s mark a period of new approaches to the process of design, systems of information delivery, and innovations in technology. New approaches to the process of design included rapid prototyping and concurrent engineering. Rapid prototyping is a design methodology, usually used in software engineering, whereby workable prototypes are built, tested, and refined before final production. In instructional design, rapid prototyping has been used to quickly evaluate an instructional product (Jones & Richey, 2000; Tripp & Bichelmeyer, 1990). Concurrent engineering is an approach to product development where team members work concurrently on different features of a product. This engineering process improves communication among team members, thereby making a better product to best meet the needs of the target audience. Typically, instructional design models focus on sequential versus concurrent engineering (Doré & Basque, 2000). The 1990s also introduced new approaches to systems of information delivery such as knowledge manage-
ment systems and performance support systems. Knowledge management systems, like databases in the early days, are information technology applications that make available the “collective knowledge” of organizations (Alavi & Leidner, 2005, p. 171). These applications may provide instructional design with a common repository for the collection of learning outcomes and evaluating instructional designs (Spector, 2002). Performance support systems are computer-based applications that improve human performance and productivity through on-line access to information, instruction, and other materials to be learned. Within ID, performance support systems might provide asynchronous instructional materials that support work-related activities and functions (Milheim, 1997).

Innovations of the 1990s in interactive technology include distance education and e-learning. Distance education is a method where the technology allows learners to interact with instructors and obtain information at a place and time of their choosing. Technologies of third-generation distance education include videoconferencing and the Internet. E-learning, similarly, is a method that allows the learner to interact with the instructor through technologies. Technologies specific to e-learning include the many forms of telecommunications, as well as the Internet and its capabilities of e-mail, Wiki’s bulletin boards, and digital videoconferencing. Instructional design remains integral to the project management and design involved in e-learning and distance education approaches (Bates, 2005).

PERSPECTIVES AND CONCEPTS OF CULTURE

Consistent across perspectives on culture is the desire to explain, understand, and explore human behavior and the world we inhabit. This inquiry has taken theorists and researchers into qualitative and quantitative examinations of individuals, groups, cultures, and societies, and it has defined traditional disciplines such as psychology, sociology, anthropology, education, biology, chemistry, economics, and political science. This section provides a glimpse into the origins of traditional theories of culture to provide insight into the discourse on culture as it relates to several disciplines—sociology, anthropology and psychology. It further looks at concepts related to culture. Specifically, what does it mean to take a sociological view of culture? What is an anthropological view of culture? What is a psychological view of culture? How do these perspectives and concepts aid in understanding culture? This review is not comprehensive, given the enormous amount of data, but its goal is to provide insight into the nature of culture.
Sociological Perspectives

Sociological perspectives on culture may focus on social tradition (the process) or social heritage (the product). The product or social heritage is that which is acquired (handed down), and the process or social tradition is the course in which the acquisition takes place. Sociologists describe their perspectives on culture in the following ways: patterned behavior of a group; life history of a group; customs of a group; social relationships of the individual as it pertains to the whole group; social heritage of a group (i.e., art, beliefs, knowledge, morals, tools and tool use, and law); and socially shared group habits (Kroeber & Kluckhohn, 1966).

One of the earliest examples of this sociological perspective on culture comes from the empirical work of French sociologist and founding contributor to modern sociology Émile Durkheim, who believed that society must be understood as a whole or through its “collective consciousness” (Durkheim, 1984, p. 84). A collective consciousness meant that the society, culture, or group responds with shared beliefs, ideas, values, and norms. These characteristics define the social aspects of a society or culture. Durkheim’s work disclosed the sociological nature of culture through an examination of the different layers, levels, and structures of the “social phenomenon” enacted through beliefs, practices, and predispositions (Durkheim, 1938, p. 7). This is evident in Durkheim’s classic sociology text, The Division of Labor in Society (1893) that analyzed the impact of the environment on social relations and how morals and norms formed within these social relations.

Anthropological Perspectives

Anthropological perspectives on culture emphasize learned ways acquired throughout one’s life experiences. Culture is not innate, instinctive, or biologically transmitted. Culture examines the actions and interactions of individuals or groups and the tangible or crystallized products of human behavior. Anthropologists describe their perspectives on culture as: ways of life; ways of thinking, acting, doing, and feeling; social interaction; behavior that is learned, taught, shared, and transferred to other persons; patterns or forms of behavior or thinking; symbols; the making and use of objects or tools; interactions among groups; attitudes; language use; language articulation; and thoughts. All of these can be sanctioned or unsanctioned by society (Kroeber & Kluckhohn, 1966).

Franz Boas (1911), a pioneer in the field of anthropology, viewed culture from a whole-versus-parts interpretation, meaning that “all” social behavior of an individual, an individual in a group, or the group itself is characterized through mental and physical activities. These activities enable the production of products that serve a function in the society or culture. The elements of culture are dependent on other
elements, and collectively, these elements create the structure of culture. Boas’s research and practice lead to the division of anthropology into four distinct fields: archaeology, linguistic anthropology, physical anthropology, and cultural anthropology. These four fields of research cover “the whole of humanity beyond time and space” (Boas, 1938, p.1). Archaeology is the study of past ways of life through analyses of material remains. Research in this field may include the collection of data such as building remains, stone tools, skeletons, pottery, and other artifacts. Linguistic anthropology originally was the study of undiscovered written language; however, now it broadly covers human language and speech. The history of languages; the relationship of language to societies, cultures, and people; and the sound, meaning, and grammar of a language are research areas in this field (Ferraro, 2004; Miller, 2002). Physical or biological anthropology is the study of biological organisms such as humans and, specifically, human behavior and biology. Research in this field includes understanding, studying or replicating the evolutionary growth, and the organic/inorganic distinctions of organism(s). Cultural anthropology examines the ways of life in a society or culture. This type of study entails a detailed or ethnographic description of the people gained through observations, conversations, and living with the people being studied (Ferraro, 2004; Haviland, 1987).

**Psychological Perspectives**

Psychological perspectives on culture focus on learning and habit. In this case, culture is the culminating total of learning and recognized habits that are acquired by people and transferred for generations to come. Psychologists describe their perspectives on culture as: the total of all learned; learned behavior; a focus on the individual; or a mental activity (Kroeber & Kluckhohn, 1966).

Lev Vygotsky (1929), a pioneer in the field of psychology, viewed culture as a product of nature, meaning that human behavior only developed to the point in which it was influenced by culture and not beyond. Culture alters nature to meet the needs of human beings; it is a reciprocal process. Vygotsky further formulated his ideas into the cultural historical approach to psychology, proposing that higher mental functions are found in humans social interaction with their environment. Humans actively create their environment. Culturally, society organizes tasks and tools for a young child to master that are structured in social ways. By example, language is a tool invented by humankind that aids children in the organized development of higher mental processes. Historically, humans have created and perfected tools that facilitate interaction with the physical environment, control mental and physical behavior, and carry human’s social history (Luria, 1979; Vygotsky, 1978).
Conceptual Perspectives

Other perspectives on culture move beyond disciplinary focuses into concepts such as modification, structure, and heredity. Similarly, concepts may deal with ideas or hypotheses about culture. Modification concepts propose that culture is created and recreated. Through modifications to society, culture is manifested. These modifications are based out of need. For example, overcrowding in a city might create the demand for the expansion of the city, acquisition of land, construction of housing, and so forth. Structure concepts propose that culture is organized and arranged. Culture becomes structured when connections are made between institutions or systems across time. Examples of culture focused on the merger of inventions, both tangible and intangible, within a society and the acceptance of these inventions by groups. Heredity concepts propose that culture is tangible (i.e., artifacts or products) or intangible (i.e., ideas or symbols). All inventions or tools of use created and recreated are, themselves, culture. Culture is not the human body. The tangible and intangible products of man’s inventiveness has transcended through history (Kroeber & Kluckhohn, 1966). The production, implementation, and distribution of ideas are culture at work. The culmination of all that humans have made is culture.

These interpretations, perceptions, and conceptions consistently use qualitative and quantitative analyses to examine cultures and societies. Researching cultures and societies requires these methodologies and procedures. Qualitative analyses generate accounts of individuals, environments, and dialogues that focus on understanding individuals or groups from their perspectives. Both historical and ethnographic (i.e., ethnography) analyses are included under the area of qualitative research. Ethnography has traditionally been used to describe cultures. The techniques of qualitative research method include the following: observation, participant observation, open-ended interviews, and the collection and review of documents and artifacts. Quantitative analyses generate statistical relationships between numbers; the data collected are translated into variables (i.e., numbers or letters), analyzed, and plotted on a table or graph. Techniques of this research method include surveys, structured observations and interviews, data sets, and experiments (Alasuutari, 1995; Bogdan & Biklen, 1992).

The different perceptions of culture are not neatly packaged. The blending into another field or practice is a natural part of the nature of culture. Culture is more than a layered, leveled, fixed, or transfixed phenomenon. As a theory, method, or concept, culture is everything known and yet to be known. Culture is all that there is or could be.
MAPPING CULTURE TO INSTRUCTIONAL DESIGN AND ICTS

Culture is significant to how learners learn. It is the way learners see the world and themselves in it. The theory and research on learning (Brown & Duguid, 1996) and culture assists in building ICTs and further understanding how culture affects learners interactions with technology (Collis, 1999). Researchers have examined culture as a factor in helping learners bridge their understanding and adapt to the academic needs of learning environments (Banks & Banks, 2003; Gutiérrez & Rogoff, 2003; Ladson-Billings, 1994; Lee, 2003; Nieto, 1996). This adaptation has been both educational and technological as the integration of culture would situate learners in their “cultural frame of reference” when learning (Branch, 1997; Gay, 2000, p. xix; Lave & Wenger, 1991; Mazyck, 2002; Powell, 1997; Thomas, Mitchell & Joseph, 2002; Young, 2001, 2002, 2008). In some cases, researchers and practitioners have created ICTs to meet the academic needs of ethnically diverse learners (Chascas & Cummins, 2004; Eglash, Bennett, O’Donnell, Jennings, & Cintorino, 2008; Gilbert et al., 2008; Pinkard, 1996, 1998). Without an existing framework, they have found ways to integrate culture in their designs, and they have done so through the use of technology. However, these culture-specific creations have been few in number.

Theorists have proposed that learning is influenced by culture (Bruner, 1996; Vygotsky, 1978), and culture is significant to how learners acquire new understandings (DuBois, 1903). Learning takes place in a context that is specific to the environment and content information (Bednar et al., 1992; Brown et al., 1989; Bruner, 1985; Resnick, 1987; Rogoff & Lave, 1984). Therefore, learning should be situated from the learner’s perspective (Lave & Wenger, 1991; Vygotsky, 1978). In Bruner’s (1985) examination of the relationship between learner and learning, he understood that learning is acquired in a variety of ways and that learning happens in a variety of ways. Further, Bruner argued that learning is “context sensitive” (1985, p. 6). It follows that learning takes place in a context situated from the learner’s cultural perspective or a cultural context.

The literature mapped to support a cultural context in instructional design has been articulated as culturally responsive, culturally relevant, culturally mediated, cultural accommodation, cultural compatibility, cultural congruence (Au & Kawakami, 1994; Gay, 2000; Hollins, 1996; Jordan, 1984; Ladson-Billings, 1994), and multiculturalism (Banks & Banks, 2003; Bennett, 2001; Sleeter & Grant, 1988). Gay (2000) argued that culturally responsive pedagogy focuses on the needs of ethnically diverse learners by allowing them to use their prior knowledge; situates learning from the learners’ cultural frames of reference; incorporates learners’ ways of being, seeing, and doing; and integrates learners’ histories, language, and learning styles while affirming and validating them. Hollins (1996) contended
that culturally mediated instruction is characterized by the homogeneity of the curriculum, instruction, teacher, and learner; this means that all share the same culture. However, in cultural accommodation, the teacher and learner do not share the same culture; academic learning is facilitated through the moderate integration of the student’s culture. Ladson-Billings (1994) proposed that culturally relevant teaching assists in sustaining the culture of the learner and transcending norms of the dominant culture; this pedagogy empowers learners through the use of cultural referents that bridge home and school cultures. Cultural compatibility, as defined by Jordan (1984) assumes that there are relationships between the culture of the school and the culture of ethnically diverse learners and that those connections need to be identified, developed within a cultural context, and used to promote academic achievement. Au and Kawakami (1994) hypothesized that cultural congruence happens when ethnically diverse learners perform poorly in school on the basis of the mismatch between school culture and home culture. Banks’ (1995) definition of multiculturalism advocates providing learners from diverse racial, ethnic, and socioeconomic levels with an equitable educational experience and opportunities for academic achievement and socioeconomic advancement. Collectively, these theories and methods focus on the needs of a target audience, integrate culture, and situate learning from and through the learner (Young, 2008).

This research suggests that culture influences learning and learners. To better meet the needs of learners, culture must be considered when designing ICTs. This means that the business as usual ways of design need to be transformative in globalizing learning.

REFERENCES


cational Research and Improvement. (ERIC Document Reproduction Service No. ED335027)


ENDNOTES

1. Small mechanical devices used for individualized instruction.
2. See the work of Maximillian Webber for a sociological examination of theories of culture.
3. In Cole and Scribner’s (1978) introduction to the book *Mind in Society: The Development of Higher Psychological Processes by L. S. Vygotsky*, language is viewed as a sign not a tool. Given the context, language can be a sign or tool.