

# **The Cultural Approach To Designing Computer- Assisted Instruction For ESL**

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## **Abstract**

**With continuing advances in technology, computer-assisted instruction provides opportunities for individualized, interactive instruction. The philosophy of constructivism has encouraged instructional designers to create less behaviouristic, more democratic programs that promote learner control. In the area of ESL (English as a Second Language), computers are seen to be a highly motivating, instructional tool. The questions that remain poorly addressed are: How do the students' cultural ways of knowing affect how they utilize computer-based language instruction? How can instructional designers, software developers, and instructors respond to the challenge of creating self-instructional materials that include Western ways of seeing the world, which influence how we teach language and how we expect students to learn?**

## **Introduction**

**The first purpose of this paper is to address the concerns of culturally different students in their use of CALL (computer-assisted language learning). My second objective is to raise the awareness of instructors, instructional designers and software developers regarding culturally different ways of knowing. This interest is based on the belief that materials for culturally different students must include information about Western ways of knowing, learning, and teaching. This knowledge will empower students and lessen the anxiety of students who find that their traditional ways of learning do not meet the demands of an ESL situation.**

Research specific to the topic of how culturally different ways of knowing could be included in the development of CALL remains elusive, or perhaps nonexistent. However, research in underlying areas, such as how the philosophy of constructivism has influenced theories of language teaching, instructional design, and software development, is abundantly available. The research in these areas is supportive of the theory that culture affects how individuals shape their reality. This reality, in turn, affects the creation of a world view, or cultural way of knowing, that may differ dramatically from one culture to another. A contrasting theory is that reality is external to the individual and common to all people. Therefore the issue of developing English language materials, sensitive to culturally different ways of knowing, becomes irrelevant. Such a belief might justify the paucity of research on this topic.

Due to the scarcity of research related to a cultural approach to designing CALL, much of this paper is based on speculation and my personal beliefs. My experiences working with ESL students leads me to believe that there are many culturally different ways of knowing. I have come to believe that additional research in this area is necessary, and must directly involve the students' reflections on computer-assisted language learning. Despite the possible consequence of applying individual concerns and preferences to all members of society, which quickly leads to stereotypes and racism, it is my opinion that the benefits of cultural understanding far exceed the risks. In light of such perils, it is understandable why this topic has not attracted more attention.

## **Supporting Research**

### **Constructivist Philosophy**

**The philosophy of constructivism underpins the theories of Ethnoknowledge, teaching ESL, and the instructional design of computer-assisted learning. It is the common factor that provides the foundation for the cultural approach to the study of technology. The following explanation is a very brief summary of constructivism. For more information go to the section written by Bonnie Skaalid.**

### **LINK**

**Saxe (1991) states, "Empirical research on culture and cognitive development has been influenced by two constructivist treatments....One treatment is associated with the structural developmental approach of Piaget, and the other is associated with the sociohistorical approach of Vygotsky" (p. 4). Saxe explains that Vygotsky's interest in the way children become less impulsive as they gain control of their interactions with the environment, led him to believe that "the appropriation of cultural artifacts liberates children from direct stimulus control and also creates an intrinsic link between cognitive development and culture" (p. 9). Although Vygotsky's theory is still controversial because of his socio-cultural focus to constructivism, it is this cultural context that forms the basis for cultural learning theory. The intrinsic link between culture and cognitive development is the main issue addressed in this paper.**

**Jonassen (1991) also discusses constructivism in the following passage:**

**[C]onstructivism is concerned with how we construct knowledge. How one constructs knowledge is a function of the prior experiences, mental structures, and beliefs that one uses to interpret objects and events. Constructivism does not preclude the existence of an**

external reality; it merely claims that each of us constructs our own reality through interpreting perceptual experiences of the external world. (p. 10)

If experience influences cognitive development, and if members from each culture have different experiences and therefore different realities, the result is different cultural ways of learning.

### **Ethnoknowledges: Cultural Learning Theories**

Saxe (1991) explains that although Vygotsky did not specifically analyze the influence of cultural practices on knowledge development, his writings inspired others to begin research in this area (p. 12). Culturally different epistemologies, or what Hess (1995) calls "ethnoknowledges," refers to other knowledge systems, other ways of knowing and doing, as compared to those of the Western world (p. 187). "Members of different cultures, because of the specific and unique demands of living in their societies, make sense of their experiences in different ways" (Driscoll, 1991, p. 221).

Numerous studies have resulted in the conclusion that culture influences not only affect how people see the world, but how they think, and the strategies they use to learn, and problem solve.

Several examples are paraphrased below.

#### **Dyirbal Speakers of Australia**

The following example, based on the research of Lakoff (1987), appears in Driscoll (1994, p. 228).

Sort the following words and create a category for each: males, females, figs, kangaroo, meat, dogs, honey, bees, the moon, cigarettes, water, sun, spear, wine, wind, fish, mud, fire, birds, rainbow. Compare your categories to those of the Dyirbal speakers of

**Australia.**

**The Dyirbal Aborigines use categories based on experience, myths and beliefs, and dangerous and exceptional things.**

**Bayi: males, kangaroo, the moon, rainbow, fish, spear myths and beliefs; rainbows are believed to be mythical men**

**cigarettes experience wine is made from fruit**

**Bala: meat, bees, wind, mud**

**Balam: figs, honey, wine, Balan: females, dogs, birds, fire, water, sun experience water extinguishes fire; myths and beliefs; birds are believed to be female spirits; dangerous and**

**exceptional things are put in a minimally contrasting category: dogs are considered exceptional animals, so they appear in the second class instead of with men**

### **Abou and Marcy's Story**

**In an electronic journal article entitled "The Man Who Mistook, "Wet Paint" for a Verb: A Chronicle for Thinking about Language, Culture and Writing" (<http://violet.berkeley.edu/~cwp/TESL-EJ/ej04/a2.html>), Marcia Pally, documents the writing tutorial sessions of a graduate student from Nigeria. Pally synthesizes the reflections of the student and of herself, the tutor. One of the three teaching issues the report addresses is, "cross-cultural differences in the rhetorical requirements of expository and persuasive writing, including argument, proof, cause-and-effect, and summation/judgement" (p. 1). The author's research is based on the**

belief that culturally different writing styles differ dramatically from an American format which is “alien and often problematic to many students from non-Western and non-English speaking cultures” (p. 4). Pally posits that even advanced students find academic writing difficult because “they have not been explicitly taught it or because it requires sizable (and undesirable) changes in world view and personality” (p. 4). Pally quotes Fox (1994), who found that the results of students’ efforts to change their writing style are “frustration, depression, resistance, rebellion, or failure” (p. 4).

Abou Diallo, the student involved in the tutorial session, reflects on her frustration when professors refused her request for writing tutorials. She writes of her first impression that American teachers “did not really give a damn about our needs” (p. 5). A source of great bewilderment to Abou is knowing that her paper needs improvement, but not knowing exactly what is wrong with it.

It is very interesting to read the parallel reflections regarding the large lexicon available to English speakers. Abou reflects on the confusion over having several words to describe one object. Marcy reflects on the possibility that languages with smaller lexicons use differences in tone and connotation rather than synonyms. As the chronicle progresses, it appears that both participants are beginning to make sense of an alternate world view, and how it influences writing.

### **Kimberly’s Story**

In an on-line paper, Kimberly Sloan (<http://copper.ucs.indiana.edu/~cunningh/kjsloan3.html>), recounted her experience with a young man who may be referred to as speaking

English as a second dialect. As a member of a prison English class, the student was directed to choose a picture and use it for the setting of a story. He chose a picture of a castle; a setting often associated with knights and dragons. Much to Sloan's dismay, the student responded with a story of an abused queen, a drunken, penniless king, and a ruthless castle landlord. The student had created a story that reflected his own ethnoknowledge. After reconciling her doubts about ever relating to a student from such a different culture, Sloan surmised, "culture and language are interconnected. We strive to make sense of the world around us through language. There is no way to separate culture and language and no reason to do so" (p. 1). How can ESL teachers respond to the challenge of teaching and culture?

## Theories of Teaching English As a Second Language

Over the last decade the focus of language training has changed from grammatical proficiency to communicative effectiveness. Heidi Rigganbach and Anne Lazaraton (1991), explain how the changing focus of language training influences ESL teachers' choices of

methods and activities:

[R]ather than implementing activities and exercises which focus strictly on accuracy (such as those using memorization, repetition, and uncontextualized drills), many classroom teachers have concentrated on promoting communicative competence in language learners by using "communicative activities" - those which rely more on the students' ability to understand and communicate real information. (p. 125)

What has now been termed the communicative approach, reflects the philosophy of constructivism. Instructors choose activities that are in context and relevant to the students. The instructor acts as a coach,

encouraging students to be real-world problem solvers (Jonassen, 1991). Student participation is strongly emphasized despite the noisy consequences. Lewis and Hill (1992) advise, "if 30 students speak at the same time they make more noise than is ever heard in the traditional question and answer classroom. The reason they make more noise is because there is more constructive activity going on" (p. 45).

This theory of teaching a second language has been highly promoted in the Western world where individualism is stressed, and teacher domination is being reduced. The Western view of democracy and equal rights is reflected in this teaching theory that emphasizes learner control. How do different world views and cultural values determine what are culturally acceptable teaching practices in other countries?

### **Guofang's Story**

At the 1997 AMTEC Conference in Saskatoon, Saskatchewan Guofang Li explained her own feelings of confusion when studying English in China. In her presentation regarding the use of the communicative approach to teach EFL, Guofang reflected on her first learning experience with this method. Previously, Guofang had experienced the traditional teaching approach of China: a lecture style where students were passive learners. When Guofang and her classmates experienced the communicative approach in English class, they were unaccustomed to being active participants in school. The students' unresponsiveness led the teacher to return to a lecture format. Guofang commented that the students liked the new style of

teaching, but they were unsure of how to react to it.

Perhaps Guofang and her classmates would have had a different experience if the basic philosophy of this approach had been explained. This new way of learning did not match their ethnoknowledge. They needed to learn “a new way to learn” that corresponded with this unfamiliar teaching method. If they had understood that it was “good” to be noisy, to ask questions, and choose their own topics, would they have been more eager to participate? To understand why previously unacceptable behaviour was being encouraged, may have helped the students respond to this new epistemology.

### **Theories of Computer-Assisted Language Learning**

As in the two previous theories, the ability of an individual to interpret the world and create a personal reality, is evident in the changing theory of computer-assisted instruction. After an extensive literature review, teachers’ opinions about computer-assisted language learning appear very positive because of the unique ability to provide individualized, interactive instruction. Interactive technologies that combine audio and visual lessons have tremendous potential for second language instruction (Hunt, 1993). Some benefits of multimedia-based programs are the facilitation of student interaction and involvement (Smoke, 1993). Murison-Bowie (1993) recommends that computers are valuable tools to aid the process of learning, which allow students to begin a program at the appropriate point and continue at a pace that enhances learning.

Richard Schwier (1994) explains the influence of constructivism

in multimedia design principles. The author states, "democratic environments do not impose highly structured learning strategies on the learner. Rather, democratic environments emphasize the learner's role in defining what is learned, how it is learned, and the sequence in which it is learned" (p. 3). The author continues to explain that, "Democratic and cybernetic environments might emphasize a more constructivist orientation - one in which multiple realities are recognized as legitimate, and therefore, learners may be empowered to express an array of appropriate directions, processes and outcomes for learning" (p. 4).

Despite these attributes that are so desired by Westerners, some ESL students continue to request drill and practice activities, and final exams. For some students studying means memorizing grammar lists and rules. Studying does not mean socializing and conversation. If instructional designers and software developers follow a constructivist philosophy, then it seems reasonable to consider culturally different ways of knowing that might influence multiple realities. The challenge is to incorporate information into CALL programs that will help ESL students understand why a particular method of study will help them in their language learning situation.

### **Incorporating Ethnoknowledges and CALL**

Hess (1995), hypothesizes that using a cultural approach to address science and technology issues challenges people to consider what is true and valuable from a different perspective. This may be an important consideration for designers of English language learning programs. If truly individualized instruction is to be created, the

individual's cultural epistemology must be considered. How does that epistemology make Western ways of knowing confusing, unclear, or irrelevant? Brent Wilson (1993) postulates, "The conceptual schemes we apply to the world constrain that world. Similarly, the schemes instructional designers apply to content constrain and shape that content, necessarily distorting it to fit our preconceived notions" (p. 1140). By using a cultural approach to instructional design, preconceived notions will not be accepted as reality, but part of our Western way of knowing that must be explained and made accessible to ESL students.

How this information is made available to students is a challenge. Perhaps cultural "links" to explanatory information might be helpful. The individualized nature of instruction is maintained, as only those students who have questions will access the links. A computer-assisted writing tutorial for graduate students might provide cultural explanations for a Westernized essay format. For example: "The English language has a very large lexicon: there are many words to describe one object or action. Westerns use numerous synonyms rather than repeating a particular word. This provides more interest for the reader."

Perhaps cultural knowledge can be included as feedback in practice activities. For example, consider the uncertainty of a Dyrbal speaker if he were to encounter the previously mentioned categorizing activity in a hypothetical computer program. As part of a vocabulary lesson he is requested to remove the word, in each group, that does not belong. Presented with the words "woman, man, dog, bird", he chooses "man". The program responds with, "No, try

again". After two more attempts, the student chooses "bird". The program responds with, "Excellent!", much to the dismay of the student. This category does not match his ethnoknowledge. Now he is faced with not only learning a new language, and a new technology, but also a new world view.

Perhaps a more explanatory response would assist the student in understanding this culturally different way of knowing. If the student chooses "man", the response could be, "A man is a mammal. A mammal has hair, and babies drink milk. A\_\_\_\_\_ is not a mammal." Although the student is still faced with a different world view, he now has some information about why Westerners do not place women, birds, and dogs in the same category.

An innovative curriculum involving the use of e-mail to teach ESL has been prepared at the British Columbia Institute of Technology. Kathleen Vance (1997) states that the curriculum is based on the belief that, "people with limited English language skills can wrestle successfully with a high level of computer technology, communication tasks, and intercultural techniques, at the same time they are learning English" (p. 2). Predicated on the understanding that two of the required skills to become employable in Canada are team work and leadership ability, the curriculum developers incorporated cooperative learning tasks in each module. The students were not simply instructed to work in small groups, but given explicit instructions about how to work cooperatively. For example, "Congratulate each other on completing your second CMC session" (p. 18). This may seem like a very inappropriate, over-familiar gesture to students from countries where employee relations are kept on a very

formal basis, but it is necessary for students to learn the behaviours associated with team work.

A second example of cultural instruction advises students to, "Join your team. Don't wait for everyone on your team to arrive. If team members are missing, begin without them. You can help them catch up when they arrive" (p. 96). Although these steps may seem obvious to many Western students, they may be new or unusual to some ESL students who have a different understanding of time. In a culture where time constraints are irrelevant, it may be very unacceptable to start without members of a working team. The insightful curriculum developers considered culturally different ways of knowing and addressed issues that will help students become more employable in the Western business world.

### **Empowering Students**

Considering that culturally different people have different realities, instructional designers' sensitivity to cultural differences may be a deciding factor in empowering or repressing other world views. I believe that it is extremely important to stress to students that this is the Western way of knowing, not the highway of knowing. The goal of using a cultural approach to designing CALL is not to impose Western epistemology, but to provide ESL students with the empowering knowledge that will help them cope in a different culture. The goal is not to discount other ways of knowing, but to address the differences so instructional designers, software developers and teachers can be better prepared to assist students in the acquisition of Western knowledge.

Hess (1995) warns against naivete in the study of cultural differences because, "usually the people on one side of the difference have the upper hand and want to impose their way on the other side" (p. ix). How the dominant culture is imposed, is often very subtle. Consider the following example. As a recommendation to prospective ESL teachers that students must learn how to learn, Lewis and Hill (1992) state, "Many students studying a foreign language have very strange ideas of what will help them to improve" (p. 18). The authors' choice of the adjective "strange" may lead readers to believe that the students' ways of learning are wrong. Undoubtedly, understanding Western ways of learning is important for foreign students. It is also extremely important that teachers learn that culturally different ways of learning are just different- not strange. Western teachers must become aware that non-Western learning styles are a product of ethnoknowledges, and it is not the teacher's role to make value judgements about that cultural epistemology. If teachers believe that culturally different ways of knowing are wrong and must be "Westernized" the result will be cultural hegemony.

Hess (1995) also advises that the improper study of cultures leads to generalizations, cultural stereotypes, and racism. The author explains, "to apply general descriptions of cultures to individuals constitutes the "ecological fallacy", the fallacy of thinking that what applies to the group necessarily applies to the individual" (p. 121). This is a very delicate issue. Instructional designers need more information about culturally different ways of knowing, but the danger lies in creating stereotypes. Researchers must directly

involve ESL students in compiling information about cultural epistemologies, and it must be stressed that research findings may not apply to all members of a specific culture. The purpose of defining cultural differences is not to widen the gap between cultures, but to encourage people to look at the world from a different perspective. As in the example of Marcy and Abou, the lack of cultural understanding caused confusion and frustration for both participants. When these people compared their differing epistemologies, understanding replaced confusion. Kimberly Sloan states succinctly, "I realize that this difference in environments and world views is where the true learning can occur" (p. 2).

#### References

- Bruner, J. S. (1971) The Relevance of Education New York, NY: W. W. Norton & Company Incorporated.
- Celce-Murcia, M. (Ed.) (1991) Teaching English as a Second or Foreign Language Boston, MA: Heinle & Heinle Publishers.
- Driscoll, M. P. (1994) Psychology of Learning for Instruction. Needham Heights, MA: Allyn & Bacon.
- Hess, D. J. (1995) Science & Technology in a Multicultural World. New York, NY: Columbia University Press.
- Hunt, N. (1993). A Review of Advanced Technologies for L2 Learning. *TESOL Journal* 3(1). 8-9.
- Jonassen, D. H. (1991). Objectivism versus Constructivism: Do We Need a New Philosophical Paradigm? *Educational Technology Research and Development* 39(3), 5-14.
- Lewis, M. and Hill, J. (1992) Practical Techniques For Language

**Teaching. Hove, England: Language Teaching Publications.**

**Li, G. (1997). Western Media and EFL Teaching in China. Paper presented at AMTEC Conference. Saskatoon, Saskatchewan, May, 1997.**

**Murison-Bowie, S. (1993). TESOL Technology: Impositions or Opportunity? TESOL Journal 3(1), 6-8.**

**Pally, M. (<http://violet.berkeley.edu/~cwp/TESL-EJ/ej04/a2.html>). The Man Who Mistook, "Wet Paint" for a Verb: A Chronicle for Thinking about Language, Culture and Writing.**

**Saxe, G. B. (1991) Culture and Cognitive Development Hillsdale, NJ: Lawrence Erlbaum Associates.**

**Schwier, R. A. (1994). Multimedia Design Principles for Constructing Prescriptive, Democratic and Cybernetic Learning Environments. Paper present at World Conference on Educational Multimedia and Hypermedia. Vancouver, B. C., June, 1994.**

**Sloan, K. (<http://copper.ucs.indiana.edu/~cunningh/kjsloan3.html>). Language Grows Out of Life: Abduction, Juxtaposition, and Culture.**

**Smoke, T. (1993). The Last Entry Was Love: Writing a Play on a Network. TESOL Journal 3(1), 34-35.**

**Wilson, B. G. (1993). Constructivism and Instructional Design: Some Personal Reflections. In M. R. Simonson and K. Abu-Omar (Eds.). Proceedings of 1993 AECT Convention. Ames, IA: AECT, 1131-1149.**

**Vance, K. (1997) Computer Mediated Communication (CMC) for ELT. British Columbia Institute of Technology. Province of British Columbia. Ministry of Education, Skills and Training. Centre for Curriculum, Transfer, and Technology.**