

# What Ever Happened to Crayons? How Interactive Activities Such as Netconferencing Enlist Learning

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## Abstract

*Interactive activities offer innumerable possibilities within eLearning environments. As such, one possibility within the interactive activity realm is netconferencing, so as to support the learning objectives. Enhancements within the eLearning environment support the learner's focus upon knowledge and conceptual framework of understanding. Netconferencing supports numerous components that are difficult to create within an eLearning environment. As such, netconferencing is an appropriate venue to focus attention towards meeting learning objectives. A linkage between aspects will occur. But net conferencing is not a panacea; it is one tool to facilitate interactivities within e-Learning. A bridge between what the students already know and need to know still needs to be created, and the construction of that bridge may require a number of bricks, concretes, and steel scaffolding to make it sound. Inclusion of interactivities that incorporate mental tools such as metaphors, inscriptions, narratives, and symbolic representations provide sound groundwork for bridging the gap between technology and learning. New technologies, such as net conferencing can then cross the bridge to mediate with learners more effectively.*

## Introduction

Interactive activities have the ability to enhance the learning environment, so as to support various learning environments that enhance learner comfort levels. Interactive environments, such as netconferencing, have the ability to enhance a learner's conceptual framework of understanding so as to focus a learner's attention beyond the mere technology integrated into the instructional environment, towards building the knowledge and higher order thinking skills towards meeting learning objectives.

To have informed students that understand ideas that are important, Useful, beautiful, and powerful. And we also want them to have the Appetite and ability to think analytically and critically, to be able to Speculate and imagine, to see connections among ideas, and to be Able to use what they know to enhance their own lives and to Contribute to their culture. (Eisner, 1997, p.349)

Through the interactive activities made easily available through instructional technology, learners can support the creation and enhancement of their conceptual framework, so as to formulate their critical understanding and enhancement of the world in which they live, as well as further conceptualize the framework of understanding to support the learning objectives.

## How to Bridge the Gap between What Learners Already Know to What They Need to Know

*Representational language and comfort zones* Often in the creation of a new medium of knowledge communication, such as the Internet, old successful methods of communication are by-passed (Gallini, Seaman, & Terry, 1995; Salomon, 1997; Turbayne, 1962; McLuhan, 1968, 1976). The history of the human race is based not only on the achievements of individual minds, but on the recognized forms of representation available to the ancestors that enabled them to make their ideas and feelings public through cultural representations. Literacy includes the forms of representation that convey anthropological, historical, artistic, and inherently recognizable meaning on multiple levels of cognition (McLuhan, 1968, 1976; Salomon, 1997; Vygotsky, 1935; Wertsch, 1985). Current iconic representations and metaphors used in technology are rapidly taking on grass-roots recognition among peoples of many cultures and languages, such as the icons of paintbrushes, houses, worlds, and file folders. So, to assure this evolving integration with existing cultures, the "old" knowledge must converge with the new (McLuhan, 1968, 1976) and the new representations and language will necessarily contain the "old." Emmanuel Kant suggested a

close connection between a human's experience of the world and the inner structure of the mind. (Rothstein, 1996). Wolfgang Pauli proposed that

The process of understanding in nature, together with the joy that man feels in understanding, i.e., in becoming acquainted with new knowledge, seems to rest upon a correspondence, a coming into congruence of preexistent internal images of the human psyche with external objects and their behavior." (Rothstein, 1996, p.203).

*Mediational Tools and Proxemics* The traditional dictionary meaning assigned to the word "tool" is "anything, which, held in the hand, assists a person to do manual or nonmanual work (Houghton Mifflin Dictionary, 1974,p.228). Vygotsky used the word "tool" in a similar context, assigning it meaning in relation to work, and including physical tools that would include any type of proxemic devices. But his definition would have also included mental as well as physical tools. Metaphors, symbols, and semiotic representations of communication are a part of the 'mental' toolkit, and his definitions would likely, under that definition, also have included technological instruments, computer hand devices, robotics and other electronic tools contained in computer devices or electronic equipment. Vygotsky offered an alternative, innovative, explanation for mental functions. He suggested that the primary tools of activities, represented in signs and symbols, acted as agents for culture, and served as intervening links to consciousness (Wertsch, 1985). Mediation of these tools was the structural and genetic central feature of mental functioning which became a necessary liaison to consciousness. His seminal research transformed existing methodologies with his introduction of this intermediate link of action/object (of study). The body of research initiated by Vygotsky offered the basis for a culturally grounded theory of cognition, with the concept of "mediated tools" linking culture to the functions of consciousness.

*Tools to Facilitate E-Learning* Electronic learning (eLearning) environments transpose space and time. Globally people are exposed to the Internet and cellphones with built-in cameras. Modernity (McLuhan, 1976) is repositioning time from the linear, past, present and future, and influencing how we interact with others and within the construct of our daily lives. Time as a linear descriptor of events is being replaced by a "home page" of simultaneously presented information which can be from the present, the past, or predictive of the future. Electronic interactivities that can help focus the learner's understanding of both content and virtual "space" (context), and can facilitate learner's mediation with the knowledge materials presented to the learner. The intention is to help the learners move from isolation toward collaborative and community-oriented goals and to do so using as many tools that mediate with the learner as necessary.

E-Learning environments are enhanced through interactive activities that support the learner's levels of motivation within eLearning communities. Vygotsky emphasized the importance of social interactions, such as interactive activities within eLearning environments, as imperative aspects related to the progression of the learner's understanding of the subject matter (Vygotsky, 1935; Vygotsky, 1962; Vygotsky, 1978; Vygotsky, 1981; Wells, 1996; Wells & Chang-Wells, 1992; Wertsch, 1985).

*But Whatever Happened to Crayons?* Tactile, recognizable tools, like the tools of play, such as crayons, can still conjure up all kinds of memories for almost anyone over 15 or 16 years old, despite all of the movements towards the use of technology over those same last 15 years. Using tools that are recognizable, especially those that might evoke happy memories or cultural associations, can expand the learner's sphere of understanding. Vygotsky (1935, 1962, 1978, 1981) purported that the spontaneous activity of "play," mediated with the learner and the mental processing of information, can produce evolutionary learning from those familiar and spontaneous interactive processes. Often in instructional design, however, it can be easy to overlook these same activities and evoked cultural memories in favor of electronic tools and "du jour" learning approaches. Interactive processes within e-Learning environments often utilize and expand on the electronic offerings available to facilitate the desired learning objectives, and these certainly can accomplish the intended results too. Therefore, a look at eLearning activities can provide further insight into opportunities to assist student learning.

*Interactive Activities* Interactivity within eLearning environments has been defined as "reciprocal events that require at least two objects and two actions. Interactions occur when these objects and events mutually influence one another" (Wagner, 1994, p.8). Interactivity is a complex structural and conceptual event within eLearning environments. Focus upon interactive activities by numerous researchers (Moore, 1989; Hillman, Willis &

Gunawardena, 1994; Burnham & Walden, 1997; Crawford, 2000; Crawford, 2003) offered an integrated level towards interactive activities when focused upon interactive activities within eLearning environments: learner-content (Moore, 1989); learner-interface (Hillman, Willis & Gunawardena, 1994); learner-instructor (Moore, 1989); learner-learner (Moore, 1989); learner-self; learner-community (Burnham & Walden, 1997); instructor-community; instructor-content (Crawford, 2000); instructor-interface (Crawford, 2000); and, instructor-self (Crawford, 2000). Each aspect of interactive activities focus upon enhancing the learning environment, so as to enhance the learning objectives.

Some everyday electronic interactivities that can encourage student mediation include

- Surfing the Internet
- Webboard chatrooms
- List-servs and weblogs (BLOGs)
- Instant messaging
- See You, See Me (CUSEE) technologies
- Streamed videos
- Web phone conferences
- Net meetings
- Emerging technologies

The first two interactivities are already frequently used in e-course websites. List-servs and weblogs are also frequently included in e-courses. On the other hand, streamed video is live or downloadable taped video, but it still has significant bandwidth requirements that may prove too large for most university servers. If the streaming is available or posted on an off-site webserver (and there are a number of companies that provide this service), streaming could prove more viable. The next two interactivities are relatively new and may or may not be available through the universities offering the webcourses, but are available in fairly inexpensive versions. (More will be discussed about net conferencing in the next section of this paper).

There are even shareware versions of net meeting and webphone, but there may be online time charges by the independent service providers (ISPs) for some of these-type of services. The CUSEE technologies require the software installed to run the technology on the computer, a small "eye" camera is set up on the computer and sends out the live transmission and one on every computer receiving the transmission.

One specific environment through which to emphasize instructional technologies and interactive activities within the learning environment is through netconferencing. Net conferencing offers the ability to enhance the eLearning environment through the appropriate and successful instructional design of the learning environment, through the possible integration of net conferencing components. Such net conferencing components include other electronic interactivities, those of instant messaging, group conference call listings, web phones, whiteboards, access to relational databases, and similar environments through which to enhance the learning objectives.

With the Internet, and ever newer technology, "the unceasing relocation of information in time and space (have changed)...the co-ordinates of time and space have vanished" (Stevenson, 1995, p.106). This "simultaneous" relocation of information is generating a more internationally based public sphere that exchanges information across the boundaries of nations, hierarchies, and will, ultimately create a new culture of communication and interactivity.

### **Leap Frog from Face-to-Face to eLearning**

The leap between face-to-face learning environments and eLearning interactive activities are simplified through the integration of net conferencing components, but there are still other eLearning components that work well too, but perhaps work better in combination with several technologies. Each aspect integrated into the netconferencing tools groups offers the learner, through the expertise of the instructional designer and instructor, a bridge through which to build an understanding of the learning that is to occur. The enhancement of the eLearning environment, with the focus upon learning objectives, is merely bridged so as to support the learner's conceptual framework of understanding. Other technologies, such as electronic chats, white boards, list-servs and e-mails can be effective to a certain degree, depending on the technological and psychological sophistication level of the learners.

Research up to the present indicates there is no significant difference in the learning of students who use e-Learning from those in brick and mortar traditional learning environments (Blackwood & Trent, 1968; Bonk, Kirkley, Hara, Dennen, 2001; Davis, 2001; Dillon & Gabbard, 1998; Institute for Higher Education Policy, 2000; Moore & Kearsley, 1995; Phipps, R., & Merisotis, J., 1999; Russell, 1999). The reality, however, is that e-Learning

can be much more challenging initially without some kind of a “bridge” that links what students already know with what they need to know (Crawford, 2001; Gannon-Cook, 1998; Vygotsky, 1935, 1962, 1978, 1981; Wertsch, 1985).

In viewing best practices, bridging to link students’ existent knowledge with what they need to know can be done using a variety of the tools discussed in this paper, that is, representational, mental tools, and technological tools. The former, mental tools, are more inherent, but still need to be thoughtfully planned and interjected not only at the beginning of the instruction, but throughout the module, course, or e-book. The latter, technological tools, require in-depth planning to be sure the tools fit with the sponsoring institution’s existent technological architecture, and to be sure the tools also fit the subject matter, the philosophical values and delivery styles of the department or organization offering the instruction. The technological tools also have to consistently reflect the messages the subject matter is designed to convey, with the mental tools interspersed throughout the technology, using the representational language, metaphors, inscriptions that imbue the course and university’s messages. The technological tools also have to be designed to be truly interactive, utilizing a variation of mediation tools, such as the interactivities referenced in this paper.

## Conclusion

The newer technologies have been referenced in this paper that can affect communication and learning in e-Learning. One possibility within the interactive activity realm is netmeeting, an electronic tool that could offer inexpensive mediation that could be tried and “tooled” without jeopardizing existent eLearning environments. But there are exciting possibilities within the eLearning environments with combinations of eLearning tools and the incorporation of semiotic, symbolic, tools as well, that may offer even greater potential for learners. It is this aspect that prompted Aristotle to say, after praising Euripides

at the expense of Aeschylus: ‘The greatest thing by far is to be a master of metaphor’... The great sort-crossers from Pythagoras through Plato, Descartes, and Newton to Einstein have changed our attitudes to the facts. How have they done this? ... (through metaphor). They accommodate the feature of attitude-shift... an effective metaphor acts as a screen through which we look at the world; or it filters the facts, suppressing some and emphasizing others. It brings forward aspects that might not be seen at all through another medium. (Poetics, 1459, cited in Turbayne, 1970, p.21)

The old-fashioned “crayons” of the mind, such as metaphors, pictures and other symbolic representations, can also have a profound affect on learners, if we choose to utilize them in a careful design for e-Learning.

Enhancements within the eLearning environment support the learner’s focus upon knowledge and conceptual frameworks of understanding. A linkage between electronic interactive activities and semiotic mediation is the focus of this discussion and one that needs to remain “inside the lines” of instructional design.

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