The Culturally Situated Process of Knowledge Production in a Virtual Community: A case of hypertext[1] analysis from a university's ClassWeb discussion boards

Sunghee Shin
Teachers College, Columbia University

Eun Kyeong Cho
Teachers College, Columbia University

Introduction

> Technology, not as a collection of devices, but as a disinterested, scientifically based process of management system, provided a framework for "thinking about" the identification and solution to a predefined problem. Behind the mask of neutrality, disinterest, and a modernist notion of "truth," an ideology of control and a consciousness of process earmarked the development of western thinking (Muffoletto, 2001, p.1).

With the advent of the Internet era, the use of online educational technology has risen significantly. Increasingly, higher education institutions have incorporated online (or supplemental) courseware such as discussion boards as part of their education delivery system. Technology in education has become an important tool for knowledge production. Along with the growing interest in the use of computer technology for knowledge production, research interest on the use of technology in education has also been growing. Research on educational technology has mainly focused on how technology facilitates knowledge acquisition efficiently, as if there is no question about what knowledge is or how it becomes so, and as if the major concern is knowledge delivery. For example, researchers often examine how student learning can be facilitated by using research-based and pedagogically sound Web-packaged courseware (Ammerlaan, 2002; Farmer, 2002).

Yet, there is an alternative view on the use of technology in education. Critical postmodern researchers urge us to "challenge the ideological assumptions that inform the interpretation of their experiences" (Kincheloe & McLaren, 1998). Further, critical research leads us to focus on the injustice of a society and asks us to put more effort on empowering individuals who have been marginalized. By closely examining the everyday life experience, we may gain critical insights into the ways in which power works and the process by which knowledge is certified (Foucault, 1980). From a critical perspective, we looked at the experience of students not in terms of how technology can be an effective tool for student learning, but in relation to how technology privileges or marginalizes students in the process of knowledge production.

Through a Critical Lens

In order to facilitate the use of technology such as ClassWeb, most schools with online learning systems distribute a guide for course instructors about how to operate such a system effectively (Table 1). In ClassWeb, a course instructor may launch a discussion board with a particular class or project in mind. For him, there may be a certain

Table 1. A Guideline for Operating ClassWeb Discussion Board

Moderating the Discussion Board

The presence of the instructor and the TA are critical for the success of the discussion board. Students will often adjust their online activities to the instructor's level of involvement. It is a good idea to visit the discussion board a couple of times per week to read and contribute to the discussion.

Posing questions in the discussion board and replying to student comments is the primary means of involvement for most professors. However, you may wish to enlist the students to act as discussion board moderators, posing the questions for discussion or leading a discussion. You may then add your thoughts to the ongoing student led discussion.

Some useful tips regarding "Netiquette"

- Try to keep your replies posted in the discussion forum brief.
- Focus on one subject per reply and follow the threads.
- If you introduce a new thread, please make sure you use pertinent subject titles.
- Be aware of copyright issues. Make sure you cite all quotes, references, and sources.
- If you are using images, animation, etc. from the Web, make sure you read the disclaimer.
- For more information, go to http://www.utsystem.edu/OGC/- IntellectualProperty/ccmcguid.htm
- Be professional and careful in all your online interactions (discussion forum and chat).
- Be aware that humorous remarks or irony may be misinterpreted as criticism due to the lack of cues (facial expressions, tone of voice) found in face-to-face conversation. You may want to use emoticons such as :o, or ;-) to indicate that you are being humorous.

(The above "netiquette' guidelines were adapted from Palloff, R.M. & Pratt, K. (1999). Building learning communities in cyberspace: Effective strategies for the online classroom. San Francisco: Jossey-Bass Publishers)

Source: Teachers College, Columbia University Website

framework for what should be learned as a result of the discussion on ClassWeb. Registered students may be asked to read and write about given topics on the discussion board as part of the course requirement. In the process, ClassWeb may be used as a tool to realize the instructor's course goals and allow students to maximize their course experience.

However, the importance of the socio-cultural approach (Vygotsky, 1978) to teaching and learning has prompted educators to consider ways in which people share common concerns for education and interact with each other as a venue of education (i.e., a learning community). Thus, ClassWeb discussion boards may be considered not only as a tool for learning, but also as a virtual community. This virtual community is "a new territory in which people are linked by common interests, values, goals, and professional skills, but do not necessarily occupy the same time zone or geographical space" (McKenna, 1998). Every community, as a social gathering place, has its own culture. Fiske (1998) states:

> Culture is the social circulation of meanings, pleasures, and values, and the cultural order that results are inextricably connected with the social order within which it circulates. Culture may secure the social order and help to hold it in place, or it may destabilize it and work toward changing it, but it is never either

> neutral or detached. The social circulation of meanings is always a maelstrom, full of conflicting currents, whirlpools, and eddies (p. 367).

In a similar vein, the definition of the ClassWeb discussion board user or hypertext writer depends upon the way he is positioned within the social order. Located within the educational technology system, the user is a part of the technology; located within the socio-cultural system, the user is an agent or a site of acculturation or socialization.

What, then, is the culture of an online learning community? How do students perceive the experience? How does the experience socialize students? How is knowledge produced or constructed in the process? A major concern of research on online communities has been how to make students work efficiently and collaboratively for knowledge production. Yet, the cultural aspects of that interaction with knowledge production in the virtual community have not been extensively researched. Further, there is a paucity of research on technology and education from critical perspectives.

Getting into the Scene

Considering student participation in the ClassWeb as an intentional social action in a site of knowledge production, we examined how students perceive and participate in the process of knowledge production in the virtual community and how the ClassWeb experience may help or hinder students' participation in the community. Under the premise that locating the hypertexts as data should be inclusive of the multiple contexts that surround the hypertexts, we investigated if and how students' perceptions about and participation in the virtual community are situated in real world contexts.

We looked at the ClassWeb discussion boards of four courses offered by a graduate school of education from Fall 2001 to Spring 2003. All four courses were off-line classes with supplemental online activities. Of the observations of the four courses, the source of the data presented in this study is drawn from the two courses that explicitly required students' weekly participation in the discussion boards. We analyzed the hypertexts posted on the ClassWeb boards of those two courses to identify what was behind the texts, and which students were using the ClassWeb to share their experiences. One of the two courses showed active student participation on the discussion board. We sent out a broadcast e-mail to all 45 students registered in the course requesting their participation in the study. From the respondents, we interviewed 10 students. They were six female non-native English speakers, three male native English speakers, and one female native English speaker. Texts posted on the ClassWeb discussion boards were analyzed not in terms of the content, but in relation to how they were situated, located or dislocated within the contexts of this cyber community.

Text Analysis: A Window to Examining the Process of Knowledge Production

In search of meanings - obscure, multiple, speculative and unfixed - that might lie in the hypertexts, we first needed to amalgamate new methods of analysis that properly grasped the ways in which hypertexts are located within hyper-contexts rather than in a self-contained space of writing. The first notable phenomenon was the fact that hypertext situates texts within a field of other texts (Landow, 1992)[2]. Other factors that influenced the culture of this online community were the rules and customs that reside behind the scenes of cyber interactions whether they are new inventions or the ones that

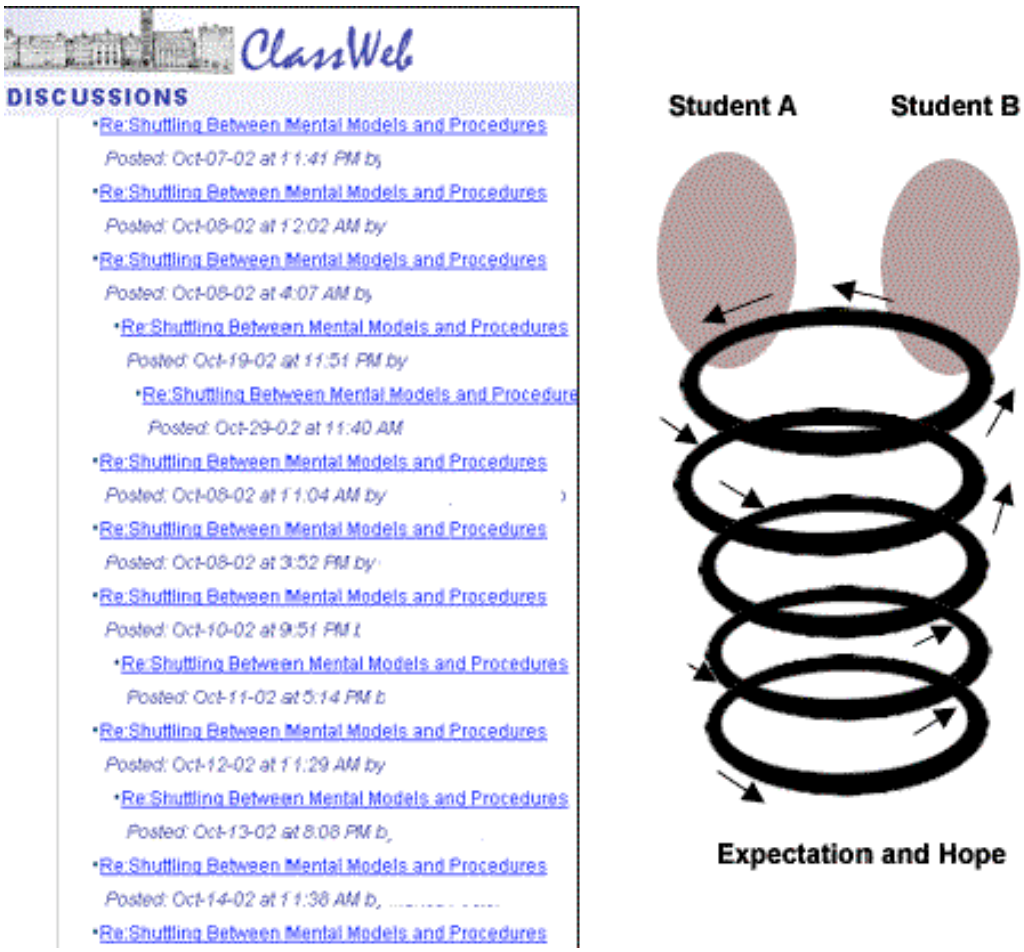
are carried over from conventional classroom settings. If they do not reside within the scope of students' cognitive awareness, then they should be sought in the level of collective sub-consciousness. From the observations of ClassWeb and interviews with the students, two major themes were identified: (1) abandoned opportunities of students as knowledge producers, and (2) second orality[3] only as a second thought.

Abandoned opportunities of students as knowledge producers

Virtual community participation is an intentional social action (Bagozzi & Dholakia, 2002). We found that students were conscious of and concerned about where in the stream of discussion one should place a text. In other words, they were aware of the fact that placing a text in electronically linked space would change its "spatial and temporal relationship to other texts" (Landow, 1992). As Figure 1 shows, one's action of locating a text changes the stream of discussion, and this instant outcome of posting is one of the factors that encourages student participation.

The kinds of active interaction shown in Figure 1 were observed in the threads at the beginning of a semester. One of the students who preferred to talk via ClassWeb acknowledged it as "a sphere of idea sharing and brainstorming. It is a main channel for

Figure 1. The Stream of Active Discussion made by Student Postings

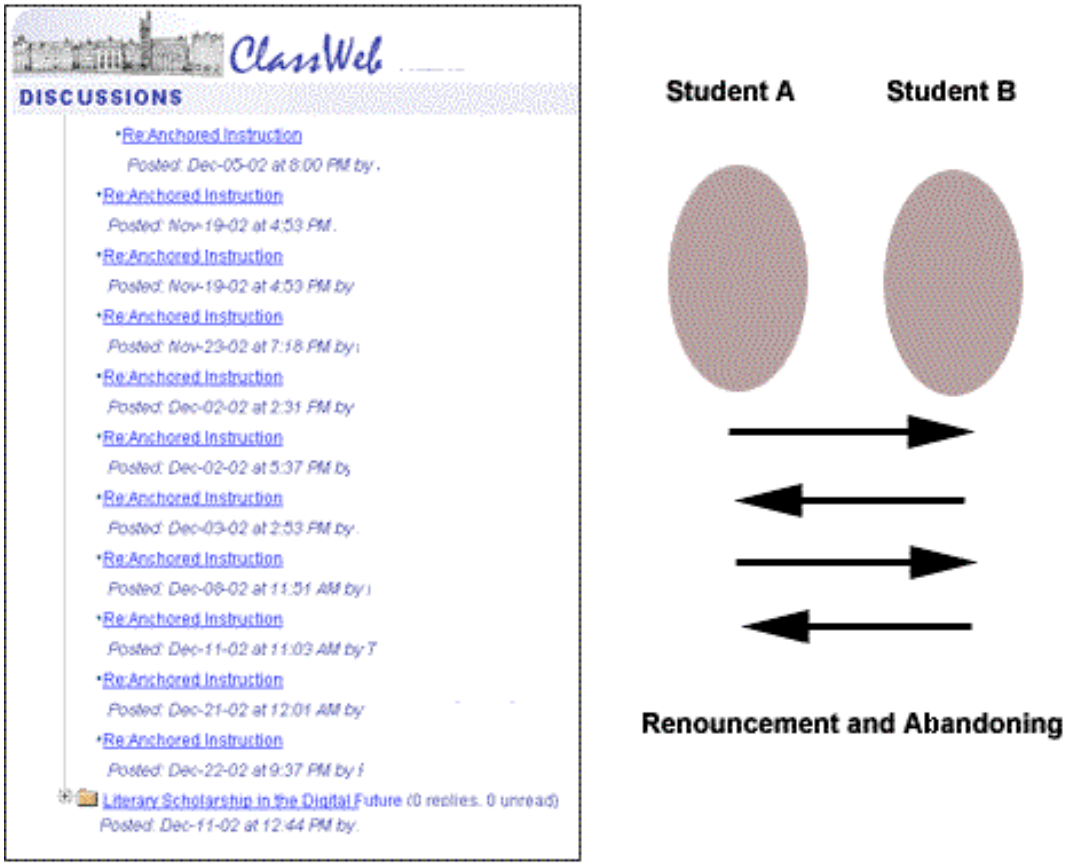


me… I feel good about sharing ideas with others." It is a channel for self-expression as well as a collaborative process of knowledge production. Whenever one "inserts" a text within a networked discussion board, one witnesses how the text becomes a part of a complex dialogue. In some cases, the text is made upon the observations of other students' postings. As one student explained:

> I was one of the last persons who posted… I always started my work by reading all the contents from each student… In some way, I tried to incorporate every seemingly good component from each person's writing into my own writing.

As an autonomous writer becomes part of the complex network, however, a separation anxiety becomes a fear that forces one to adhere to the system. The ways in which students perceived ClassWeb as a system - the only sustainable knowledge production system - created a fear such as "If there is no response posted after mine, it is a failure." One student confessed that he stopped posting when he saw no one responded to his additional online comments. Some felt their ideas were "ignored" and "lost interest" in posting activity. We could see an example of a sudden stop in the flow of discussion in Figure 2.

Figure 2. The Stream of Discussion Without Active Interaction



These kinds of lines postings with no interaction were observed in the threads during the end of a semester. It is not an end that the initiator intended, but an end forced by the result of other students' lack of responses. There is "an end" unlike the expression frequently used in cyberspace discourse - "no beginning and end." Most of the students who saw the failure of creating a discussion stream expressed hatred toward the discussion board and no more hope for sustainable knowledge that supposedly came from it. One said that when he "didn't find it (ClassWeb discussion board) helpful," he "abandoned [it]."

What comes after "abandoning" the source for knowledge production is the renouncement of the expectation that they had when they first entered the land of knowledge. Thus, ClassWeb does not sustain the process of knowledge production any more, but rather becomes a system that delivers knowledge to learners (Muffoletto, 2001). Then, ClassWeb becomes a resource center where they can "pick up readings and assignments" as one of the students, who stopped using discussion board, said. Many students said the ClassWeb use was disappointing but some remained. One said "[I] had to post something regularly because it was part of class requirements." As a result, the learner is not an active participant any more, but instead, becomes a passive respondent to and receiver of the knowledge. Thus, the use of technology in this context seems to be turning "from an opportunity to an imperative" (Boody, 2001). When students start to perceive ClassWeb as a delivery system, they become "receivers" of "messages" sent by "senders." This is the passivity of consumers rather than the activity of critical thinkers. Instrumental rationality of skill drilling will flourish again in this context. In light of how Foucault (1980) describes the text with power and status relations, we can witness that the dynamic relations between students and ClassWeb that constantly shift, depend on students' change of perception towards ClassWeb - from a knowledge production community to a delivery system. Thus, ClassWeb as a new status of system relates students with ideological assumptions that they should remain online to survive, which is to be credited or graded. Freedom of access, in this context, becomes a means and an end to their academic accomplishments. Students are allowed to use the freedom of access to enter into the knowledge production system, but this freedom is imposed upon the students by a system not chosen by the students.

Second orality only as a second thought

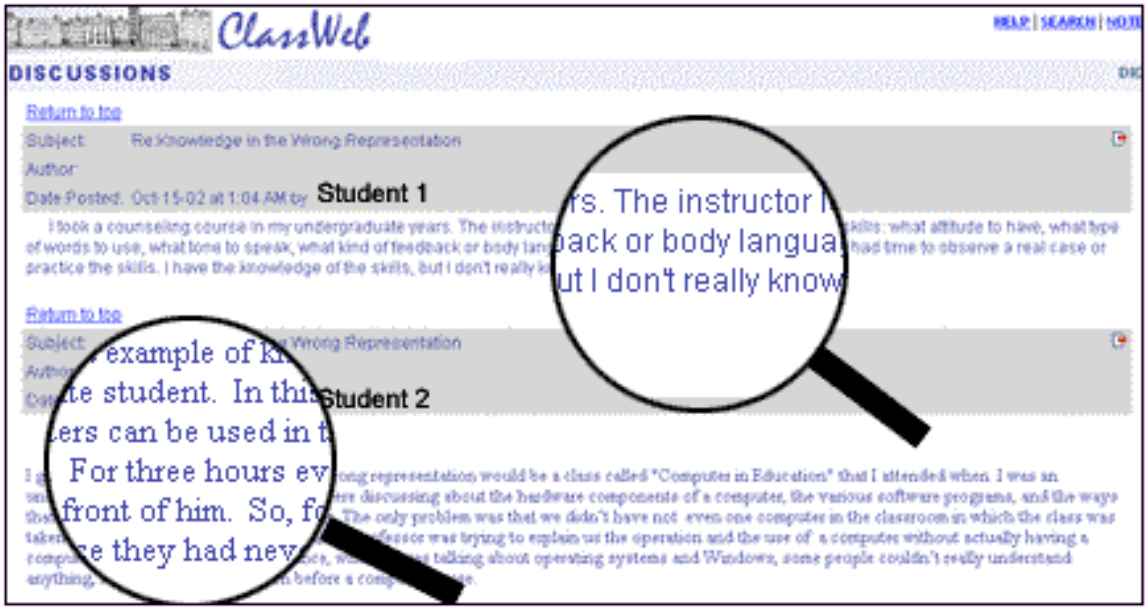
Although the hypertexts are conceived as a "secondary orality," in that it resembles the preliterate orality, students still tend to perceive it as a conventional writing (Ong, 1982). As stressed by many scholars, the strength of hypertext in inspiring unconventional students is that it enables them to choose their own times and paths to read and write beyond spatial or temporal proximity of communicants. Many interviewees admitted that the ClassWeb was very helpful in that it allowed them time for organizing their thoughts before posting. In contradiction to the claims about casual writing style of hypertext that promotes active discussions, we found that students still perceived the writing and posting activity as closely related to normal writing. Hypertext blurs the boundaries between reader and writer, and we would expect that ClassWeb would benefit this phenomenon in the collaborative process of knowledge production. We have found, however, that the students who are less confident in English are alienated from both writing and reading in the community of knowledge building.

These frustrations were commonly found among the students for whom English is a second language. One non-native student said, "I tend to ramble when I write. And some of my classmates write very well, but at great length." The community that does not sustain the weak in the knowledge building process deprives them of the joy of reading from them, too. One stated, "Reading the large amounts of text is quite discouraging." In the cyber community, knowledge is distributed through networks; therefore, deprivation of reading results in deprivation of knowledge. Thus, the culture of integration could hardly be found among self-contained individuals who were never involved in discussions.

Some students explained how they prepare their postings. They write in advance using a notepad or MS Word program, and then copy and paste what they write as text on discussion boards. This process could be observed when we looked at the postings with different fonts that indicated that the texts were copied from a different program (Figure 3).

Some students said they wrote their postings in a separate file and transferred the content to the discussion boards. One of the students stated the reason why she went through such a process was because she could "improve [her] argument, and present [her] ideas clearly to others." This process exemplifies the fear of students who were less confident in writing in English when they wanted to participate through the discussion board. They did not seem to benefit the spontaneity of the second orality in web discussion boards. Some could argue that, in comparison with a conventional classroom setting, students may feel less anxiety writing online because of the opportunity to edit their responses before sharing them publicly. While this may be true, in order to share their writing with others in the communitystudents have to spend much longer time and more effort in preparing the content and writing than their native speaker counterparts.

Figure 3. The Font Change as an Evidence of Text Movement



By spending more of their time and energy at the desk just for preparing what to post, they may have less time to participate in real discussions happening in the online discussion boards. Thus, the dialogues on ClassWeb were still missing the inclusion of voices of a group of students who felt less confident in expressing their ideas both in oral and written languages.

The lengthy and non-oral style texts posted by this group of students seem to be the result of their conscious awareness of being watched by other students as well as the instructor. Knowing that the number of postings could be easily counted by either instructors or by teaching assistants, students tried to accomplish the goal of posting a good amount of messages. The ClassWeb allowed the instructor to select options such as whether to allow students to change their postings once they were uploaded. If the instructor did not select the change option, students could not go back to their own postings and change them. This experience of being controlled and watched again intensified the students' perception of participating on the discussion board as a confinement within the ClassWeb, since they were aware of others watching their participation. Critical perspectives have raised an issue of "how educational technology became a technology of control." In the ClassWeb, there is an architectural logic, which enables power to operate by means of the spatial design itself, "the disciplinary gaze" that Foucault coined more than two decades ago.

Conclusion

A virtual community influences its participants towards compliance, internalization, and social identity (Bagozzi & Dholakia, 2002). In this study, we problematized normative and universal claims that technology in education is just an effective tool for learning. With a critical perspective, we looked at how knowledge is produced in online discussion boards and how students perceive their experiences in this setting. The ClassWeb discussion experience may have hindered the active participation of a group of students, including those whose first language is not English.

We saw that students remained "consumers" as opposed to "producers of the text" when they were dislocated from the streams of discussion. Even in the moment of being de-centered in the community of knowledge production, they become centered on the system in which ideology imbues people with sets of beliefs and practices. They were required to post under every new thread at least twice per week although real dialogue never evolved. They would make sure that each posting was ready and properly edited beforehand so that it looked like it contained a sustainable point, although they did not sustain communication from the discussion.

When the opportunity turned into an imperative, those who suffered in the virtual community were the ones who typically suffered in conventional classroom settings. The liberation from conventional writing can only be possible when the beauty of collaborative learning in online learning is no longer beautified. As Popkewitz (1984) asserts:

> The goal of critical science is to demystify the patterns of knowledge and social conditions that restrict our practical activities…The way in which we think,

> argue and reason about social affairs has implications for the scope and boundaries placed upon social affairs (Popkewitz, 1984, p. 45).

Critical views on the process of knowledge production in an online learning space have implications for the development of international and comparative education. Considering technology in education as an effective and powerful tool for teaching and learning, there have been attempts to utilize online technology for global education. If we optimistically accept current practices as natural, necessary, or inevitable, the hidden power dynamics or the technological gaze that may reside in the online learning community will be maintained the way it has been. Critical perspective asks us to re-examine what we have taken for granted. Before accepting and facilitating the notion that online educational technology is a useful tool for global education, there should be more critical research on the culturally situated process of knowledge production in this international society of learning.

A critical approach will allow us to re-examine what the network of influencing factors is on the process of being the user or the writer in an online community. It will also legitimize the knowledge of the students, promoting their awareness of user cognition and facilitating the analysis of the process of knowledge production. Yet, the paucity of critical approaches about online leaning has raised more questions than answers. More research should be done to provide evidence beyond simple anecdotes.

Notes

1. Hypertext is a term coined by Theodore H. Nelson in the 1960s. Nelson (1981) explains the term as following: "By hypertext, I mean non-sequential writing-text that branches and allows choices to the reader, best read at an interactive screen. As popularity conceived, this is a series of text chunks connected by links which offer the reader different pathways (Literacy Machines, 0/2)." Roland Barthes (1974) describes the hypertext as an ideal textuality that is similar to characteristics of hypertext today. He says, "In this ideal text, the networks are many and interact, without any one of them being able to surpass the rest . . . it has no beginning . . . none of which can be authoritatively declared to be the main one…" Similar to Barthes, for David Bolter (1991), "a communications network is … a hypertext in which no one has control, no one has substantial responsibility (Writing Space)." Despite some commonalities in defining attempts, the definitional concept of hypertext is still fluid.

2. Landow (1992) explained how hypertext locates texts within other texts in his attempt to illuminate different textualities between traditional writing and hypertext writing. To do this, he used Ong's (1982) findings such as "writing and printing produce the effect of discrete, self-contained utterance" by "isolating thought on a written surface, detached from any interlocutor…" (p. 132). He asserted that hypertext destroys the physical isolation of the text in that it allows a reader to place a text within a network of other texts, forcing it to exist as a part of complex dialogue. As a result, hypertext linking has changed the limits of individual text.

3. Walter. J. Ong (1982) argues in his book, Orality and Literacy that the computer has brought us into an age of "secondary orality" that has "striking resemblances" to preliterate orality "in its participatory mystic, its fostering of a communal sense, its concentration on the present moment" (p. 136). Unlike primary orality that promotes spontaneity because the analytic reflectiveness implemented by writing is unavailable, secondary orality promotes spontaneity because through analytic reflection, we have decided that spontaneity is a good thing.

References

Ammerlaan, T. (2002, August 14-17). *www.WorldWideWriting.com: Developing a multi-lingual process-oriented feedback programme*. Paper presented at the Annual Conference of the European Association for Computer Assisted Language Learning, Jyvaskyla, Finland.

Bagozzi, R. P., & Dholakia, U. M. (2002). Intentional social action in virtual communities. *Journal of Interactive Marketing*, 16(2), 2.

Boody, R. M. (2001). On the relationship of education and Technology. In R. Muffoletto (Ed.), *Education and technology: Critical and reflective practices.* Cresskill, NJ: Hampton Press.

Farmer, L. S. J. (2002). *Seven ways to BlackBoard*. Paper presented at the 68th IFLA council and general conference, Glasgow.

Fiske, J. (1998). Audiencing: Cultural practice and cultural studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The landscape of qualitative research* (pp. 359-378). Thousand Oaks, CA: Sage Publications.

Foucault, M. (1980). Power/knowledge: Selected interviews and other writings. In C. Gordon (Ed.), *Power/knowledge: Selected interviews and other writings*. New York: Pantheon.

Kincheloe, J. L., & McLaren, P. L. (1998). Rethinking critical theory and qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The landscape of qualitative research: Theories and issues* (pp. 260-299). Thousand Oaks, California: Sage Publications.

Muffoletto, R. (2001). Introduction. In R. Muffoletto (Ed.), *Education and technology: Critical and reflective practices* (pp. 1-4). Cresskill, NJ: Hampton Press.

Landow, G. P. (1992). *Hypertext 2.0: The convergence of contemporary critical theory and technology.* Baltimore: Johns Hopkins University Press.

McKenna, B. (1998). Virtual community. *On-line and CD-Rom Review,* 22(6), 399-402.

Ong, W. J. (1982). *Orality and literacy: The technologizing of the word*. London: Meth.

Popkewitz, T. S. (1984). *Paradigm and ideology in educational research: The social functions of the intellectual,* (pp. 31-58). London: The Falmer Press.

Vygotsky, S. L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge: Harvard University Press.