

CHAPTER THREE: IMPLEMENTING A CRITICAL THEORY OF TECHNOLOGY
PEDAGOGY IN LITERACY EDUCATION

Critical theories and technology have an interrelated history. During the mid-1800s, Karl Marx believed the capitalist mode of production capable of tremendous growth because the capitalist could, and had an incentive to, reinvest in new technologies. Marx considered the capitalist class to be the most revolutionary in history, because it constantly revolutionized the means of production through newer technologies. He suggested that over time, capitalists would invest more and more in new technologies, and less and less in labor. Since Marx believed that surplus value appropriated from labor is the source of profits, he concluded that the rate of profit would fall even as the economy grew. When the rate of profits fell below a certain point, the result would be a recession or depression in which certain sectors of the economy would collapse. Marx understood that during such a crisis the price of labor would also fall, and eventually make possible the investment in new technologies and the growth of new sectors of the economy.

Marx believed this cycle of growth, collapse, and growth would be punctuated by increasingly severe crises. Moreover, he believed that the long-term consequence of this process was necessarily the empowerment of the capitalist class and the impoverishment of the proletariat. Finally, Marx believed that were the proletariat to seize the means of production, they would encourage social relations that would benefit everyone equally, and a system of production less vulnerable to periodic crises.

Stemming from a Marxist outlook on society, Marcuse writes about the positive potentials of rationality, science, and technology in general. He believes that technology has the potential to free people from repressive economies, though this potential is not often realized (Daley 1983). According to Herbert Marcuse, technology is not value-free.

Technology as such neither means domination, nor liberation, nor neutrality. He sees liberation as a social process which needs a certain level of development of the productive forces, but which can only be established socially and during the course of social struggles. Marcuse says that the liberating aspects of technology are not part of technological processes as such; they presuppose social changes that also refer to the fundamental economic institutions and relationships. If post-capitalist relationships could be established, Marcuse argues, certain technologies could be used in order to reduce necessary social labor to a minimum and to give a maximum of freedom and self-determination to individuals. Thus, Marcuse contends for a critical theory of technology in relation to societal functioning.

Unlike Marcuse, Habermas criticizes technology directly. His assertions reflect the assessments of several theorists on the topic, especially those struggling with the query of the autonomous nature of technology (Winner 1977). For Habermas, modernity does not reveal being but human activity in a new and purer light. In modern society, the truth of technical action, as objectivating and success-oriented, is immediately accessible both practically and theoretically. Habermas argues that the somewhat independent advancement of technology and science in modern society can be seen as an autonomous variable on which economic growth is dependent. Therefore, the development of society is viewed as “determined by the logic of scientific-technical progress” (105).

Moreover, Habermas denounces the hopes of a whole generation of social thinkers, including Marcuse, whose implicit ideal is the restoration of harmony of man and nature. He attacks the very idea of a new science and technology as a romantic myth; the ideal of a technology based on communion with nature applies the model of human

communication to a domain where only instrumental relations are possible. Habermas follows the anthropologist Gehlen, for whom technological development supplements the human body and mind with one device after another. Thus, technology is a generic project, an endeavor of the human species as a whole, not of a particular historical epoch like class society or of a particular class in society.

Progressing from the more general arguments critical theorists support or condemn regarding technology and its effects on society, these theorists also assess the relationships of various sorts of technology to schooling and learning. Critical theorists are interested not only in the obvious hardware and software of educational technology but also in technology as technique, bureaucracy, and rationalization of the living world. For instance, Habermas says that rationalization has created educational systems that rely less on the normative mandates of the church or the family (147). By this, he proposes that our government has constructed educational systems based on new technologies that inhibit learners from reaching levels of maturity that foster communicative, democratic, or responsible learning (Young 23). The government has rationalized new educational technologies as entirely beneficial due to their novelty and advancement in the realm of technology in general, without determining how these technologies could be implemented in education to facilitate expressive, equitable, and conscientious student learning.

McLaren, in Life in Schools, addresses the topic of “Technologizing Learning” when he concludes that in listening to experts who would have us reduce students to computer printouts by encouraging them to develop mechanistic cognitive styles, we perpetuate social inequality. In such circumstances, “what we are left with is an

emphasis on practical and technical forms of knowledge as opposed to ... transformative knowledge” (220). For example, in looking at the knowledge and skills the Ontario ESL / ELD (English as a Second Language / English Literacy Development) curriculum expects students to demonstrate, there are many components which refer to information recall, and form and mechanics skills levels, but I think there are expectations which could be used for knowledge-production and for transformative ends. For instance, students in ELD Level 4 are expected to “participate in discussions about social and political documents that affect how our society works (i.e., the Canadian Charter of Rights and Freedoms, the Ontario Human Rights Code, district school board race relations policies)” (MET 63). Students are also expected to “participate in discussions about media perspectives on social and cultural issues (i.e., newspaper and television selection and presentation of facts, images, and opinions related to race, gender, and age)” (MET 63). These two examples indicate a curriculum that goes beyond the banking model of education, and has transformative potential (Friere 1998). An important factor is the teacher, and how the teacher envisions his / her role within the ESL / ELD classroom. In meeting these curriculum expectations, an educator could concentrate on the facts without being critical, or he / she could lead the students in asking “why?” and “how?” questions, and in using their own lives as a jumping off point for the discussion.

To stray from McLaren for a moment, Giroux implements Habermas’ ideas of human interests to speak about technocratic rationalism, arguing that schools and teaching are governed by “the technical imperatives of rational engineering” (1981,10). Giroux critiques the following assumptions of a technical model of curriculum:

(a) Theory in the curriculum field should operate in the interests of law-like propositions that are empirically testable. (b) The natural sciences provide the proper model of explanation for the concepts and techniques of curriculum theory, design, and evaluation. (c) Knowledge should be objective and capable of being investigated and described in neutral fashion. (d) Statements of value are to be separated from facts and modes of inquiry that can and ought to be objective.

(1988,13)

This emphasis on objective, law-like, valueless knowledge encourages people to ignore important dimensions of schooling. Giroux proposes, “both intentionality and questions regarding the ethical and political nature of schools have been either ignored or dealt with reductively” (1981, 10). As McLaren puts it, “Teachers often emphasize classroom management procedures, efficiency, and ‘how-to-do’ techniques that ultimately ignore an important question: ‘Why is knowledge being taught in the first place?’” (1994, 177).

To resist these problems, Giroux advocates democratic practices, critical citizenship, and intellectual teachers (1994). McLaren says:

As teachers we need to collectively demythologize the infallibility of educational programmers and so-called experts, who often do nothing more than zealously impose their epistemological assumptions on unassuming teachers (1994, 219).

By this, he proposes the need for educators to acknowledge that experts may not always know what is best for education, and to empower themselves to create and advocate for the most beneficial pedagogy for student learning.

Like other critical theorists, those concerned with educational technology are not always solely negative in their perception of technology. Just as Marcuse believes that

media can be used to enlighten and emancipate (even if they are not often used in these ways), and just as Giroux urges a hopeful “language of possibility,” critical theorists in educational technology can be positive. For example, Ellsworth uses a form of critical pedagogy “that sees a special potential role for media in facilitating liberatory education” (11).

Critical theories of educational technologies strive to eradicate issues stemming from conventional stances toward technology in literacy education. Kellner advocates the critical theory of education as one that:

seeks to reconstruct education not to fulfill the agenda of capital and the high-tech industries, but to radically democratize education in order to advance the goals of progressive educators like Dewey, Friere, and Illich in cultivating learning that will promote the development of individuality, citizenship and community, social justice, and the strengthening of democratic participation in all modes of life.

(2003)

We must question traditional notions toward technology in literacy education in order to develop democratic technological literacy pedagogy, thus ensuring a more equitable existence for our children and future generations of literacy learning.

The technological revolution poses tremendous challenges to educators to rethink their basic tenets, to deploy the emergent technologies in creative and productive ways, and to restructure education to respond constructively and progressively to the technological and social changes in society (Kellner 2003). The current educational restructuring movement to include technology has site-based, shared decision-making at its core. With newly acquired autonomy comes new responsibilities. Teachers, local

schools, and school districts are accountable to all stakeholders for the policies, programs, and practices they implement. It is not enough for teachers to merely make decisions; they will be called upon to make informed decisions, decisions that are data-driven. Therefore, it is necessary for teachers to be much more deliberate in documenting and evaluating their efforts. Action research is one means to that end (Johnson 1993).

Action research is deliberate, solution-oriented investigation that is group or personally owned and conducted. It is characterized by spiraling cycles of problem identification, systematic data collection, reflection, analysis, data-driven action, and finally, problem redefinition. The linking of the terms “action” and “research” highlights the essential features of this method: trying out ideas in practice as a means of increasing knowledge about and / or improving curriculum, teaching, and learning (Johnson 1993). Research is designed, conducted, and implemented by teachers themselves to improve teaching in their own classrooms, sometimes becoming a staff development project in which teachers establish expertise in curriculum development and reflective teaching.

The prevailing focus of teacher research is to expand the teacher’s role as inquirer about teaching and learning through systematic classroom research. The approach is naturalistic, using participant-observation techniques of ethnographic research, is generally collaborative, and includes characteristics of case study methodology (Johnson 1993). The research team provides support and a forum for sharing questions, concerns, and results. Teachers advise each other and comment on the progress of individual efforts. Engaging in collaborative action research helps eliminate the isolation that has long characterized teaching, as it promotes professional dialogue and thus, creates a more professional culture in schools.

As teachers engage in action research they are increasing their understanding of the educational process. What they are learning will have great impact on what happens in classrooms, schools, and districts in the future. The future directions of staff development programs, teacher preparation curricula, as well as school improvement initiatives, will be impacted by the things teachers learn through the critical inquiry and rigorous examination of their own practice and their school programs that action research requires (Johnson 1993).

In one action research-oriented study of email partnerships between elementary and university students, organized around the concept of peer tutoring, teachers found that the elementary school students couldn't wait to hear back from their university partners and always wrote back immediately (Luke 1997). The more frequent the responses, the longer and more detailed each email post became. The elementary students enjoyed the experience because they discovered how to use a computer while also engaging in "real life" communication with adult students who took the children's writing seriously. In response to one child's message: "I wrote a book called The 4 People football team and it's a real story," a university email partner commented: "I learned that children don't need to learn to read before they learn to write. I now know that it is a simultaneous process" (Luke 63). What this illustrates is that using CMC (Computer Mediated Communication) as a teaching / learning device doesn't just have to rest on the teacher's shoulders. There are many pedagogical resources available – including university students in this case – that can be used in peer tutoring contexts in order to benefit all those involved. But it also illustrates one important principle which applies to beginning reader / writers of all ages: the simultaneity and fluid overlap of reading and

writing development which is best encouraged and nurtured with genuinely interesting and diverse (material and human) resources (Luke 1997). As the email partnership shows, the use of computers as a different medium of classroom communication which enabled different ways of writing (keyboarding), and the use of community resources such as university students, served as a powerful motivational device and learning tool for the elementary school students.

Another possible study in action research could focus on how CMC minimizes the difficulties many students experience in language and literacy learning that is exclusively print and book based, and augmented by static pictures, illustrations, or pre-recorded audio tapes. The basis for researching this topic is that there are major advantages in using CMC in language training. Once you start to put image and voice together you can give students very good examples of speech along with images associated with the words, which is a very effective method of language education. It would be interesting to see the results of literacy learning using CMC, to determine if the difficulties students experience in more traditional literacy education might be minimized.

Focusing specifically on educators, Selfe asserts in Technology and Literacy in the Twenty-First Century: The Importance of Paying Attention:

by paying attention to the (often) unfamiliar subject of technology – in sustained and critical ways, and from our own perspective as humanists – we may learn some important lessons about how to go about making change in literacy instruction. Moreover, in the specific lessons we learn within the context of our own professional and personal expertise, we may be able to locate personal beginning points for initiating change.

By this, Selfe explains that when educators think critically about technology, they develop methods for the improvement of literacy instruction; educators may also discover new skills in themselves to benefit their lives personally and professionally. There is a growing body of evidence of the positive personal and professional effects that engaging in research has on the practitioner (Johnson 1993). Research provides teachers with the opportunity to gain knowledge and skill in research methods and applications, and to become more aware of the options and possibilities for change. Teachers participating in action research become more critical and reflective about their own practice. Moreover, teachers engaging in research attend more carefully to their own methods, their perceptions and understandings, and their whole approach to the teaching process (Johnson 1993). For instance, if a teacher researches how email partnerships – modern pen pals – affect literacy learning, he / she will be methodical in the design of the study, diligent in data collection, and conscientious of various effects of the study on students. The teacher will then use the accumulated information from personal observations and student input to determine if this activity is conducive to literacy acquisition and, from this information, alter the curriculum accordingly.

Shifting from teacher research to practical applications of research, integrating technology into all subjects will help alleviate the dilemma of trying to fit technology into an already full curriculum (Baker 2000). Critically integrating technology would allow educators to fulfill their responsibility to foster student's literacy development while concomitantly helping students become proficient with tool-based technologies (Baker 2000).

Becoming a critical pedagogist holds tremendous prospects for engaging learners in meaningful education. Critical pedagogists should base their philosophy on McLaren's, acknowledging:

Knowledge is relevant only when it begins with the experiences students bring with them from the surrounding culture; it is critical only when these experiences are shown to sometimes be problematic (i.e., racist, sexist); and it is transformative only when students begin to use the knowledge to help empower others, including individuals in the surrounding community.

(1994, 197)

McLaren stresses the importance of relating education to real life experiences. Students are more likely to learn when the information makes a connection in their lives. The information becomes critical when students understand possible associated problems – a prime example being any form of prejudice that may be witnessed or experienced.

A pertinent activity to engage students in understanding prejudice could be visiting virtual libraries where students could research the term, perhaps locating snippets of video relating to prejudice, or even links to artwork depicting prejudice in its various forms. Unlike the traditional library, the virtual library is open 24 hours a day, 365 days a year. You don't have to have a library card to get into the best libraries in the world at any time of day. Students might also visit the Arab Region Virtual Museum (<http://www.unesco.org>) to learn more about prejudice. The U.S. Holocaust Memorial Museum (<http://www.ushmm.org/>), for example, would enable students to gain knowledge about prejudice, how it affected the past, and how prejudice continues to influence society today.

Finally, knowledge enables change when students use their own knowledge to promote the self-actualization of others in society. Thus, educators should not incorporate technology in literacy education for the sake of technology itself. Instead, literacy educators should implement technology to empower their students – enabling them to become critically aware of what they learn and how that knowledge may be applied in their lives. In other words, teachers should incorporate a critical theory of technology to ensure their students will receive an education appropriate for the creation of a more democratic and equitable world in which to live.

To involve teachers and students in a critical theory of literacy education, Kellner asserts the need for “interactive and participatory forms of education such as developing convivial list-serves, the collective building of Web sites, on-line discussion, and collaborative computer-based research projects” (para. 30). Setting students up with email partners, for example, who could email students in another city or state, is one simple way to encourage reading and writing in a critical theory of technology pedagogy. Many elementary schools have used first year college English students as email partners with elementary school students to ‘talk’ about the books they are reading in and out of school (Curtiss & Curtiss 1995). What may start off as a weekly exchange about a favorite book could quickly turn into daily correspondences.

Kellner continues his argument for restructuring the educational system to incorporate the cultivation of literacy regarding “limitations of Internet-based knowledge and the need for resources” (para. 30). Books, various print-based learning materials, and multimedia Web-based materials should not be viewed as oppositional, but supplementary to one another (Kellner 2003). Simply put, all modes of educational

materials should be balanced equally in literacy instruction; one form should not take precedence over another less-preferred form of learning material.

Literacy educators should be developing greater amounts of non-print forms of critical scholarship. As some educators may continue to prefer print-material for literacy education, a balance of print and non-print learning materials should be attained. Kellner suggests that due to the myriad of learning situations – such as locale, age, and the “needs and interests of students and teachers” – the balance between pedagogy, print-materials, and non-print materials will vary (para. 32). The essence of multiple literacies is for “diverse and multimodal forms of culture” to blend together to create new subjectivities, ones that strive for justice, equity, well-balanced social relations, and “transformed relations with the natural world” (para. 33).

Using the above suggestions, we can begin to envisage possibilities for a critical literacy pedagogy built around the use and implementation of new technologies. A critical literacy pedagogy involves developing multiple literacies and critically analyzing, dissecting, and engaging a multiplicity of cultural forms, some of which are the products of new technologies and require developing new literacies to engage the new cultural forms and media. A critical theory of technology pedagogy involves not just reading, but interacting: clicking from one field to another on web sites of CD-ROMs; capturing, saving, and downloading material (Kellner 2003).

Imagine that we are conducting a group project on, for instance, a hypothetical class trip to the Philippines. Filipino students in the class (if applicable) will probably be able to provide some local information on their home communities, but we would also want the class to visit the best libraries in the world to get more detailed and general

information. In addition, we would recommend that a group of students find their way to the Philippines Tourist Office web site for information on roads, weather, shopping, and vaccination requirements. Another group should visit some airline web sites to get flight schedule and air fare information, and those who want to backpack should probably consult web sites for guides on backpacking hints. As a problem-based learning project, our hypothetical class trip to the Philippines requires that students work in collaboration, organize and delegate various information-gathering tasks among themselves, use a range of Internet resources and downloadable materials, and finally prepare a group presentation: perhaps a little booklet or series of brochures augmented by posters, talks, videos, and various displays. Each of these tasks requires oral communication, reading and writing, keyboarding and Internet (and CD-ROM) searching skills, and cooperative teamwork skills. Moreover, students are engaged in interdisciplinary learning, connecting content areas related to the general topic of 'A Trip to the Philippines'. A virtual class vacation can be as diverse as teachers and students can imagine.

In addition to the linear cognitive skills needed for traditional reading of print material, a critical theory of technology pedagogy requires the ability to read hypertexts that are often multidimensional - requiring the connecting of images, graphics, texts, and sometimes audio-visual material. The pedagogy also involves making connections between the complex and multilayered cyberworld and its connection with the real world. For instance, how we speak, dress, gesture, listen to music, and use texts from print to video provide the symbolic tools through which we interact and interpret one another and the world. Our ongoing symbolic interactions and activity within a community, or what we refer to as a social world, not only result in our implicit acquisition of the symbolic

tools needed to keep the community going, but also construct the ideology of possible identities, relationships, and values realized within that community. Hypermedia authoring for critical literacy pushes this one layer further when students create hypermedia texts to explicitly reflect on how symbolic interactions construct community and ideology.

The first pedagogical frame for hypermedia construction asks students to look into how words, symbols, and actions construct social worlds as systems. Briefly, an inquiry-oriented curriculum involves six recursive inquiry strategies that are involved in hypermedia productions (Bruce 2001).

1. Immersing: entering into the activities of a social world, experiencing the social world as a participant, or observing a social world. Students may use hypermedia software to collect and link images and texts (i.e., those of adolescent females scanned from teen magazines and ads).

2. Identifying: defining concerns, issues, and dilemmas that arise in a social world, or from conflict across multiple social worlds. In identifying various intertextual patterns evident in the images of adolescent females, students identify the issue of how these magazines portray females to achieve the purposes of the beauty-industry system.

3. Contextualizing: explaining how the activities, symbols, and texts used in one or more social worlds produce the components of a social world – purposes, roles, rules, beliefs, and traditions operating in a system. By pulling images and texts out of their original context and recontextualizing them in a new hypermedia context, students become more aware of how the magazine images of adolescent females reflect an

ideology of commercialism and consumerism in which their possible identities, relationships, and values are positioned.

4. Representing: using symbolic tools to create a text that represents a lived social world or responds to a represented social world. Students use hypermedia to represent their own beliefs or to explain how texts are used to represent worlds to achieve certain purposes. They juxtapose pictures and video from their own lives that resist and oppose other commercialized images of females.

5. Critiquing: analyzing how a representation of a social world privileges particular values and beliefs; analyzing how particular literacy practices within a social world promote certain meanings while marginalizing other possibilities. In hypermedia projects this is most often accomplished by setting contrasting texts in juxtaposition to create a critique of opposing values and identities.

6. Transforming: revising one's meanings for the components of a social world, changing one's actions and words within a social world to construct more desirable identities, relationships, and values. Through hypermedia authoring, students both identify and experience how symbolic interactions and texts construct the ideologies of their social worlds, thus generating the power within them to use words, symbols, texts, and actions with others in alternative ways that seek to transform problematic social worlds (Bruce 2001).

Moreover, as Carmen Luke reminds us: "Since all meaning is related situationally – that is, connected and cross-referenced to other media and genres, and to related meanings in other cultural contexts – a critical literacy relies on broad notions of intertextuality" (14). Thus, students must learn to read multimedia forms that are

themselves overlapping and interrelated, switching from text to graphics to video to audio, decoding in turn sight, sound, and text. For example, students at State College High School used the software Adobe Premiere to author QuickTime movies from still images, video clips, and music for a school project (<http://www.ed.psu/k-12/socialworlds>). By juxtaposing a series of images set to specific types of music and song lyrics, the final hypermedia product focused on a value, identity, or relationship significant within a social world. One student used scenes from the movie *Days of Thunder* (1990; Tony Scott, Director) and snippets from the song “The Distance” by Cake to represent how a romantic interest will drive an athlete to perform better than he / she has before and strive to be the best; on the other hand, if the athlete is in a troubled relationship, performance will suffer notably. While there is much to the ideology underlying competitive sports left unexamined in this hypermedia project, the intent to reveal an underlying value, and the analytical processes engaged to construct the hypermedia representation of this value, initiated the practice of a critical theory of technology pedagogy.

In addition, a critical theory of technology pedagogy should be contextual, requiring schematizing the background and power relations of cultural forms (including analysis of the political economy of the media and technology, of how corporate organizations control production and dissemination, and how oppositional and alternative media and uses are possible), as well as the context and power relations of the specific media use in question (i.e., the differences between computer use for research, data organization, email, playing games, etc) (Kellner 2003). Informal exchanges among technology users (whether teens playing a video game or office workers in networked

systems) create social networks and relations through the sharing of information and, often, insider knowledge about how to beat a game or how to bypass software protocols, or retrieve information at work for private use without getting caught. On another level, workplace and educational training in new technological skills is based on and generates knowledge about appropriate curricula, pedagogy, and evaluation. This knowledge is also located in various policy documents which themselves are amalgams of various disciplinary and governmental discourses. In short, there are many social networks and levels of knowledge in which our understandings and uses of technology are embedded.

A critical theory of technology pedagogy also envisages new modes of collaborative work on research projects or web sites, new forms of student / teacher participation and interaction, and new pedagogical uses for the new technologies which may often appear exotic in the present, but which will become increasingly commonplace in the future and will force a rethinking of education (Kellner 2003). For example, in response to E. Annie Proulx's The Shipping News, a class of central Pennsylvania undergraduates in English formed small groups and built web sites in response to the novel (<http://www.ed.psu.edu/k12/shippingnews>). These students responded to more traditional library aspects such as character, theme, and style. In web pages about the main character, Quoyle, students connected his circumstances, motivations, and development to other characters in other stories, movies, and music. Other students responded to themes of death and romance, connecting other multimedia texts that offered similar perspectives. Many students responded to the language used in the novel and created sites to focus on knots and other stylistic elements, making connections to similar texts. However, while these students generated an interesting intertextual array of

texts for interpreting the novel, their juxtapositions did not seem to intentionally attempt to expose problematic representations or contest underlying ideologies between the text and their own lives.

In contrast, responding to the same novel, a group of university students in Newfoundland, Canada, constructed a hypermedia web site (<http://www.lord.edu.mun.ca/educ4142/>) that represented a more critical interrogation of the text (Hammett & Barrell 1999). On the basis of instruction about ideological stances evoked by texts, many of the students resisted the portrayals of their home, Newfoundland, in the novel and, working through this response, created web sites full of images and text that read against depictions in the novel. The hypermedia representational tools provided an opportunity for students to explore their own identities and communities, and to juxtapose images and texts based in ideologies that contested those attributed to Proulx through her text.

One reason that the Newfoundland students adopted a more critical stance than the Pennsylvania students was that they framed their representing and contextualizing in terms of the issue of Proulx's misrepresentation of their own cultural world. When critical literacy practices emerge from authoring hypermedia in response to literature, the exposure, exploration, and juxtaposition of one's own life experiences to offer contrasting meanings is always present (Myers, Hammett, & McKillop 1998). In this pedagogical frame, students author hypermedia to construct knowledge about the world or alternative perspectives about different phenomena.

The challenge for education today is thus to promote a critical theory of technology pedagogy in literacy learning to empower students to use the new

technologies to enhance their lives and to create a better culture and society based on respect for multicultural differences and aiming at fuller democratic participation of individuals and groups largely excluded from wealth and power in the previous modern society. This pedagogy would involve creation of a more egalitarian and democratic society in which more individuals and groups were empowered to participate. The great danger facing us, of course, is that the new technologies will increase the current inequalities based on class, gender, and racial divisions. So far, the privileged groups have had more direct and immediate access to the new technologies. It is therefore a challenge of education today to provide access to the new technologies and to the literacies needed for competence in order to overcome some of the divisions and inequalities that have plagued contemporary society throughout the modern age (Kellner 2003).

A critical theory of technology pedagogy that I envisage would argue that it is not a question of choosing between print literacy or multimedia literacy, or between the traditional curriculum or a new curriculum; it is rather a matter of using both old and new – preserving the best from traditional education, enhancing emphasis on print literacy (i.e., PAIDEIA, reader’s workshop, book conferences), as well as developing new literacies to engage the new technologies (i.e., authoring hypermedia, email partnerships, research in virtual libraries). Cyberlife is just one dimension of experience and we still need to learn to interact in the “real world” of school, jobs, relationships, and politics. Students today need to learn to interact in many dimensions of social reality and to gain a multiplicity of forms of literacy and skills that will enable them to create identities,

relationships, and communities that will nurture and develop a full spectrum of potentialities and satisfy a wide array of needs.

Our lives are more multidimensional than ever and part of this postmodern era is learning to live in a variety of social environments and to adapt to intense change and transformation (Kellner 2003). Education too must meet these challenges and both utilize new technologies to promote education and to devise strategies in which new technologies can be deployed to create a more democratic and egalitarian multicultural society.

If learning, teaching, and knowledge are culture bound, ever-changing, and morally imbued, then we must admit that the critical theory of technology will probably not exist in its present form for much longer. Life changes. Current contentiousness and discussions about critical theories, learning, teaching, and knowledge indicate this changeability (Anyon 1994, Cherryholmes 1994). Other theoretical views will eclipse critical theory; perhaps, as Winkler suggests, we already have entered an era of “post-theory” where “the day of high theory is dead” (1993).

Yet, whatever critical theory becomes, it will remain with us because people will always be subject to and, so, interested in oppression. Critical theory will always have the potential to open educational technologists to deeply important questions of self and community, the character of technology, freedom, and environmental sustenance. For instance, what is implied is that technology may not always be oppressive or harmful, but because it is human, it is bound to be harmful sometimes. Thus, critical theory enables humans to become aware of the inequalities and injustices of society through education,

and with that knowledge, empowers us to create change for the enhancement of a more egalitarian and democratic culture.

Most importantly, perhaps, we need to continually attempt to understand why we use technologies in education. McLaren ponders the critical question of the importance of technology, determining that when we can consistently have honest and open conversations (but not finished ones) with students about why we need to become technologically literate, we will be on the road to more meaningful education (1994).

Technology is an object, one that is socially defined and organized. Educators are in an instrumental position to influence what emerges in literacy education. Selfe advocates becoming responsible for technology, stating:

My purpose is to convince teachers of English studies...that we must turn our attention to technology and its general relationship to literacy education. On the specific project to expand technological literacy, we must bring to bear the collective strength of our profession and the broad range of intellectual skills we can muster as a diverse set of individuals. The price we pay for ignoring this situation is the clear and shameful recognition that we have failed students, failed as humanists, and failed to establish an ethical foundation for future educational efforts in this country.

(5)

We should embrace the inherent possibilities in technology, and implement appropriate literacy learning pedagogies based on our sense of the potential for education. These changes, inevitably altering the entire educational system, are complex and will involve the interaction of diverse social affairs – we must work together as a society to

accomplish change. We can, however, develop future literacy learning over time, successfully forming essential features of it by being critical and acting to instill a critical theory of technology pedagogy in literacy education.