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ABSTRACT

This paper addresses questions concerning the role of education and technology in a fair and equitable global political and economic system. The education and information professions have worked to design effective learning environments and produce various formats for the delivery of instructional materials. These presentational formats have tried to offer a believable reconstructed reality, but very seldom has anyone debated the consequences of that reconstructed reality on individual lives. Technology can actually be used in several ways to further that inquiry. It can serve as a medium for discourse, as a way to access new information and new ways of thinking about information, and even, through virtual reality, as a simulator of experience. All curriculum materials, delivery systems, and learning environments not only generate content but also refer to ways of thinking and knowing. It would seem that some answers to problems of educational equity could be gained from critical theory and the accompanying recognition of educational technology itself as a social construction. (Contains 13 references.) (BEW)

SCHOOLS AND TECHNOLOGY IN A DEMOCRATIC SOCIETY: EQUITY AND SOCIAL JUSTICE

by
Robert Muffoletto

Questions need to be addressed concerning the role of education and technology in a fair and equitable global political and economic system. As individuals, and as a profession, involved in the research, development, production, and dissemination of educational experiences for children and adults, we need to consider what we have created and will create in light of social justice and democratic principals.

Our history in educational technology is full of attempts to design and produce effective learning environments. (I realize it is not our history but *a* history that has evolved out of conflicts and contradictions representing various interests. There are many histories, many voices yet to be heard.) We, as a profession, have consumed various learning theories and have produced various formats for the delivery of educational and instructional materials. Our collective purpose has been to increase the effectiveness of teaching materials and the efficiency of the learning process. At the same time, our purpose has been an ideological one. The materials we have and will produce speak of us and others in ways which construct them as we wish to see them. Technology is not a neutral conduit, but an ideological apparatus. It speaks of the world as *we* have created it.

Our field is grounded in logical positivism, capitalism, and a 19th and 20th century notion of progress and classical realism. Technology, both as machine and as system, was and is linked with modernism and progress. Reality, especially social reality, and the stories told about it by experts, is understood to exist outside the individual and has for the most part gone unquestioned and unrecognized by researchers in our field. Beneath all of this lies the ideology of the machine and the expert (Muffoletto, 1993).

Our field has strived to create through various presentational formats *a* reconstructed reality. Most of the debate in these attempts has centered on the veracity of the experience; does it feel real, does it reflect reality, is it efficient, and is it effective in its delivery. There has been little debate on the consequences of those strivings for a reconstructed reality on the lives of real people and their culture. With the recent developments in virtual reality and multimedia hardware and software we must begin and continue our attempts to address the psychological, social, and political implications and effects of what *we* do as perceived experts, as educational technologists and media educators. No longer can we afford to claim the neutrality of a modernist tradition or the non-historical consciousness which accompanies a positivist discourse towards reality and experience. As educators, researchers, and developers of learning experiences we must find avenues and entry points for debates and practices that argue and provide for spaces that support and maintain democracy and social justice. The first step I believe is to recognize ourselves for what we are: a social, historical, and epistemological construction. The second step is to define what we mean by democracy and social justice. The third is to position our definitions in practice.

Technology as a Medium for Discourse

Technology is more than a tool, it is a medium which effects how we think and

interact with others and machines (Rheingold, 1991). It is a form which not only controls and limits discourse but determines the nature of the content as well (Postman, 1992). Technology is more than access to information and learning experiences. Technology determines the nature of that information as well as our understanding of it. As a medium of experience (discourse), technology effects our consciousness, our visions, and our expectations. The *wetware* of a modernist technology constructs the individual as a subject (Berger & Luckmann, 1966; Muffoletto, 1991). The technological medium is more than a mind manager and a reality simulator, it is a consciousness generator --an ideological horizon line.

Information

If technology is to provide us with access to information, there are a number of issues that must be considered and addressed. Simply providing access to information is not enough in a social context where historically access has been limited to the wealth, gender, and race of the individual or community. Access to information must also include equity in access to ways of *thinking* about information. If information is to be used to empower people within the democratic tradition, then educational experiences must provide a means for equal access to ways of thinking as well as valuing different ways of thinking.

To have information and not know what to do with it, is as serious problem as not having information at all (of course this begs the question about the nature of information, epistemology, legitimization). Individuals who historically have been positioned on the margins of power and knowledge because of their culture, their economic class, their gender, their race, or their religion, may have been given equal access to information (even in limited ways), but not ways of knowing (thinking). For example, the cultural ways of making sense in the United States has been limited to primarily one cultural and economic framework (white, middle-class, male, and European). How one thinks about the world and one's self in it determines the rationale for understanding why things are the way they are (common sense), and not why reality is thought about in that manner.

How one thinks about the world as well as self, is how one has been told to act and think in relationship to self and others. Having information, but not divergent ways of thinking, maintains the individual and the community in a powerless relationship to those who do. Having access to information may create a false consciousness resulting in less real power than before.

Simulations as Experience

Virtual reality, as a technology of experience, poses a number of questions. First and most basic, we must consider what the relationship is between a *virtual* reality and something we call reality. Is it good enough to be concerned with only the veracity of the experience and its correspondence to what is believed to be out there? (The physical and social sciences can be separated here, but questions concerning how we know reality and truth are essential to both paradigms.) In doing so we must offer up for analysis the manner in which we came to think about what is out there. We tend to forget that our understanding of what we think is out there is a result of the tools we use to explore it, the language we use to construct it, and the beliefs and context used to understand it and give it meaning (Goodman, 1978; Rorty, 1991). Change the tool, the language, or the system, and reality differs. As individuals concerned with the creation of simulations, other worlds, we can not forget that we exist within a social reality, a virtual realty of sorts. We must also recognize that through discourse management, our constructed reality has become reified and objectified.

Second, if virtual reality is understood in terms of simulations, looks, feels, and sounds-alike, virtual reality

must bc understood as a discourse. As a discourse virtual reality must be analyzed as any other discourse? Borrowing from Cherryholmes (1988) we would need to question virtual reality by asking: Who is controlling the discourse (reality)?; Who is allowed to speak and listen?; What is being said?; Who benefits from what is being said?; as well as, What is not being spoken?

Any simulation or virtual reality must be considered from two different perspectives. On one side we must consider who is constructing the world to be experienced by users (students, teachers, workers, infonauts). Notions concerning hypertext environments, interactive video, and virtual reality include authors and readers, guides and travellers, navigators and explorers. No technological environment, as a system, is authorless. Every author, every programming production team, every navigator, holds a world view, an ideological perspective, a consciousness about self and others. On the other side, we must consider the social, psychological, and political effects of a constructed world on the readers of the virtual text.

Social Learning

How *we* come to be as subjects, as social beings, is a result of experiencing constructed texts (texts is used here in a post-modernist manner) and meanings (Belsey, 1980). All texts are hegemonic and are part of a larger discourse encoded with meanings, values, and ideological perspectives on others and self. How and what we learn about a social world is the result of experiences with various discourses about that world. In doing so, we either reproduce dominate meanings and ways of knowing or offer oppositional and alternative discourses (Hall, Hobson, & Willis,1980). In either case, individuals as members of interpretive communities (Fish, 1980) understand a reality to be as it is, to be real and truthful, because of their experiences with various formative and informative discourses (Ellsworth & Whatley, 1990). Questions referring to equity and social justice emerge out of a discourse on social learning, power and control, benefit, and history.

School Reform and Technology: Towards Social Inquiry and Justice

Curriculum materials, delivery systems, and learning environments may be understood as social texts, representational in nature, always overtly referring to something else, while covertly referring to themselves as a formative medium. The form and content of learning environments not only speak to methods and content, but also refer to ways of thinking and knowing. Thinking about all learning environments, methodologies, and contents as representational, as ideological representations, adds another dimension to our thinking about schooling, technology, and change.

Change always refers to difference. In education as well as business, change is considered as a reply to some identified problem. How these problems are identified is as important to understand as what the problem is reported as being. Needs assessments, goal development, and vision statements refer to a history, the present, and to a future. Futures are normally related to notions of progress.

What the problem is, is determined by who (who being not an individual but a community) is asking. If problems and solutions are defined in terms of efficiency, outcomes, and management, the problems and solutions will be of one nature. If problems are contextualized in a discourse of democracy and social justice, efficiency, outcomes, and management may be part of the solution but to *what and how* they refer to will be different. As education in the United States considers why and how it must change, technology as a medium which effects knowing, institutional and individual relationships, as well as a sense of self and others, must be better understood within a discourse of democratic ideals. The problem needs to be redefined. (Again, the language has to

be problematic when we consider that there is not one education, but many.)

Critical Theory and Educational Technology

Critical theory offers an entry point for unpacking the values, assumptions, and practices of educational technology. From a post-modernist perspective critical theory claims no absolute authorship. It declares its own subjectivity and ideological construction. As a theory working within a post-modernist tradition, those who practice critical theory are concerned with questions of power, control, and epistemology as social constructions with benefits to some and not to others.

A critical theory of educational technology would be concerned with issues of consciousness and epistemology, power and control, institutional and individual relationships (Feenberg, 1991). Questions concerning equity and social justice, and the construction of individuals as subjects within an ideological discourse would be critical to the unpacking and redefinition of the theories and practices of educational technology. A major impact of critical theory on the field of educational technology would be to recognize itself as a social construction with a history of conflicts, struggles, and contradictions. In understanding the social and historical nature of the field, the values and assumptions which are expressed through various discourses would be open for analysis.

Conclusion

Schooling, in reflecting a democratic society, requires a society to be democratic, non-racist, non-sexist, and not class based. In positioning education as a major socializing institution, with a major role in forming the world views and subjectivities of its participants, the products and processes of educational technology do play a major role in how communities of individuals think about others and self. A critical theory position, breaking from the common sense reified world offered by modernist and positivist alike, would need to address issues concerning the function of schooling and a technology of instruction in a democratic society.

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