TOWARD A CRITICAL INSTRUCTIONAL TECHNOLOGY: INSTRUMENTAL RATIONALITY, OBJECTIFICATION, AND PSYCHOLOGISM

by

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ABSTRACT

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Using a multiple-paper format, this dissertation includes three papers. By providing critiques of instrumental rationality, objectification, and psychologism in instructional technology, this study aims to provide a tentative formulation of a *critical instructional technology* that is sensitive to power and ethics.

The first article starts by presenting a theoretical discussion of instrumental rationality in instructional technology (IT). Then, it focuses on how the instrumental view became dominant in the field. The article explores the notion of the designer/technologist as a specific intellectual. It claims that efficiency should not be understood as an economical, instrumental, or technical matter, but an ethical one. It then focuses on potential pathways for advancing the field of educational technology in terms of systems design and userdesign.

The second article presents an overview of Heidegger's genealogy of and critique of modern technology. It then presents a phenomenological discussion on the importance of body (or embodiment) in learning. Some of the political/economical problems regarding mandating teachers to teach a predesigned course of instruction are investigated. It concludes that instructional designers' meaningful technological interventions need to be aligned with approaches to the professional development of teachers—not with the objectification in which the subjectivities, bodies, and faces of teachers and students become irrelevant.

The third article presents a brief genealogy of IT in relation to the influence of psychology. Moreover, it provides a critical and hermeneutical framework for psychology. Then, it discusses some problems of psychologism, focusing on positivism, metaphysics, cultural ecology, and power. IT professionals are encouraged to engage reflectively with the power relations and ethical issues in which they are involved. The article points out a need for looking at psychology more comprehensively (e.g., critical and hermeneutical psychology).

(147 pages)

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CHAPTER I

INTRODUCTION

While there are strong critical traditions in both education and technology studies, critical tradition in the field of instructional technology (IT) inquiring political and ethical issues has consisted of a small number of works by few theorists (e.g., Apple, 1991; Bowers, 1988; Carter, 1999; Hlynka & Belland, 1991; Koetting, 1979; Nichols & Allen-Brown, 1996; Noble, 1998; Nunan, 1983; Streibel, 1993; Voithofer & Foley, 2002; Wilson, 2005; Yeaman, Koetting, & Nichols, 1994). By providing critiques of instrumental rationality, objectification, and psychologism in instructional technology, this study aims to provide a tentative formulation of a *critical instructional technology* that is sensitive to power and ethics.

Broadly defined, *instrumental rationality* is the objective form of action that treats everything (nature or people) simply as a means to an end; the aim of instrumental rationality is to find the most efficient way to reach certain ends and not focus on the value of the end. Embedded in this rationality is the notion of science/technology as a value-neutral activity. In its broad usage, *objectification* refers to the way in which one treats everything (including human beings) as an object, raw material, or resource to be manipulated and (re)used. Along with this broad sense, I use it to refer to the way of teaching that is characterized by *delivery* and *packaging* of learning, in which process teaching is reduced to the transmission of information and courses are transformed into courseware. *Psychologization/psychologism* refers to the way in which psychological issues become centralized in theoretical discussions of instructional design and technology (IDT) and thus critical (including political, philosophic, and societal) issues

have been evacuated from theoretical discussions of IDT. *Critical instructional technology* is herein defined as a form of IT that is sensitive to issues of power and ethics. Using a multiple-paper format, this dissertation includes three papers:

1. Instrumental Rationality in Instructional Technology: Efficiency and Ethics. The article starts by presenting a theoretical discussion of instrumental rationality in IT. Then, it focuses on how the instrumental view became dominant in the field. In this dominant view, instructional technologists are considered engineers aiming to maximize efficiency—understood mostly within economical terms—and maximizing efficiency is considered to be value-neutral. Finally, the article argues that instructional designers should not be conceptualized as mere technical persons, and explores the notion of the designer/technologist as what Foucault (1980) called a *specific intellectual* who deals with ethical-political issues surrounding design. It claims that efficiency should not be understood as an economical, instrumental, or technical matter, but an ethical and political matter. It then focuses on potential pathways for advancing the field of educational technology in terms of systems design and userdesign.

2. Instructional Design, Technology and Objectification. Instructional designers have not paid attention to the metaphysics that has provided the basis for their basic understandings and practices. Metaphysically and historically, we need to pay attention to "how have things come to be this way and what are the alternatives?" In this direction, the article presents an overview of Heidegger's genealogy of and critique of modern technology. It then presents a phenomenological discussion on the importance of body (or embodiment) in learning. It also focuses on the consequences of "packaged education" on the profession of teaching, particularly how teachers are deskilled through

the separation of conception (design) from execution (implementation). Some of the political/economical problems regarding mandating teachers to teach a predesigned course of instruction are investigated. It also presents the instructional design implications of the previous discussions. The source of the problem of objectification of teaching/learning is metaphysical in the sense that the intelligibility (being) of educative knowledge is equated with ready-to-use packages and thus education is reduced to the delivery of information. Thus, the learning relationship between the teacher and the student is reduced to one of coercion. Objectification increases bureaucratic control over teaching process and deskills teachers; teachers are proletarianized. Instructional designers should create resources and structures in which a care relationship and dialogue between students and teachers can take place. Instructional designers' meaningful technological interventions need to be aligned with approaches to the professional development of teachers—not with the objectification in which the subjectivities, bodies, and faces of teachers and students become irrelevant.

3. Psychologism and Instructional Technology. The article presents a brief genealogy of IT in relation to the influence of psychology. It also provides a critical and hermeneutical framework for psychology. It then discusses some problems of psychologism focusing on positivism, metaphysics, cultural ecology, and power. IT professionals are encouraged to engage reflectively with the power-relations and ethical issues in which they are involved. The narrow psychologism in IT produces a kind of systematic blindness regarding cultural, political, and other issues. The article points out a need for looking at psychology more comprehensively (e.g., critical and hermeneutical psychology).

As the topics covered in three articles are interrelated, the concluding chapter summarizes the findings of the three papers and aims to show how they are related to each other and what they can offer to IT scholarship. The conclusion also presents general tenets of *critical instructional technology*. Furthermore, it situates the findings of this study in the context of critical educational studies.

The Significance of the Problem

As a philosophic critique, this study aims to recognize not only what has been done but also what should be done. This study gives prime importance to ethical and political issues, which have largely been ignored in the IT literature. There is a need to look beyond psychologybased learning theories and seek out perspectives from various theory bases, including critical theory. Also, the problems surrounding objectification have not been adequately investigated in instructional design (ID) literature. Apart from its intellectual value, this study has practical significance, as well. Although critical inquiry is considered to be something that does not increase the effectiveness and efficiency of a system or program in practice, such considerations are based on a misconception of critical inquiry. Critical inquiry is constructive in investigating whether the notion efficiency is based on an ethically appropriate understanding of education (and IT). This study is based on the conviction that, without ethical and political considerations of education, a notion of efficiency based on instrumental rationality is devoid of meaning.

Specific Questions of the Study

This study explores three leading questions:

1. What are the problems with instrumental rationality as found in the theories and practices of IT? How have things come to be this way and what are the alternatives?
2. What are the problems with objectification as found in the theories and practices of IT? How have things come to be this way and what are the alternatives?
3. What are the problems of psychologism as found in the theories and practices of IT? How have things come to be this way and what are the alternatives?

The Method

The study aims to synthesize some of the major critical theories in relation to the issues of IT. In order to give a critique of IT, it deals with writings from various disciplines including critical educational studies, critical technology studies, and IT. What it does is to bring together various bits from different texts on various topics. This is probably best captured by the term *bricolage*. The French word *bricoleur* describes a "handyman" who makes use of the tools available to complete a task. The term comes from the works of German sociologist Georg Simmel and French structuralist Claude Lévi-Strauss. The term's usage in this study mainly comes from the work of Denzin and Lincoln (2000), Kincheloe (2001), Kincheloe and Berry (2004), McLaren (2001), and Nelson, Treichler, and Grossberg (1992).

In this study, *bricolage* refers to transdisciplinarity, of which the "field" of cultural studies is an example. Unlike some versions of cultural studies which are antidisciplinary (Nelson et al., 1992), this study is not antidisciplinary at all, though acknowledging that disciplines are open to criticisms. Thus, this study is interdisciplinary, or transdisciplinary. Again, similar to works of cultural studies (Nelson et al.), this study has no guarantee about what questions are important within a given context and how to answer them; accordingly, no methodology or discipline can be privileged or eliminated out of hand. It acknowledges that hermeneutics, Marxism, deconstruction, archeology/genealogy of knowledge, and so forth all can provide important insights and knowledge. Yet, as McLaren (2001) noted, embracing multiple perspectives for the critical bricoleur does not mean that each perspective is to be equally valid. Nelson and colleagues described the methodology of cultural studies "as a bricolage. Its choice of practice, that is, is pragmatic, strategic and self-reflexive" (p. 2). Similar to the works of cultural studies, this study draws on whatever fields are available (pragmatic) to the investigator to produce the knowledge required (strategic) for a particular problem. For instance, in order to provide a critique of psychologism, this study uses postformal psychology, critical psychology, and hermeneutics. Similarly, in discussing instrumental rationality, it draws on critical educational studies and technology studies. Likewise, in providing a critique of objectification, it draws on the work of German philosopher Martin Heidegger, phenomenology, and political economy.

Thus, a *bricoleur* tries to bring multiple sources and forms of knowledge to the investigation. Now, it is important to understand that *bricoleurs* embrace a relational ontology toward the object of the study (Kincheloe & Berry, 2004). In other words, the

entities of the study are not thingsinthemselves, they are embedded in the world, existing in multiple horizons. The researcher also acknowledges that he is situated in his own historicity. Therefore, he abandons some naïve conception of realism or objectivity, focusing instead on the clarification of his position in the web of reality. Theory itself is seen as an artifact, it is impossible to comprehend it without understanding the historical dynamics that have shaped it; theory is not an explanation of the world but rather it is more an explanation of our relation to the world (Kincheloe & Berry). In his speculation on the nature of bricolage, Lévi-Strauss emphasized that a knowledge producer never carries out a simple dialogue with the world, but instead, interacts "with a particular relationship between nature and culture definable in terms of his particular period and civilization and material means at his disposal" (quoted in Kincheloe & Berry, p. 24). Denzin and Lincoln (2000) broadly described the qualitative researcher as a *bricoleur*.

> The qualitative researcher may take on multiple and gendered images: scientist, naturalist field-worker, journalist, social critic, artist, performer, jazz musician, filmmaker, quilt maker, essayist. The many methodological practices of qualitative research may be viewed as soft science, journalism, ethnography, bricolage, quilt making, or montage. The researcher, in turn, may be seen as a *bricoleur*, as a maker of quilts, or, as in filmmaking, a person who assembles images into montages. (p. 4)

The historicization of the research and the researched is an intrinsic aspect of the bricolage (Kincheloe, 2001). For this reason, this study contextualizes and historicizes the topics that are being investigated. Kincheloe and Berry (2004) specifically connected *bricolage* with the genealogy associated with Michel Foucault. Genealogical studies are interested in "social construction of the discipline's knowledge bases, epistemologies, and knowledge-production methodologies" (Kincheloe & Berry, p. 53). As Foucault suggested, the purpose of theorizing is not to answer a question about truth, but rather

about how things could have come to be this way (Foucault, 1980; Bryson & De Castell, 1998). For this reason, this study is interested in the formation of IT and provides historical information related to themes of the study.

Conclusion

This chapter has introduced the themes and concepts of this dissertation. The following chapters present three individual papers that expand on these themes and concepts and provide a more thorough discussion of them. They provide critiques of instrumental rationality, objectification, and psychologism in IT. Each paper has a distinct focus and employs a distinct approach, with each paper aiming to be published separately. While each article in this study presents specific implications for IT, the concluding chapter identifies and presents findings of this study as a whole.

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CHAPTER II

INSTRUMENTAL RATIONALITY IN INSTRUCTIONAL TECHNOLOGY: EFFICIENCY AND ETHICS

The field of instructional technology (IT) is steered by an instrumental rationality (Koetting, 1979; Muffoletto, 2001, 2003; Nichols & Allen-Brown, 1996). Broadly defined, instrumental rationality is the objective form of action that treats everything (nature or people) simply as a means to an end; the aim of instrumental rationality is to find the most efficient way to reach certain ends. Embedded in this rationality is the notion of science/technology as a value-neutral activity. Technical or instrumental rationality is success-oriented as it does not focus on the nature and value of the end (Boody, 2001; Habermas, 1984; Postman, 1996). For example, a technical view of education treats educational provision as a set of means to given ends (Carr & Kemmis, 1986). Educators as such are not expected to ask questions about ethical and political issues related to the goals of education. This critical study will explore the problems of such an understanding as it regards the field of IT in the context of the United States.

By ethical and ethical-political issues, I mean to rephrase the sites of education and instructional design as *sites of obligation* (Readings, 1996). To illustrate, as Nunan (1983) argued, when instructional designers minimize the agency of teachers from the classroom floor by controlling instructional processes, they appeal to "superior" or "scientific" management processes (e.g., Heinich, 1991). Design as such is considered a matter of superiority of technical expertise. I reject such an approach to design and argue that instructional designers should be concerned with whether it is *right* to exert control

on the teacher's work and student's learning. Moreover, design is unavoidably political as there is a power relation between designers and teachers/students in terms of exerting control on the instructional processes.

This critique aims to support the conviction that, without ethical-political considerations of education, a notion of efficiency based on instrumental rationality is devoid of meaning. It starts by presenting a theoretical discussion of instrumental rationality in IT. Then, it focuses on how the instrumental view became dominant in the field, which is often ignored even in critical literature on IT. In order to comprehend the dominancy of instrumental rationality, we need to know the history of why and how this view evolved. In this dominant view, instructional technologists are considered engineers aiming to maximize efficiency—understood mostly within economical terms—and maximizing efficiency is considered to be value-neutral. Such an understanding is indifferent to ethical and political issues embedded in pedagogy. Here I deliberately use the term "pedagogy" instead of education or instruction; to me, pedagogy has clear ethical-political connotations. In other words, there is a social formation in the development of educational ideas as Vygotsky provided a sociological position in his early writings:

> Pedagogics is never and was never politically indifferent, since, willingly or unwillingly, through its own work on the psyche, it has always adopted a particular social pattern, political line, in accordance with the dominant social class that has guided its interests. (quoted in Daniels, 2001, p. 5)

Finally, the article argues that instructional designers should not be conceptualized as mere technical persons, and explores the notion of the designer/technologist as what Foucault (1980) called a *specific intellectual*. I aim to show

that efficiency should not be understood as an economical, instrumental, or technical matter, but an ethical and political matter. I then focus on potential pathways for advancing the field of educational technology, limiting myself to a discussion of systems design and userdesign.

Before presenting my arguments, a few words on my methodology is in order. Bringing various arguments from different disciplines, what I do is probably best captured by the term *bricolage*. The term comes from the works of German sociologist Georg Simmel and French structuralist Claude Lévi-Strauss. The French word *bricoleur* describes a "handyman" who makes use of the tools available to complete a task. My use of the term mainly comes from the work of Denzin and Lincoln (2000), Kincheloe (2001), Kincheloe and Berry (2004), McLaren (2001), Nelson, Treichler, and Grossberg (1992). Briefly, *bricolage* refers to transdisciplinarity, of which the "field" of cultural studies is a nice example. Although different terms have been used, methodologically similar approaches can be found in instructional design and technology literature (Hlynka & Belland, 1991; Nichols & Allen-Brown, 1996; Rose, 2005; Yeaman, Koetting, & Nichols, 1994).

Instrumental Rationality in Instructional Technology

Apple (1991) noted that educational debates are increasingly limited to technical issues; questions of "how to" have replaced questions of "why." Thus, the language of efficiency, production, standards, cost effectiveness, and so forth has begun to push aside concerns for a democratic curriculum, teacher autonomy, and equity. Apple claims that the debates about the role of new technology in schools must not be just about the

technical correctness of what computers can do; rather, the ideological and ethical issues concerning what schools should be about and whose interests they should serve should be put at the core. Accordingly, educational policy issues regarding the place of technology in education should be based on democratic discussion, not based on economic pressure; the discussion of the place of technology in education is also about the kind of society we shall live in, about social and ethical responsibilities in society (Apple).

Similar to Apple, Noble (1998) argued that attention paid to computers and educational technology seemed a luxurious distraction from the real concerns and deeper purposes of public education. Noble (1996) noted that "*Computer-based education is more about using the education market in the service of technological product development than it is about using technology in the service of education.*" (p. 22, italic in original). This is, of course, an indication of the colonization of schooling in the service of the commercial enterprise. To paraphrase what Postman (1996) said in *The End of Education* about educational discussions in the U.S., we instructional technologists are professionals, "consumed by our expertise in how something should be done, afraid or incapable of thinking about why" (p. x). In technical or instrumental understandings, the focus is on increasing the efficiency of an instructional system; in critical understanding, the focus is on ethical and political questions such as *who decides what?* and *who benefits/loses?* (Jamison, 1997).

In *Knowledge and Human Interests*, Habermas (1971) presented his well-known threefold typology of human knowledge. This typology is based on the view that there is a specific connection between knowledge-constitutive cognitive interests and logical-methodological rules:

> The approach of the empirical-analytic sciences incorporates a *technical* cognitive interest; that of the historical-hermeneutics sciences incorporates a *practical* one; and the approach of critically oriented sciences incorporates the *emancipatory* cognitive interest. (p. 308)

Technical refers to the mode of knowledge related to instrumental activity in controlling nature; practical refers to the mode of knowledge related to communicative activity in coordinating action and establishing a mutual understanding between persons; and emancipative refers to the mode of knowledge related to critical examination in achieving freedom from any modes of domination. This typology of Habermas and his other work have been appropriated by many critical educational theorists (see Ewert, 1991).

There have been some instructional technologists who have critically examined the technical cognitive ideology as it affects and dominates the field of IT and who have attempted to orient the fields toward practical and emancipatory human interests (Aoki, 1991; Boyd, 1991; Koetting, 1979; Muffoletto, 2001; Nichols & Allen-Brown, 1996; Streibel, 1993). To illustrate, Streibel claimed that what Heinich (1991) proposed for IT is an instance of technical interest. Heinich showed an enthusiasm toward replacing teachers with instructional technology through its replicability and reliability; his goal is to exert complete control over instruction. As opposed to this technical interest, Streibel argued that instructional designers should entail practical interest. While the basic orientation of technical interest is toward controlling self, other, and environment for external purposes, the orientation of practical interest is toward understanding self, other, and environment. An implication of this re-orientation for IT was described by Streibel (1993) as follows:

> Because right action in a given situation cannot be prescribed but only worked out by the participants, instructional designers will have to create learning resources and learning environments that have some space for teachers and learners to work out their own sense of the good. Hence, instructional designers will have to give up the notion of designing "teacher-proof" instruction and "idiot-proof" learning resources. (p. 159)

In what follows I focus on value-neutrality and efficiency as well as ethics in IT in order to show the pervasiveness of instrumental rationality in the field. As an example of instrumental rationality, I consider problem-based learning.

Value-neutrality and Efficiency

As Kerr (2004) noted, most often instructional technologists assume that ID, like any other technology or tool, is a value-neutral or scientific activity and it can be applied to any possible educational problem:

> The technical and analytic procedures of instructional design ought to be useful in any setting, if correctly interpreted and applied. The iterative and formative processes of instructional development should be similarly applicable with only incidental regard to the particulars of the situation. (p. 130)

Indeed, educational technologists are optimists by training; they are encouraged to see ID as value-free and synonymous with improving welfare. To illustrate, in *Instructional Technology: A Systematic Approach to Education,* Knirk and Gustafson (1986) claimed that the "application of IT to a wide variety of settings provides a powerful tool for improving the welfare of all" (p. vi). As we will see, this optimism is highly visible in even some ethical conceptions of IT.

The value of efficiency has been beyond the question. Through film, radio, television, and computer, educators have persistently quested for how to teach

information efficiently (Cuban, 1986). As B. F. Skinner (1996, p. 211) has put it in the opening of "Teaching Machines" in 1958:

> There are more people in the world than ever before, and a far greater part of them want an education. The demand cannot be met simply by building more schools and training more teachers. Education must become more efficient.

Many have claimed that the principal role of educational technology is to improve the overall efficiency of the teaching/learning process; this focus on efficiency is clear from many well-known definitions of educational technology, such as those of Commission on Instructional Technology in the USA and National Council for Educational Technology for the United Kingdom (Ellington, Percival, & Race, 1993).

Efficiency is most often implicitly understood in economic and technical terms. According to Seels and Richey (1994) the term "efficient utilization"—which was mentioned in the 1963 definition of Association of Educational Communications and Technology (AECT)— has been removed from the 1994 definition of AECT, perhaps, for generating "an emotional response" (p. 16). Nonetheless, the 1994 definition also "assumes that practice in this field is characterized by efficient, economical pursuit of ends" (Seels & Richey, p. 3). According to Seels and Richey, finding cost-beneficial solutions is considered a hallmark that differentiates the professional from the lay person. Reigeluth (1983) claimed that the purpose of design, including instructional design, activity is "to design optimal means to achieve desired ends" (p. 4). This mainstream view entails both instrumentality (i.e., it deals only with means/prescriptions) and efficiency (i.e., "optimal means"). Duffy (2004) noted that instructional technology is often taught "in a way which holds that if you learn the methods and procedures, you will be able to design effective instruction for most situations" (p. 14). Thus, finding the best

course of instruction is considered as technical and mechanical—what designers and teachers do expertly will cause predictable student outcomes. The problem is that, as Cuban (1986) noted, "no persuasive body of evidence exists yet to confirm that [mechanical] belief" (p. 88) and perhaps learning is largely unpredictable.

Winn (1990) also acknowledged that human behavior is unpredictable and indeterminate, the "predictability of human learning, upon which instructional design has always relied, cannot be relied upon" (Winn, 1989, p. 40). Reigeluth (1999) also acknowledged that instructional prescriptions are probabilistic, not mechanical or deterministic. He also acknowledged that values play important roles in selecting models or instructional methods. Likewise, some have refuted the value-neutrality of technology in education. In response to new educational mechanisms which privilege "technocratic consciousness," McLaren (1998) noted:

> Some of the new curriculum technologies have even been "teacher-proofed," which only contributes further to the devaluing and deskilling of teachers by removing them from the decision-making process. As teachers, we need collectively to demythologize the infallibility of educational programmers and so-called experts, who often do nothing more than zealously impose their epistemological assumptions on unassuming teachers under guise of efficiency and procedural smoothness. What we are left with is an emphasis on *practical* and *technical* forms of knowledge as opposed to *productive* or *transformative* knowledge. (p. 213)

McLaren thus rejected the value-neutrality of educational programmers (or instructional technologists). Bowers (1988) has shown how and in what ways computer technology in education should not be considered culturally neutral and carries values (such as consumption as opposed to sustainability) through language. By focusing on educational software that is ecologically destructive and culturally insensitive, Bowers

(2000) argued that computers contribute to the globalization of ecologically destructive cultural patterns. Hlynka (2003) also argued that educational technology is a culturally biased phenomenon and that the prevailing discourse in the field is not universal, but rather a unique U.S. oriented discourse. When educational software is translated for developing countries, this may result in "materials and services inappropriate to the local culture" (McIsaac, 1993, p. 229). A better strategy for IT would be to aim to develop the capacity to build software, instead of giving ready products.

Ethics

In their article "Help: Toward a New Ethics-Centered Paradigm for Instructional Design and Technology," Inouye, Merrill, and Swan (2005) argued that instructional design and technology's (IDT) actual center has been to help learners: because the aspiration to help people by definition is ethical, the central concern of IDT is ethical. This argument sounds positive but is highly problematic. To me, ethics should encourage us to ask whether our actions are right. However, Inouye and colleagues do not even recognize that ethics as advocated by them is in harmony with the dominant instrumental rationality. To be more explicit, it *only* gives an ethical justification of what designers have always been doing! This approach does not encourage reflective or mindful professional practice; it does not propose any change in practice or theory, its point is therapeutic (i.e., it makes the instructional designers feel better). They explicitly state that their proposal dissolves many long-standing anomalies in the field. If ethics is to encourage us to be more mindful in our actions, it is hard to understand what the point of

such an ethics is as it does not really propose any change—except in the designer's self-perception:

> With the adoption of an ethics-centered paradigm, or world-view, IDT practitioners will continue to do many of the same things they are doing, using many of the same skills they now possess, but the meaning of what they do will be enhanced. We can now see our activities under the general rubric of *helping*, rather than just *researching, evaluating, measuring, designing, developing,* or *delivering*. Our ultimate ends can justify, and even hallow, these means. (p. 15)

They do not feel a need to discuss how and why ethical considerations have historically been subordinated to instrumental rationality in the field. Their article shows us that instructional designers are so preoccupied with thinking in terms of instrumental rationality, of means and ends, of which methods will efficiently achieve which goals, that their ethical/moral thinking becomes infected by this model as well. Such corruption is typical of capitalist societies (Eagleton, 2003). Everything in capitalist society must have its purpose: If you act well, then you expect a reward (i.e., acting ethically or well is not a value in itself unless it is rewarded).

Like the ethical considerations of Inouye and colleagues (2005), most of the ethical writings contain an instrumental view. In his "Toward a Conscience: Negative Aspects of Educational Technology," Nichols (1991) argued that beyond most conceptions of ethics in the field of educational technology, which deal predominantly with *how* to insure privacy, ownership, or equality, "we should be asking *if* our current conceptions of educational technology are ethical at all" (p. 134). Once technical rationality pervades educational practice, ethical practices become a secondary concern: "Effectivity rather than honesty is most valued in a performative regime" in education (Ball, 2003, p. 226). In such a performative regime, the actors in educational practice

(including instructional designers) are expected to be "passionate about excellence" and set aside irrelevant or outmoded social and ethical commitments (p. 224).

Problem-based Learning

As an example of instrumental rationality, let me turn to problem-based learning (PBL). One celebrated aim of PBL approaches in the IT literature is to make instruction involve authentic real-world problems or tasks (e.g., Duffy & Cunningham, 1996; Merrill, 2002). PBL in a medical school, for instance, aims to make instructional process similar to real clinical encounters. Although there are great educational possibilities in PBL as it tries to bridge from the classroom to real life, and can be a politically informed pedagogy (e.g., problem-posing education, Freire, 2000), there is a danger in PBL to the extent that PBL aims to accord learning with instrumental goals—euphemistically phrased as real or authentic tasks.

To be more explicit, as authentic PBL seeks to replicate the real situations, it might preserve intact the worldview underlying current practice (Yamada & Maskarinec, 2003). As medicine is reduced to a task-oriented endeavor, efficiency replaces sensibility: query and examine patient in order to determine the diagnosis (p. 227); listening to the patient's illness narrative is inefficient and thus becomes irrelevant. In such a practice, the ends are chosen by those who have power, pragmatically separated from questions of ethics or justice. This point is very important especially for instructional designers when they design materials that contain very specific worldviews. The term *critical skills* has clear connotations of instrumental rationality as it has come "to mean simply applying their skills to whatever unfamiliar situations may be presented to them, rather than

questioning and challenging the premises of those situations" (Bromley, 1998, p. 10). Criticizing the instrumental view, Muffoletto (2003) asked: "Whose world is understood when we produce educational materials that celebrate Columbus Day?" (p. 63). For the most part, instructional designers have failed to deal with such political issues.

How We Have Come Here

Deskilling is the separation of conception from execution (Apple, 1986, 1995). The separation of conception (i.e., goal setting, instructional design, and assessment procedures and criteria) from execution enables management to rationalize and control what is happening in the classroom. In discussing the problem regarding the deskilling of teachers, Shannon (1993) noted that deskilling is a necessary outcome of the rationalization of education—where rationalization "refers to the spread of capitalist logic throughout public and private life over the last 150 years in order to reduce the risks to capital and maximize profits" (p. 9). Indeed, many of the problems we face today with increased technologization can only be understood by referring to this broad (instrumental) rationalization. Let me then say a few words about this broad rationalization before going over its effects in IT.

In the early 20th century and against the disenchantment of the rationalized world, German sociologist Max Weber argued that modern forms of rationality are always connected with the ideas of formality, abstractness, and with calculation; in Weber's opinion, rationality as such destroys all genuine cultural values in the modern world (Gronow, 1988). For Weber, increasing rationality did not lead to more freedom but an "iron cage" of bureaucratic rationality in any sphere of life (law, culture, arts, and so

forth). Similar to Weber, early critical theorists of the Frankfurt School such as Horkheimer, Adorno, and Marcuse have criticized instrumental rationality as they fear that human beings are undergoing a new technological domination. Instrumental rationality/reason was seen as the dominant form of reason within bureaucratic capitalist modernity by Horkheimer and Adorno (2002).

The work of Habermas, another member of the Frankfurt School, is dedicated to saving modernity from this dominating instrumental rationalization (Habermas, 1984, 1989). Using system-theoretic terms, Habermas makes a distinction between system (i.e., media-regulated rational institutions, such as markets and administrations) and the lifeworld (i.e., the sphere of everyday communicative interactions including family life and education). For Habermas, the central pathology of modern societies is the colonization of the lifeworld by the system (Feenberg, 1996; Habermas, 1989). In modernity, communicative rationality has been dominated by instrumental rationality.

Having pointed out the dominancy of instrumental rationalization in modernity, I now turn to a brief historical discussion of how the instrumental view became dominant and how political and ethical concerns were put aside in the field. As Muffoletto (2001) noted the social and historical construction of educational technology is a dialogue that rarely enters into the professional space.

From the beginning of the 20th century, scientific means were employed in education; educators like Bobbitt, Charters, and Thorndike played major roles in the use of scientific methods, a technology, to develop curriculum (Muffoletto, 2001). Callahan (1962) noted how the model of scholar and educator superintendent, such as Horace Mann, had been replaced by business manager or "school executive" in the early 20th

century. In this change, instrumental rationality dominated the decisionmaking process; for instance, business and industrial values have been applied to education and the consequences are "tragic" (Callahan, p. 244) because of little or no consideration of educational values and purposes. According to Callahan, between 1900 and 1930, efficiency became a cult among educational administrators and this business management perspective is still preeminent in the majority of university programs in educational administration (Lutz, 1990). Businesslike efficiency and vocationallyoriented education were seen as critical to preparing students for work in an industrial economy that was then competing with Great Britain and Germany; school reforms made explicit the proposition that education serves a fundamentally economic purpose (Cuban, 2001).

Following World War II, businessmen, politicians, and administrators blamed educators for having weakened the public school system. With the launch of Sputnik and the National Defense Education Act (NDEA) of 1958, military interests played an utmost role in education (Apple, 1995; Lutz, 1990; Muffoletto, 2001). By this time, education had increasingly been directed toward technical concerns; education was becoming "a technology for upbringing" (Carr & Kemmis, 1986, p. 13). Curriculum became very much a technical matter as academics and specialists designed prepackaged teacher-proof instructional materials. Note also the fact that the NDEA provided the equivalent of cash credits to local school districts for the purchase of new packaged curricula to increase efficiency (Apple); this financial incentive facilitated the introduction of this new technology and the greater acceptance of the instrumental view in the schools. Tyler's approach to curriculum, in which curriculum was a means to given ends, became dominant.

Although curriculum reformers in the late 1950s and early 1960s claimed that their goal was intellectual development and the curriculum included the advanced mathematics, physics, and other elements of a disciplinecentered curriculum, the ultimate purpose of the curriculum reform was utilitarian, that is, the cultivation of the knowledge and skills required for work and citizenship in the post-World War world (Franklin & Johnson, in press). A technology of instruction refers to a system for developing and controlling the instructional process (Muffoletto, 2001). The history of education and IT in the United States demonstrates attempts to control the educational processes including teachers' work and to steer students to their most productive stations in life (Muffoletto).

Perhaps the most important factor regarding how and why the field of IT has historically been steered by instrumental rationality is the fact that the main impetus for the emerging educational technologic developments in the United States (especially in the 1950s and 1960s) has come from the U.S. Office of Education, and other federal and military agencies including the Division of Visual Aids for War Training, the American Institute for Research, and the National Science Foundation (Travers, 1973; see also Cuban, 1986; Noble, 1989; Saettler, 1990; Scandura, 1984). As Travers noted the new educational technology was meant "to be the instrument of achieving the traditional goals of education more efficiently" (p. 984). In other words, instructional materials developed by educational technologists were not designed to achieve anything radically new but to increase the efficiency of traditional education. The emerging educational technology was conservative in the sense that the role of it was cost-conscious and, for the most part blind to the social issues of the day.

Nonetheless, one should also remember that, as Muffoletto (2001) noted, educators looked to newer learning theories, the use of media in education, instructional design in order to address some of the issues and concerns that arose in education in the post-World War II era in the United States, such as civil and women's rights, equity of opportunity, and a growing middle class. Educational television, for instance, was seen as a delivery system that promised equity of access to educational experience. Dealing with aforementioned concerns and issues were important both politically and ethically; however, there was a technological/instrumental rationality beneath that practice in that technology was implemented to solve social or nontechnological problems. As Travers (1973) noted:

> Any solution that seeks to solve social ills through development of a uniform educational product by technological means is unlikely to produce the smoothly running social machine it is designed to produce, for it includes features that are highly abrasive to the spirit of man. (pp. 988-989)

The new technology was not aiming to enable critical self-examination, but geared toward performance, external goals, and efficiency within the old system; in the Cold War climate, educational institutions had been under pressure that "elevated a bottom-line performance mentality above else and in all things" (Rudolph, 2002). In the late 1960s and 1970s, the behavioral objectives movement revived efforts to apply scientific management to education, with calls for "educational engineering," "accountability," and "performance contracting" (Saettler, 1990, p. 291). Needles to say, this movement influenced educational technologists of the era and later periods and embodied an instrumental view of education. (Similar calls are being heard today in the

United States, such as with the No Child Left Behind and the Commission on the Future of Higher Education.)

Similarly, it is hard to say that the programmed instruction of the 1950s and 1960s, which was perhaps the first mature instructional model of behaviorist educational technology, was interested in goals and social issues of the day, except improving the means of instruction. The models of instructional systems design that have dominated the field of educational technology since 1960s "reflect a linear, ends-means view associated with behavioristic concepts" (Saettler, 1990, p. 353). In such an ends-means view, ID models typically have not focused on gaining "a better understanding of why and how schools function as they do" (p. 354); instead, they focus on instrumental and functional issues, such as designing, producing, and validating a particular instructional program or curriculum.

By the late 1970s, cognitivist perspectives were becoming dominant in educational technology. Although educational technologists have shifted the emphasis from external behavior to internal mental processes and their enhancement in learning and instruction (Saettler, 1990), neither approach has adequately dealt with social, political, and ethical issues—as if education was only a matter of improving efficiency of instruction. Behaviorism "reduces the social to environmental reinforcers and cognitivism sees it as a kind of environmental 'noise' which interferes with the efficiency of information processing" (Usher & Edwards, 1994, p. 45). Cognitivist-constructivists who have been interested in PBL have not adequately considered cultural/historical issues. As Popkewitz (1998) put it:

> Within the alchemy is the construction of problem solving and reflection that seem to exist outside historical and cultural influences. Reason is discussed in terms of a universalized conception of problem solving that is presented as if it were independent of time and place. The idea of context is discussed in terms of focusing on the ways in which individuals negotiate differences or in which the mind finds different strategies to engage in the finding of answers to problems. ... Although certain types of pedagogies are termed constructivist, then, the constructivist discourses do not systematically examine the way in which knowledge or reason is socially constructed except within psychological paradigms that obscure the historical conditions of reason itself. (p. 557)

By late 1970s and 1980s, the federal role in education was sufficiently pervasive as to greatly restrict and control the activities of states and local governments (Scandura, 1984). This loss of local self-determination made it difficult to achieve local ends. Since the mid-1980s, private sector management has become the model for solving the problems of schools and universities; educational activities have been "downsized," "restructured," and "outsourced" (Cuban, 2001, pp. 10-11). Although the 1980s were celebrated as a "new federalism" (referring to the return of educational responsibilities to local levels) by Scandura, in retrospect, centralization, standardization, and rationalization may have been the strongest tendencies in education of the 1980s and 1990s. Apple and Jungck (1998) summarized what kind combination of forces had led to this situation:

> Economic modernizers, educational efficiency experts, neoconservatives, segments of the new right, many working- and lower-middle-class parents who believe that their children's futures are threatened by a school system that does not guarantee jobs, and members of parts of the new middle class whose own mobility is dependent on technical and administratively oriented knowledge have formed a tense and contradictory alliance to return us to "the basics," to "appropriate" values and dispositions, to "efficiency and accountability," and to close connection between schools and an economy in crisis. (pp. 133-134)

Economic forces especially have required teachers and curricula to be more tightly controlled, that is, more technically oriented. Rationalization of teaching is related to a longer history of attempts to control the labor of occupations that have been seen as women's paid work (Apple, 1986; Apple & Jungck, 1998). Deskilling of (especially women) teachers is part of a long process in which labor is divided to increase efficiency and to control both the cost and the impact of labor (Apple, 1995). Reformers who have been eager to make schools efficient instruments of American global economic competitiveness speak mostly about standards, test scores, and accountability, but they seem to have forgotten "the historic civic idealism and broad social purposes public schools serve in a democracy" (Cuban, 2001, p. 189). In such a climate, it is no surprise that computers have been increasingly bought but, Cuban noted, the question "Toward what ends?" have not been addressed.

Specific Intellectual and Efficiency as an Ethical Construct

> If efficiency means the demoralization of the school system;
> dollars saved and human materials squandered;
> discontent, drudgery and disillusion—
> We'll have none of it!
> If efficiency denotes low finance, bickering and neglect;
> exploitation, suspicion and inhumanity;
> larger classes, smaller pay and diminished joy—
> We'll have none of it!
> We'll espouse and exalt humane efficiency—efficiency that spells felicity, loyalty, participation, and right conduct. Give us honorable efficiency and we shall rally to the civic cause.
> --- The editors of the *American Teacher*, 1916 (quoted in Callahan, 1962, pp. 121-122)

If, given the changes now occurring in teachers' work and the economy, the technologization of the classroom may increase inequalities, not lessen them (Apple,

1986), then instructional technologists should deal with the objective conditions in which their actions may have negative effects on the teachers and students. To illustrate, they should be concerned with deskilling mentioned earlier. This is desirable if we want designers to be ethically responsible for the results of their actions. This means that designers should not be conceived as mere technicians, but what Foucault (1980) called *specific intellectuals*.

Foucault distinguished specific intellectuals from universal intellectuals who traditionally spoke/wrote on every issue, such as the figures of Voltaire and Sartre. According to Foucault (1980), the so-called crisis of the university did not result in a loss of power; the universities and education have become "politically ultrasensitive areas" (p. 127). Specific intellectuals constitute a new class of experts whose actions in their own technical field may often work towards changing a regime of truth—"the types of discourses which it [the society] accepts and makes function as true" (p. 131). As Foucault observed, the role of specific intellectuals becomes more and more important in proportion to the political responsibilities that he or she is obliged to accept as a computer expert, scientist, or designer. The role of specific intellectual is to reveal and alter the mechanisms, techniques, and procedures that produce truth. In other words, their role is to change "the political, economic, institutional régime of the production of truth" (p. 133).

I believe that such a role has remarkable implications for IT. To illustrate, instructional technologists as specific intellectuals can attempt to reveal how business efficiency and project management are assumed (see, for instance, Rothwell & Kazanas,

1992) rather than problematized in education and IT, as part of an increasing technology of control, at the expense of ethics (Ball, 2003).

If instructional design is all about how instruction can be made better or making instruction more efficient, then certainly power and sociocultural issues that influence the classroom context should be considered relevant to ID. In other words, efficiency is not solely a technical matter but involves moral and political choice (Apple, 1995). Thus, instructional technologists should not behave as if their job is to find some kind of objective and neutral efficient mean/ends. "If our goal is to make systems of education more efficient," Kumar (2005) noted, "we cannot do better than by recalling Dewey's idea of efficiency as a measure of communication" (p. 20). As Kumar explained:

> This conception invokes the need to look in two directions for our search of 'quality' parameters capable of being used for the comparative study of education and for theory building. In one direction, we should be looking for ways to build teacher confidence by ensuring communication between them and policy makers, curriculum designers and non-government organizations. In the other direction, we should look for greater historic awareness at all levels regarding the role of education in promoting a culture based on reason and peace, which might replace the culture of competitive aggressiveness which has been gaining legitimacy. (p. 20)

Potential Pathways

In what follows, I focus on potential pathways for advancing the field of educational technology. I limit myself to the notions of systems design and userdesign. Although, I have my own reservations with both concepts, I think the notions deserve to be developed further and can potentially address many of the problems associated with instrumental views of the field.

Systems Design

Systems design is different than systematic instructional design or instructional systems design (ISD). The most important distinction is that while typical educational inquiry (including ISD) is concerned with improving, revising, and reforming education or a current system, systems design is concerned with transcending, revisioning, and transforming education. As Banathy (1996) noted, except for a narrow application in ID, systems inquiry is "highly underconceptualized and underutilized" in education (p. 83). Systems design is "a future-creating disciplined inquiry" (Banathy, 1993, p. 10) and was proposed as a new educational technology in 1990s against "the existing educational predicament" (p. 16).

Systems designers aim to create and implement a new system. In other words, systems design does not focus on existing educational systems. This point seems to be important for me because systems design can keep its distance from the narrow notion of efficiency and instrumental mandates of educational reforms and it can conceptualize education within its environment and thus make educational technology open to the various critical writings of other fields, such as cultural studies, critical pedagogy, philosophy of technology, ecology, and so forth. However, the main problem with many writings on systems design is that they take for granted the Information Age rhetoric. In other words, they want to transform and revise education for mistaken reasons, such as preparing a new work force for the information age (e.g., Reigeluth, 1994). Thus, although systems inquiry is interested in serving humanity (Banathy, 1996), recent

educational practice is projected mostly on the needs of postindustrial business (for a critique of the myth of the information age regarding education, see Bromley, 1998).

Systems design needs to deal with the goals of education with ethical and political considerations, not with uncritical acceptance of the rhetoric on the needs of the information age. I believe that systems design has much to learn from critical pedagogy and critical writings on IT as they help to bring better reasons for transforming education. To illustrate, some of the fundamental needs of education are smaller class size, higher entry-level teacher salaries, responsive school communities (Cuban, 2001); skilling and intellectualizing teachers (Apple, 1986, 1995; Giroux, 1988); a more equal funding and teacher distribution for schools (Kozol, 1992); a less oppressive education based on educational vision of justice and equality and of avoiding global empire building (Kincheloe, 2004). Systems design would be relevant to education as long as it takes consideration of these pressing needs. Postman's statement is worthy of remembering: "I do not say, of course, that schools can solve the problems of poverty, alienation, and family disintegration. But schools can *respond* to them" (Postman, 1996, p. 48; italic in original).

Userdesign

Userdesign is based on systems design and was introduced to the IT field by Banathy (Carr-Chellman, 2007). According to Carr-Chellman and Savoy (2004), in contrast to a traditional ID model in which there is very limited consultation with the end users, userdesign aims to empower "the users to engage authentically in the decision-making process that *is* design" (p. 702, italic in original). In traditional ID the designer

analyzes, creates, and negotiates, and leaders initiate, approve and decide; the users (such as students) are left to accept or reject the design. In userdesign, designers, users, and leaders negotiate in decision making. There is a distinction between userdesign and user-centered design in that userdesign goes beyond mere consultation to "elevate the user to the role of a designer" (p. 713). The literature on userdesign is "almost a blank state" in instructional design (p. 702). One possible reason is that userdesign is practically the same as denying the power and expertise of instructional designers. For the purpose of this paper, user design might be considered inefficient from a narrow technical point of view, but it aims for a faithful inclusion and nondomineering or noninstrumental relationship. Having summarized userdesign, I would like to call attention to three points that might be helpful in developing userdesign further.

First, userdesign is clearly influenced by critical theory. However, in the work of Carr-Chellman (2007), there are few references to critical (and postmodern) writings in IT. This is both surprising and disappointing as she aims to empower users (such as students); she misses a body of literature in IT that attempted to orient the field toward practical and emancipatory human interests (e.g., Aoki, 1991; Boyd, 1991; Koetting, 1979; Muffoletto, 2001; Streibel, 1993). Moreover, if Carr-Chellman had taken into consideration the assertion that efficiency is not solely a technical matter but also an ethical construct, then she would not necessarily consider userdesign inefficient (p. 12). As I have argued, educational technologists should broaden the notion of efficiency that includes not only cost-effectiveness and time, but also ethical and political issues such as deskilling of the teachers. Thus, they can be helpful not only in serving the growing needs of industry and economy, but also in fostering democracy and pluralism.

Second, there should be more emphasis on teachers as users and designers. Many of the problems related to controlling teachers' work and deskilling teachers can be resolved by skilling teachers as instructional designers. To be more explicit, teachers could be well trained so that they can modify and invent instructional strategies (see Winn, 1990).

Third, the notion of power is especially problematical in Carr-Chellman (2007). She understands power as a possession (e.g., "the school board holds more power than the teacher, and the teacher more power than the parent and so forth," p. 5). To understand power as possession and ignore newer (modern/postmodern) forms of power is quite odd if one writes on power relationships and empowerment. This understating of power has been largely outdated and refuted by many, including the French philosopher Michel Foucault.

According to Foucault (1980, 1983), modern power is not a possession of one group of people but a relationship between individuals/partners, and is something that operates through people through normalization and disciplinary practice. In other words, power "which is assumed to exist universally in a concentrated or diffused form, does not exist" (Foucault, 1983, p. 219). This form of power is not top-to-down; the disciplinary control operates on the individual level. Individuals "are the vehicles of power, not its points of application" (Foucault, 1980, p. 98). Power "is exercised only over free objects, and only insofar as they are free" (Foucault, 1983, p. 221).

To link this analysis of power to userdesign, let me point out one practical application of this broad notion of power in education in the work of Popkewitz (1998).

He showed that the effects of power to distinguish and divide go unnoticed in current constructivist pedagogies. He argued that:

> constructivism remakes the problem of inclusion/exclusion through its focus on seemingly universal dispositions and the problem-solving capabilities of the child. But the capabilities are not universal. They inscribe norms that disqualify certain children at the level of their being, rather than through their subject position—group categories of race, class, or gender. (p. 560)

In other words, problem-solving abilities and capabilities of the students are not universal and belong to certain groups; when they are presented as universal/natural and used as the norms to judge and differentiate among the children, the effects of power to divide those students into groups go unnoticed (Popkewitz, 1998). I suspect that user design will be vulnerable to similar conceptual problems unless it incorporates a stronger notion of power.

Conclusion

1. Instructional technologists should be sensitive to ethics and power.

Instructional technologists should be concerned with whether, when, and in what ways it is *right* to exert control over the teacher's work and student's learning. In other words, they must be guided by *phronesis* (the disposition to act rightly), not by prescription or control. For instance, instead of producing technological objects that largely replace the teacher and, in so doing, might destroy the caring relationship between the teacher and students, they should create resources to be selected and modified by teachers (Damarin, 1994; Nunan, 1983; Streibel, 1991). Along with ethical considerations, one should be careful about the effects of modern and postmodern forms

of power in terms of normalizing, distinguishing, and dividing students. Thus, userdesign should incorporate a better conception of power.

2. There is no "easy way to educate a human being" (Callahan, 1962, p. 264). Efficiency involves ethical and political choice.

By the end of the 20th century, we witnessed what American sociologist Ritzer (2004) termed the McDonaldization of society. Following Weber, Ritzer argued that McDonaldization includes four main principles: efficiency, calculability, predictability, and control through nonhuman technology. Ritzer's critique is based on what he calls "the irrationality of rationality": rational systems lead to irrational outcomes. In effect, McDonaldization eventually leads to inefficiency, unpredictability, incalculability, and loss of control. This has a ready application in many spheres of education (e.g., Besley & Peters, 2004; Ritzer, 2004). Here let me only state that in contrast to the rhetoric about efficiency, the goal of cost-effectiveness has not been realized throughout the 20th century in terms of the use of technology in classrooms. The argument from economic efficiency does not hold, even in terms of narrow cost analysis; students teaching students (peer tutoring) emerged as far more costeffective than computer assisted instruction (Bromley, 1998; Cuban, 1986, 2001).

Nonetheless, ultimate value of an instructional practice should be based on some ethical judgments, not on cost-effectiveness. Dialogue as an instructional approach might be very inefficient from a technical point of view; however, our selection of dialogue is not a matter of calculation. Other learning approaches (such as direct teaching) could be much more effective and efficient than dialogic teaching. But, educators' insistence on dialogue has much to do with nonoppressive relationships between the teacher and the

student. Thus, we should first aim to choose the *right* conducts of instruction, instead of choosing the most efficient one.

3. Instructional technologists should be specific intellectuals.

Our role should be to reveal and change the regime of the production of truth. For instance, instead of uncritical acceptance of the vision about the needs of information age, instructional technologists who employ systems design need to bring a better vision for transforming education—one that is based on the pressing needs of schools. Similarly, instructional technologists should be watchful about how truth about certain instructional approaches produced. In terms of PBL, for instance, instructional designers should be more critical and curious about "where puzzles and problems come from and who recognized them as being in need of solution" (Kincheloe, 2004, p. 119).

Accordingly, instructional technologists should go beyond technical considerations. As Horkheimer (2004, p. 16) put it: "The statement that justice and freedom are better than injustice and oppression is scientifically unverifiable and useless." Instructional technologists, who work in the field of open and distance learning, for instance, assume important political and social roles as the architects of new educational institutions. As Fox (1991) noted, "If they cannot rise to the task of social and educational critique and tackle the big moral and social questions to which their industry gives rise, almost a thousand years of humanism will end in collapse" (p. 219).

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CHAPTER III

INSTRUCTIONAL DESIGN, TECHNOLOGY AND OBJECTIFICATION

In 1973, Robert M. W. Travers, a former president of the American Educational Research Association, published an essay as a critique of educational technology. His essay was not written either for support or disbelief of educational technology; rather, he attempted to show that the trend in the development of educational technology parallels closely the development of other technologies that have taken in the past centuries. In this context, Travers (1973) pointed out that educational technology (or "the new machinery for educational change") was itself modeled after other contemporary industrial enterprises and sought to change school by delivering educational packages:

> The doctor prescribes packaged medicines. The homeowner who wishes to improve his bathroom can buy a packaged shower door complete with installation instructions. The housewife covers up her culinary limitations by buying the packaged main dish which only needs heating. With the aid of federal programs, the expectation was that the teacher could hand out packaged education backed up by some kind of guarantee concerning utility. (p. 985)

This focus on packaging and delivering education has not diminished since the 1960s. On the contrary, the rapid growth in distance (and especially online) learning increased interest in it. The use of (and discussions on) "learning objects" is the latest manifestation of this powerful trend—according to The IEEE Learning Technology Standards Committee (2005) leaning objects are defined as "any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning" (para. 1). Moreover, a current trend in educational technology is a continuing increase in the use of individualized learning materials, rather than traditional face-to-face teaching

situations (Ellington, Percival, & Race, 1993, p. 193). It is worth noting that modern instructional technology (IT) has always been interested in teaching without teacher intervention. The name change from "audio-visual education" department to "instructional technology" at Wayne State University in 1962 reflected "a move away from the 'aids' concept assisting teachers to teach and toward the concept of at least some materials being directly used by students without teacher intervention" (Knirk & Gustafson, 1986, p. 9).

Focusing on packaging and delivering education is also clearly evident from the assumptions of some of the current instructional design (ID) models. Although the generic ID model (ADDIE) has not changed significantly in the past, there are many ID models now. Gustafson's taxonomy of current ID models helps us to understand whether a model is best applied for developing: (a) individual classroom instruction, (b) products for implementation by users other than the developers, or (c) large and complex instructional systems directed at an organization's problems or goals (Gustafson & Branch, 2002, p. 13). In the second category, use of the product by individual learners as opposed to teachers (e.g., instructional materials for self-study) often means the product is to stand on its own. In such situations, the assumption is that a teacher is not present and the product must be usable by learners with only "managers" or facilitators available. Similar to what I have just described, in some educational contexts, the role of teacher is increasingly seen as "implementer" (Newby, Stepich, Lehman, & Russell, 2000) in which teachers follow a previously completed plan and instruction is developed into a finished product including lesson plans, assignments, activities, notes, computer programs, and so forth. In other words, when instructional designers (along with curriculum designers and

other educational experts) behave in a prescriptive manner (Streibel, 1993), they are treating instruction as a *product* of design; the product, in turn, is managed or implemented by teachers who have little autonomy on the whole process.

Let me give an example in order to show the pervasiveness of the role of teacher as "implementer" or "manager" of prepackaged instruction. Shannon (1989) described one popular reading program in the U.S., *Moonbeams,* from the Hughton Mifflin Reading Series, as follows:

> [T]he publisher offers stories for both instructional and recreational reading, charts listing examples so that teachers won't have to think of their own, workbooks, worksheets, "bonus" worksheets for practice, two forms of lesson tests, two forms of chapters tests (published in workbook or worksheet style for teachers' convenience), placement tests, vocabulary tests, floppy disks for scoring all the tests, record cards for keeping track of students' tests scores, administrators' guidebooks to help them manage the program more effectively, specially written monographs to offer research support for the program's suggestions, and letters and activities for teachers to send home to students' parents. That is, the goals, directions, practice, assessment, record keeping, and communication with parents are all prepared and packaged for teachers to use. (p. 82)

In an activity of the same reading program mentioned above, the directions read as follows (quoted in Shannon, 1989, p. 83):

> Print the following words on the board:
>
> Plane spoon sweater flat
>
> *Say*: Let's play a game of word riddles. Here are four words you know when you hear someone say them. But you may not recognize them when you see them like this. But if you use what you know about the sounds of letters as I tell you something about each word, you should be able to tell me what the word is.
>
> *Point to plane*. This word names something that can fly.
>
> What is the word? ... (plane)
>
> How did you know it wasn't plan? ... (no sense)
>
> How did you know it wasn't helicopter? ... (wrong sounds).

The reduction of the teachers' role to manager of commercially produced reading materials not only degrades teachers from their professional status, but also reduces and reifies school literacy to the completion of materials and to students' scores on standardized reading tests—in essence, ignoring how students develop critical literacy on their own (Shannon, 1989). Instructional design, for the most part, has ignored these problems; and this should be critically questioned because, in a very real sense, prepackaged instruction has become more prominent in many educational settings.

In the distance education literature, such as in the classical work of Peters (1993), it has been acknowledged that the ("traditional") distance teaching process is structured through increasing automation and largely objectified—in the sense that the distance education professor does not have the freedom to allow his/her subjectivity to influence his/her way of teaching; his/her teaching is largely determined by the (standardized) course (including prepackaged learning materials) and technical means (pp. 122-123). Beyond distance education, it does not seem to be unfair to claim that the move from teacher-centered to learner-centered instruction in the face-to-face classroom settings has been and will be accompanied by more prepackaged instruction.

In other words, the packaging of courses does not seem to lead to "openness" or more learner autonomy, rather it seems to have lead to a more "closed" version of education, that is, a curriculum-centered version (Taylor, 1996). There are many references to the issue of access (and openness) in the ID and open learning literature. Although the meaning of access is not made explicit, there is an understanding that access tends to be focused on the delivery of something "with the implicit assumption that *information can and should be seen as an object—tangible and portable*"

(McWilliam & Taylor, 1998, italics added). An understanding of education based on this assumption will be my target of critique in this paper.

In order to deal with the problems associated with packaged learning or education-as-artifacts, I will employ the term *objectification*. In its broad usage, objectification refers to the way in which one treats everything (including human beings) as an object, raw material, or resource to be manipulated and (re)used. Along with this broad sense, I use it to refer to the way that education is characterized by delivery and packaging of learning, in which process teaching is reduced to the transmission of information and courses are transformed into courseware.

Outline of the Paper

In what follows, I will deal with objectification from three different angles: metaphysics, phenomenology, and political economy:

First, I focus on metaphysics in order to understand how the intelligibility/being of education is reduced into the *delivery* of information packages ready to be used. Instructional designers have not paid attention to the metaphysics that has provided the basis for their basic understandings and practices. Unless we realize and question this metaphysical basis, we cannot present any substantive critique of objectification found in education and ID. Metaphysically, we need to pay attention to how things have come to be this way and what the alternatives were and are. I present a brief overview of the Heidegger's genealogy and critique of modern technology (for a Deweyen perspective, see Dwight and Garrison [2003], who provide an interesting critique of metaphysics in IT and curriculum theory).

Second, acknowledging that literature on IT and critical, cultural studies on body (corporeality) are rarely brought together (McWilliam & Taylor, 1998), I offer a phenomenological discussion on the importance of body (or embodiment) in learning in order to understand why it is problematical to speak of "delivery" of learning.

Third, I focus on political economy because I believe that instructional technologists should ask "Who loses/gains by objectification of education?" In terms of political economy, I focus on the consequences of objectification of education on the profession of teaching, particularly how teachers are deskilled through the separation of conception (design) from execution (implementation), which has not been adequately addressed by instructional designers with few exceptions (Foley, 2003; Streibel, 1993; Winn, 1990). After a very brief discussion on education as a commodity, some of the political/economical problems regarding mandating teachers to teach predesigned materials are investigated.

I also present the instructional design implications of my previous discussions. With increasing objectification, education manifests itself as packaging, delivery, and transmission of information. Thus, the source of the problem of objectification of education is metaphysical in the sense that the intelligibility (being) of education is equated with ready-to-use packages, and thus education is reduced to the delivery of information. Thus, the embodiment dimension of teaching and learning is not recognized; furthermore, the learning relationship between the teacher and the student is reduced to one of coercion. Objectification increases bureaucratic control over teaching process and deskills teachers; teachers are proletarianized. I argue that education should be understood as a science of doing, not as a science of making or producing. Accordingly,

instructional designers should create resources and structures in which care relation and dialogue between students and teachers can take place. Instructional designers' meaningful technological interventions need to be aligned with approaches to professional development of teachers, not with the objectification in which the subjectivities, bodies, and faces of teachers and students become irrelevant.

Before presenting my arguments, a few words on my methodology is in order. Bringing various arguments from different disciplines, what I do is probably best captured by the term *bricolage*. The term comes from the works of German sociologist Georg Simmel and French structuralist Claude Lévi-Strauss. The French word *bricoleur* describes a "handyman" who makes use of the tools available to complete a task. My use of the term mainly comes from the work of Denzin and Lincoln (2000), Kincheloe (2001), Kincheloe and Berry (2004), McLaren (2001), Nelson, Treichler, and Grossberg (1992). Briefly, *bricolage* refers to transdisciplinarity, of which the "field" of cultural studies is a nice example. Although different terms have been used, methodologically similar approaches can be found in instructional design and technology literature (Hlynka & Belland, 1991; Nichols & Allen-Brown, 1996; Rose, 2005; Yeaman, Koetting, & Nichols, 1994).

Metaphysics

The significance of Heidegger's philosophy of technology lies in that he analyzed technology with its relation to metaphysics (Heidegger, 1977). Needless to mention, Heidegger does not oppose technology, but deals with the problematical aspects regarding technological understanding of being. Heidegger was neither Luddite nor

technophobe and his views cannot easily be categorized as either optimistic or pessimistic (Heim, 1993, p. 65). For Heidegger, modern technology has three interrelated meanings (Zimmerman, 1990, p. xiii): (a) industrialism (production processes, techniques, devices, and systems), (b) modernity (rationalist, scientific, utilitarian, anthropocentric, secular worldview), (c) mode of disclosing things (e.g., "to be" means "to produce"). Heidegger insisted that the third meaning of modern technology is the most important one because both industrialism and modernity are symptoms of a particular mode of disclosing things. This mode of disclosing things was a product of Western metaphysics.

Heidegger argued that historically we have undergone some ontological movements and those movements made possible particular ways of understanding the modes of disclosure. He maintained that the major periods in Western history (Greek, Roman, medieval, enlightenment, technological) mark the stages of ontology; in other words, these periods show different understandings of what it means for something "to be." According to Heidegger, for something "to be" means for it "to be disclosed" or "to be manifest." Things may manifest themselves as creatures of God or as standing reserve.

Heidegger (1977) noted that the dominant tendency of technology is towards the objectification of earth within modern Cartesian epistemology, that is, things reveal themselves as objects into the mind of a subject. According to Heidegger's later analysis, for something in our technological era "to be" means for it to be raw material, to be immediately at hand, or a standing-reserve (*Bestand*). The technological understanding of being views all things as nothing but raw material for production and consumption. The essence (*Wesen*) of modern technology is what Heidegger called *enframing* (*Gestell*). Enframing is the way in which things reveal themselves as standing-reserve. For

Heidegger, the history of the West is the story of how the productionist metaphysics of the ancient Greeks gradually degenerated into modern technology (Zimmerman, 1990). The Greek founders of metaphysics defined the being of entities in a proto-technological way; for them, "to be" meant "to be produced." This productionist metaphysics is implicit in many discussions on the IT. To illustrate, educational information is understood as a tangible object and as such "teaching" is substituted by "delivery" in the open learning literature (McWilliam & Taylor, 1998).

Heidegger's aim was not only to deconstruct the history of productionist metaphysics, but also to show an alternative way. According to Heidegger, the inauguration of a new (postmetaphysical) era would be similar to what the Greeks originally meant by *techne*. *Techne*, in this original sense, means a knowing and a letting-be of things; *techne* is a way of disclosing that unites art and production/handicraft (Heidegger, 1977). With the help of such "letting things be," humanity would be able "to 'produce' a work of art that would restore meaning to the things which had been made meaningless in the technological era" (Zimmerman, 1990, p. xvi). Similarly, when teaching becomes a matter of delivery, the value of dialogue between teachers and students is lost. As I will argue later, education as an art has the potential to disclose things as things, not objects; education should affirm the subjectivities of teachers and students and be understood as a science of doing not making.

According to Heidegger (1977), as a technological understanding of being, *enframing* (in this age of Nietzschean metaphysics) transforms all beings, including humans, into mere resources (*Bestand*): "entities lacking intrinsic meaning which are thus simply optimized and disposed of with maximal efficiency" (Thomson, 2001, p. 249).

The logic of *enframing* as described by Heidegger is especially important for the purpose of this paper as this logic gives the illusion that education consists of ready/prepackaged resources (*Bestand*) waiting to be delivered. Thomson explains Heidegger in the following way:

> Heidegger believed our passage from Cartesian modernity to Nietzschean postmodernity was already visible in the transformation of employment agencies into 'human resource' departments. The technological move afoot to reduce teachers and scholars to 'on-line content providers' merely extends – and so clarifies – the logic whereby modern subjects transform themselves into postmodern resources by turning techniques developed for controlling nature back onto themselves. Unfortunately, as this historical transformation of subjects into resources becomes more pervasive, it further eludes our critical gaze; indeed, we come to treat ourselves in the very terms which underlie our technological refashioning of the world: no longer as conscious Cartesian subjects taking control of an objective world, but rather as one more resource to be optimized, ordered, and enhanced with maximal efficiency—whether cosmetically, psychopharmacologically, or *educationally*. (pp. 249-250, italics in original)

We can see various manifestations of the technological understanding of being, as described by Heidegger, in the discussions about IT. According to The IEEE Learning Technology Standards Committee (2005), examples of learning objects include multimedia content, instructional content, learning objectives, instructional software and software tools, persons, organizations, or events referenced during technology. In other words, human beings, too, are given as examples of objects to be referenced or re-used, that is, one more resource to be optimized. What cannot be reduced into resource (*Bestand*), that is, objectified, qualified, quantified, and systematized, becomes seen as useless and redundant—as both Heidegger and Foucault showed, the human being is no exception (Rayner, 2001).

Phenomenology

Perhaps, "the most culturally deeply embedded dualism with which educational theory and practice must come to terms is the mind/body separation" (Peters, 2002, p. 404). The limited research on the body in online learning ranges from seeking ways to compensate for the online invisibility of a sensing body to celebrating the (no)body in virtual space where learning is not marked and shaped by class, gender, race, (dis)ability, accents, size, beauty, and age (Lander, 2005). Sociologists have long been dealing with the relationship between reproduction, education, and the forms of cultural capital, that can take the embodied state ("in the form of long-lasting dispositions of the mind and body"; Bourdieu, 1986, p. 243).

Along with some philosophers and phenomenologists (Dreyfus, 2001), feminist, postmodernists and critical educators have emphasized the importance of the embodiment in learning (McWilliam & Taylor, 1996; Shapiro, 1994), and in online learning (Bayne, 2004); thus, these theorists departed from the mind/body dualism and insisted the pedagogical relation is "embodied." This new body of work stands against the ideal of disembodied knowledge and presents the notion of situated knowledge as it is inscribed in and on the body as a lived process (Shapiro). These discussions are particularly important within the context of online learning in which body seems to be irrelevant.

In *On the Internet*, Dreyfus (2001) argued that when we leave behind our animal-shaped, situated, vulnerable, embodied selves in cyberspace, we also lose relevance, skill, and meaning. According to Dreyfus's phenomenological analysis, bodily presence is required for acquiring advanced skills to be experts or masters and cannot be "delivered"

online. He claims that bodily presence/apprenticeship is necessary for even the postdoctoral students in a highly theoretical science; students learn what to do through observing the body of the professor when there are no rules for situations, such as how long to persist when the work does not seem to be going well or what to do in case of a crisis or emergency.

According to Dreyfus (2001), even if the Internet provides live video conferencing or interaction, such a technology cannot capture the context; context is the mood in the room and mood governs how people make sense of what they are experiencing (p. 60). Thus, only bodily presence can allow us to be attuned to the mood or immersed in the context; unless students are immersed in the context, they will be less willing to take risks, to ask questions, or interact with the class. Here, Dreyfus may seem to be going too fast; Blake (2002) pointed out that perhaps there is nothing intrinsic to distance education in general or online education in particular that precludes risk or commitment. However, the general point that Dreyfus is making seems to be correct: as we go from tutorial teaching to large lecture halls to asynchronous net-based courses (p. 63), we witness a decline in involvement and instructional effectiveness. For Dreyfus, telepresence cannot "reproduce the sense of being in the situation so that what is learned transfers to the real world" (p. 67).

Accepting Dreyfus's arguments should not blind us from looking for new possibilities in online space. In her article, "The Embodiment of the Online Learner," Bayne (2004) argued both that mind/body distinction is untenable as well as that the conventional constraints and significations of embodiment can be challenged and shifted in the new technological environments. In relation to the purpose of this paper, once one

realizes that the body matters in learning (however body itself is open to re-articulation), it becomes untenable to speak of "delivery" of learning as if we could digitally package learning and provide it to the mind of learners. My point is not to present another case in endless discussion about online versus face-to-face learning; rather, I want to point out that when the role of the embodied teacher or the significance of the body-to-body relation is not recognized, then the body and, indeed, the profession of teaching seems to be unimportant and "delivery" of learning (objects) becomes the only issue. The failure to recognize the embodiment of learning gives the impression that everything about learning could be objectified—namely, learning can be seen only as a matter of management of learning objects by instructional designers.

Political Economy

In *The Postmodern Condition*, Lyotard (1984) has argued that "the status of knowledge is altered as societies enter what is known as the postindustrial age and cultures enter what is known as the postmodern age" (p. 3). Lyotard noted that "the miniaturisation and commercialisation of machines is already changing the way in which learning is acquired, classified, made available, and exploited" (p. 4). Knowledge in computerized societies is becoming exteriorized from knowers (from their bodies). The old notion that knowledge and pedagogy are inextricably linked has been replaced by a new view of knowledge as a commodity:

> Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production: in both cases, the goal is exchange.
> Knowledge ceases to be an end in itself, it loses its "use-value". (pp. 4-5)

Once something loses it use-value, its value is reduced to exchange-value; education is reduced into a commodity: something to be produced, packaged, sold, traded, outsourced, franchised, and consumed (Roberts, 1998). In this reduction, the objectification of education plays an important role in the sense that, as Lyotard argued, the application of technology to knowledge necessitates that knowledge be computerized or formatted into specific modes. The lived experiences of teachers, for example, are to be discarded by this formatting. This is surely frightening but, unfortunately, there are many evidences that suggest that this may become the dominant case. Shannon's (1989) history of reading instruction in the US in the 20th century presents an alarming case; the roles of teacher and textbook seem to be reversed in many classrooms wherein teachers become a support system for the textbook (and other instructional materials) rather than the other way round:

> Government has increased its control over planning and implementation of reading lessons at the expense of teachers' traditional repertoires. In most states in the US, state officials now exercise the skills of goal setting, pacing instruction at a general level, instructional design in some detail, and assessing students' progress closely, while teachers have become legally dependent on commercial reading materials. (Shannon, 1989, p. 85)

For analytical purposes, we may identify three main political/economical problems with the objectification of education: deskilling, reification, and proletarianization; all three related to each other.

Deskilling

Deskilling is the separation of conception from execution (Apple, 1986, 1995). Deskilling is part of a process in which labor is divided to increase productivity and

control labor. Recall that, since the 1950s and 1960s in the US, the view that teachers were unsophisticated in skills and major curricular areas forced the creation of "teacher-proof" materials. The separation of conception (i.e., goal setting, ID, and assessment procedures and criteria) from execution enables management to rationalize and control what is happening in the classroom; instructional outcomes cannot be predicted if teachers and students are allowed to work toward goals using a variety of methods and materials (Shannon, 1993).

As I pointed out, in many American classrooms, the prepackaged curricular materials ("systems," as they are sometimes called) include everything that a teacher needs, such as curricular content, prespecified teacher actions/plans and student responses, assessments items, and so forth. Accordingly, teaching skills such as designing teaching and curriculum planning for specific students atrophy because they are really not required (Apple, 1986, 1995). The teaching becomes a matter of something one purchases; the school is transformed into a market. In other words, the teacher's professional skills are replaced by techniques for better controlling students; large publishing houses and, to a certain extent, governments become more powerful than ever (Apple, 1995; Shannon, 1989, 1993).

Moreover, teachers' work is increasingly intensified. More and more needs to be done in less time; thus, a teacher has little choice but to buy ready-made commercial material, whose major aim may be profit, not necessarily educational merit (Apple, 1986, p. 164). Deskilling is accompanied by reskilling. New systems require new skills; for instance, teachers need the management skills to raise test scores using prepackaged instructional materials. This managerial role reduces both the quantity and quality of

skills required to perform the teachers' duties during reading lessons and, thus, decreases the impact of teachers' work on students learning to read (Shannon, 1989, p. 88). Moreover, the new systems require more technological know-how skills.

A new and very skilled kindergarten teacher from New York described her work in terms of this deskilling:

> [T]he superintendent of my district took the reading curriculum that we use, and she devised her own lesson plans on the ways we should teach, what we should say, how we should have our charts printed, how they should be hanging in the room, and what the children should know if she should come and question them. The superintendent said we must do it the way she scripted it in two folders that she gave us. They go right down to what we should say to introduce the follow up, what the follow up should be, and what the children should be assessed on once it's the end of the week. (cited in Kesson, 2004)

With their role reduced to manager, teachers see little incentive to improve their pedagogical skills; thus, instruction becomes "a managerial concern, not an educative one both for teachers, and, ultimately, for students" (Shannon, 1989, p. 92).

Reification

Reification signifies the process by which human relations, actions and characteristics take on the characteristics of things, which then become independent and come to govern human life. As Kesson (2004) pointed out, when the curriculum comes from outside of the classroom, in the form of textbooks or scripts, essential characteristics of the relationship between the teacher and the students are eliminated; the curriculum is not connected to student needs or to what the teacher thinks appropriate, and therefore lacks meaning. As such, reading instruction, for instance, is reified as the application of commercially produced materials (Shannon, 1989), not that students are expected to

critically interpret what is read or produce their own stories. Thus, using prepackaged materials teachers are alienated from their work; teachers withhold their subjectivity from their work and rely on ready materials to solve their problems. Kesson provided a critique of reification in urban schools in US.

> Under conditions of reification, the curriculum becomes a *thing,* it behaves according to the logic of the *thing-world,* and most important, *it transforms both teacher and student into beings who behave in accordance with the logic of the thing-world.* And what about rich, deeply meaningful dialogues and connection-making that must be cut short in the interest of the timed script? How many teachers, when they do present new and worthy knowledge, are asked 'will this be on the test?' What about N.'s kindergartners, who already judge the worth of their classmates by their Friday test scores? These students have become governed by the logic of the dead curriculum, the curriculum that is devoid of life energy, and they know, in the end, what must be done to survive in their high-stakes, Darwinian world. This, I believe, is a Terrible Thing. (para. 65)

Scripted instruction not only reifies learning but also kills one of the most basic teaching and human experiences, that is, finitude and openness to the students. Dialogue with text and each other in reaching for understanding about the world and ourselves is the unique, distinctive characteristic of being human (Gadamer, 1981). Moreover, it is impossible for one to know the result of genuine dialogue:

> What emerges in its [i.e. a Socratic dialogue's] truth is the logos, which is neither mine nor yours and hence so far transcends the subjective opinions of the partners to the dialogue that even the person leading the conversation is always ignorant. (Gadamer, 1975, p. 331)

In other words, when we enter into dialogue with others or students, we transform ourselves and "we do not remain what we were" (Gadamer, 1975, p. 341). In short, when we follow a script in our dialogues with our students, we block any possibility for transformation and openness because, in the final analysis, teachers are not expected to

deviate from the scripts; hence, there is no opportunity for students and teachers to think differently than what is expected.

In a slightly different meaning than that I have discussed above reification also refers to the tendency to deny the role of human constructions and history in social phenomena. As Popkewitz (1991) has argued, "talk about a child as *the* learner, *the* African-American, *the* at-risk are each instances of reification" (p. 172). Such a discourse makes social and historically derived practices seem independent of time and space. Muffoletto (1994) also argued that the learner is governed and processed as an object "with no history, no future, no self," thus educational technology "has turned the subject into the object" (p. 26). Such approach denies the voice of "the learner" in the determination of the learner's need (Damarin, 1994). We need a shift from the emphasis on "the learner's" performance or cognitive processes to their concerns, values, desires, and perceptions; a shift from an objectified target learner to real people in real situations (Rose, 2005). Such a shift can only be accomplished through supporting and skilling of the teachers who can take into consideration of students' need.

Proletarianization

Proletarianization is the process in which the character of middle class labor becomes similar to working class labor. If class is defined by one's relation to the processes of production, then teachers occupy a somewhat ambiguous class position; their level of schooling signifies professional status and they are supervised by managers, suggesting that their labor belongs more in the working class category (Kesson 2004). Teachers are not only classed actors, they are gendered actors as well; like every

occupational category, women teachers are more apt to be proletarianized than men teachers (Apple, 1986). Historically, women's labor has been subject to deskilling/external control in "very powerful ways" (Apple, p. 158): recall that, like most of the countries in the world, 71 % of all teachers and 79 % of elementary and middle school teachers in the US are women (U.S. Census Bureau, 2004).

Although technological proletarianization may not be deeply felt in K-12, it is certainly highly visible in higher education. Note that ID has not really found much application in public schools; higher education has recently become particularly interested in ID and is increasingly employing instructional designers as they learn that ID can help when moving courses from face-to-face instruction to online learning environments (Carr-Chellman, 2007, p. 111). Automation, that is, the distribution of digitized course material online, without the participation of professors who develop such material, is a strong trend in North American universities, often with commercial interests in mind (Noble, 1998a). Foley (2003) argued:

> Internet based distance learning offers a new revenue stream to the university, its reusability facilitates standardization, and the development of offerings can de-professionalize the professoriate. Often courses are "developed" by tenure track faculty only to be delivered routinely by adjunct instructors or part time instructors in a gradual process of standardization and deskilling. When the content of the curriculum is constructed independently of the instructor, its content and perspective are easier to control and more reliably delivered to students. At the same time, a standardized curriculum makes fewer demands intellectually on the professor. Hence, the university may employ less qualified, and subsequently, less expensive faculty. (p. 32)

Definitely, what has been described has already been happening. To illustrate, let me point out the case of The University of Phoenix. The university's official website claims that

> University of Phoenix is truly a different kind of university, whose time has come. Just ask its 17,000 faculty, and staff who are passionately dedicated to teaching and serving the University's 200,000 adult students enrolled on campuses and online throughout North America. (The University of Phoenix, 2007, para. 3).

Indeed, this university is different, as An Invisible Adjunct Assistant Professor of History (2003) noted: "Behold [T]he University of Phoenix, an egalitarian university where all faculty are treated equally, which is to say, all faculty are treated equally badly." In other words, almost all faculty members are part-time or nontenure adjuncts in the largest for-profit university in US. This is truly a frightening manifestation of proletarianization. As Noble (1998b) noted, "It is no accident that the high-tech transformation of higher education is being initiated and implemented from the top down with no student and faculty involvement in the decision-making or despite it" (p. 30).

Instructional Design Implications

In this section, I present a discussion of the instructional design implications of my previous discussions. The problems that I have described do not by any means force us to accept them uncritically. The following italicized points aim to summarize my points; the succeeding discussions develop those points further.

1. Teaching should not only be seen as the production and transmission of instructional materials. The importance of dialogue should be acknowledged.

Heidegger warned against a false interpretation of education as the transmission of information; students are not empty containers waiting to be filled (Thomson, 2001). Many have criticized this false understanding (Dewey, 1963; Freire, 2000); however, the importance of Heidegger's analysis lies in that this false understanding of education is

related to and reflects the nihilistic logic of *enframing* "by which intelligibility is 'leveled out into the uniform storage of information'" (Thomson, p. 254). Thus, the source of the problem is metaphysical in the sense that the intelligibility (being) of educative knowledge is equated with the information pockets and then education is equated with the *delivery* of information. Due to this false understanding the teacher's role is understood as the presenter of information.

If the role of the teacher was just limited with the presentation of information, we would replace them with computers that are more reliable and efficient! This deceptive argument is all too common, for instance, in *Instructional Technology: A Systematic Approach to Education,* Knirk and Gustafson (1986) argued that "teaching is primarily an information-handling profession (transfer of knowledge from 'data sources' to receivers with a need for the information)" (p. 7). This false understanding leads to the many media studies in IT that aim to show whether media (computer-assisted instruction, distance education, and so forth) are better than face-to-face instruction. The majority of studies show "no significant difference," and the accepted position is that "the delivery system" does not have any influence on achievement (Simonson, Smaldino, Albright, & Zvacek, 2003). What is absurd in the premise of such studies and their conclusions is that education is totally reduced into the delivery of information, and as such it is hard to find a difference between different media.

Emmanuel Levinas's distinction between the Said (*le Dit*), the content of speech (i.e. learning object), and the Saying (*le Dire*), unspoken/unwritten dimension of the said, is important here in the sense that in schools attention is paid only to the universality of the Said (Edgoose, 1997). As Edgoose pointed out, the uncaring teacher can avoid

responsibility for individual students once one pays attention only to the Said: "The quest for teacher-proof curricula only shows how the 'safest' educational paths dream of obliterating the Saying with the Said." According to Levinas, as Edgoose explains

> that someone is Saying something matters to us long before we can tell what is being Said ... The Saying exposes our non-separation from the Other. Since I cannot separate myself from Others, I cannot discard them as I can, say, throw away some thing. Therefore, I cannot limit my responsibility for the Other with whom I am face-to-face. My responsibility for them clings to me beyond my control. I am my brother's keeper. (para. 14)

Cook's and Young's (2004) study with preservice teachers showed that, in consequence of their face-to-face encounters with children, teachers were likely to establish and change their beliefs about children and how to teach. In a bodyless or faceless educational milieu that is dominated by instructional objects, teachers may not feel obligated to students and may preserve their beliefs about teaching and students, no matter whether they are appropriate or not.

From a metaphysical point of view, perhaps the most important problem of education in the last several decades (and, in general, in modern times) was that the science of education has been largely understood as a science of productive making (Böhm, 1994; Richards, 1982). As such teaching is largely reduced to production and delivery of learning objects/materials/commodities. Since the notion of learning as something to be "delivered" is tantamount to what Freire (2000) called the banking conception of education, we should go beyond this notion and pay more attention to the educational writings that stress the importance of dialogue in learning (i.e., Burbules, 1993; Freire, 2000). Dialogue is a form of *praxis*, action or doing, not producing and delivering. Rather than managing prepackaged instruction, instructional designers should

look for ways in which they can facilitate the teachers and students having authentic dialogues about instructional contents.

2. ID as an art has the potential to disclose things as things, not as standing reserve to be (re)used. Bodies and subjectivities should be affirmed, not seen as an obstacle to learning.

Heidegger (1977) pointed out that *techne*, original Greek word for technology, also includes the conception of art and handicraft. As bringing forth and revealing, *techne* can help us engage things differently, that is, rather than treating them as standing reserve. Art helps us to see things in their uniqueness and individuality. In contrast to the universality of technology, in which everything is exchangeable, art works are particular and local (Standish, 1997). The field of IT has always been interested in making education more predictable (Knirk & Gustafson, 1986, p. 15) and this requires objectification. Similarly, distance education has been interested in the objectification of teaching process and thus removing subjectivities from it (Peters, 1993).

Along with creating standardized and exchangeable learning objects to be re-used by teachers as *resources*, instructional designers should ponder ways in which the uniqueness of learning experiences of students and abilities of teachers can reveal themselves. In other words, instead of an anonymous/replicable/replaceable manager of instruction, the value of the distinctive character of each teacher should be affirmed (see also Standish, 1997). Instead of valuing only exchangeability/standardization of teacher, student and instructional resources, we should value uniqueness of the teacher and students including their subjectivities, faces, bodies, and so forth. Thus, IT needs to ally

itself with the art and humanities (Hlynka & Belland, 1991; Rose, 2005; Wilson, 2005) in order to appreciate particularity as opposed to exchangeability.

3. Our job as educators (and instructional designers) involves skilling, not deskilling (Apple, 1986, p. 173). ID should take a supplementary role in the teaching process.

I have argued that teaching/learning should not be seen as delivery of prepackaged materials, but as a lively dialogue between the teachers and students. In order for such a dialogue to take place, professional developments of teachers should be supported. To use Shannon's (1989, p. 93) description of American reading programs, technologized instructional programs have professionalism without the conventional professionalism of teachers. The teacher implements somebody else's conception. As such, teaching does not involve a sense of ownership on the part of teachers. In *Horace's Compromise*, Sizer (1984) noted:

> Teaching often lacks a sense of ownership, a sense among the teachers working together that the school is theirs, and that its future and their reputation are indistinguishable. Hired hands own nothing, are told what to do, and have little stake in their enterprises. Teachers are often treated like hired hands. Not surprisingly, they often act like hired hands. (p. 184)

There are, for instance, 3.1 million elementary and middle school teachers in the US (U.S. Census Bureau, 2004). We should not miss "the unique contributions which could have been made by the teacher" (Richards, 1982, p. 332). I also believe that instructional designers' meaningful technological interventions need to be aligned with approaches to professional development of teachers (cf. Fullan & Hargreaves, 1996). To illustrate, a strategy to improve instruction would be that teachers should be well schooled in ID in order to modify and invent instructional strategies (Winn, 1990). Instructional designers (e.g., Heinich, 1991) should give up their enthusiasm toward

replacing teachers with IT through its replicability and reliability. Of course, there are bad teachers; but, this only means that they should be replaced by good ones because making instruction "teacher-proof" has also made it student-proof: students are also decontextualized along with instruction (Winn, 1989).

4. Instructional products should be designed and imported as instructional resources which might enhance a caring relationship.

Our discussion above argued the need to value the uniqueness of the teachers and students including their subjectivities, faces, bodies, and so forth. Highly complementary to this view is the importance of unique relationships between the teachers and students. Online learning research, in particular, commonly devalues the body (Lander, 2005). Moreover, the teacher's bodily presence in the learning context is represented almost as an "impediment" to learning (McWilliam & Taylor, 1996). Such an understanding misses how bodily presence contributes to (care) relationships between the teachers and students. Feminist educational technologist Damarin (1994) provides a framework in which educational technology can be benefited from the *care ethic* of Noddings.

This ethics is based on the relation between the "one-caring" and the "cared-for." The one-caring is obliged to meet the needs of the cared-for and the cared-for is obliged to continue the relation by recognizing the one-caring. By pointing out this relationship, I do not by any means aim to reproduce a dominant power relation between teachers and students; rather, my point is that teachers, not external experts or instructional designers, are in the best position to make decisions with and on behalf of their students. As the instructional technologists/designers produce technological products/objects and those products are imported into the classroom, these products should not be designed to

replace the teacher because in so doing they will likely destroy the caring relationship. As opposed to prepackaged instruction in which the teacher has little autonomy to change anything, in the case of *resource*, teachers and learners select among various materials and still control instruction and they are largely responsible for making educational decisions (Damarin, 1994; Nunan, 1983). As opposed to what prescriptivist ID maintains (Reigeluth, 1983), instructional strategies and resources that instructional designers provide should *orient* future teachers and learners for situated activities, not prescribe how to teach or how to learn (Streibel, 1991).

Conclusion

The logic of objectification of teaching is largely based on accounting/ management in the sense that the objectification of teaching increases efficiency and bureaucratic control over the teaching process. When teaching is seen as a matter of communication between senders and receivers, the teacher may indeed be seen as mere noise, that is, subjective and inefficient. We should return to what Readings (1996) called "accountability that is at odds with accounting" (p. 154). Rather than deciding based on the criteria of achievement and efficiency (which learning approach/medium is best in terms of achievement, i.e., transmission of information?), instructional designers and educators should rephrase teaching and learning as "sites of *obligation*, as loci of *ethical practices*" (p. 154). From this ethical perspective, instructional designers join others to ask key political questions such as "Who loses/gains by objectification and reification of, say, literacy?" This is especially important as millions of teachers (most of them women) are deskilled and proletarianized, and tens of thousands of professors become adjuncts.

It is time for instructional designers to question the trend of packaging and delivering that have been taken from other industrial enterprises. For, we should not treat students or their thinking as objects to be manipulated toward predetermined ends; otherwise, the teaching and learning relationship is reduced to one of coercion (Kesson, 2004). Metaphysically, education should be understood as a science of doing, not as a science of making or producing. As Kesson noted, teaching is foremost about relationship. Moreover, this relationship involves possibilities that cannot be predicted. As Buber argued, when we are in a genuine dialogue with somebody (or when we talk with our students and see their faces), we let what to do next emerge from our dialogue as our intention is to establish a living mutual relation; predetermined goal and process-oriented talk is not a dialogue (Smith, 2000). Instructional designers should create resources and structures through or in which a caring relationship might be enhanced and a dialogue can take place.

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CHAPTER IV

PSYCHOLOGISM AND INSTRUCTIONAL TECHNOLOGY

Instructional technology (IT) has had an eclectic knowledge base including psychology, systems theory, audiovisual education, communication, engineering, and adult education and there have always been several paradigms in the field (Dills & Romiszowski, 1997a). Nonetheless, one cannot but notice the centrality of psychology in the theory base of the field in the US. For many, instructional design (ID) is "applied educational psychology in the best sense of the term" (Dick, 1987, p. 183); and the goal of IT, that is, facilitating learning, is understood as a psychological goal (Winn, 1989). Reigeluth (1983) stated that ID has developed out of psychology (or learning-theory) and media/communications, and the major portion of ID comes from the tradition of learning theory; he also stated that the birth of ID as a discipline must be credited to three psychologists (e.g., B. F. Skinner, Jerome Bruner, and David Ausubel). Similarly, Saettler (1990) argued that the recognition of IT "as a distinct field and profession in its own right" (p. 501) was an outcome of behaviorism and cognitive psychology in that the applications of scientific research, primarily psychological, became the bases of the process of instructional practice.

This hegemony of psychology in IT is not without its problems. Wilson (2005) stressed the need to look beyond psychology-based learning theories and seek out perspectives from various theory bases (see also Wilson & Myers, 1999). Put broadly, IT has failed to pay attention to political, ethical, cultural, and aesthetical issues (Carter, 1999; Damarin, 1994; Hlynka & Belland, 1991; Muffoletto, 2001; Nichols, 1991;

Nichols & Allen-Brown, 1996; Noble, 1996, 1998; Nunan, 1983; Reeves, 1995; Subramony, 2004; Voithofer & Foley, 2002; Yeaman, Koetting, & Nichols, 1994).

The centrality of psychology in the field of IT has never been comprehensively questioned; most instructional technologists have assumed that (behaviorist, cognitivist or constructivist) psychology is the "natural" foundation for education and thus for IT. The driving question of this article is: What are the problems of psychologism as found in the theories and practices of IT? Psychologism refers to a theory that tends to give explanatory preeminence to psychological functioning; a theory or system is psychologistic "if it assumes that psychological states and experiences enjoy an autonomous existence and that they serve as the foundation of other experiences and human actions" (Williams, 1990, p. 141). Similarly, psychologization (Apple, 1996) refers to the way in which psychological issues become centralized in theoretical discussions of IT, evacuating critical (including political, philosophic, and societal) issues from theoretical discussions of IT.

As I will argue, not only behaviorist ID but also some tenets of cognitivist and constructivist approaches to ID are psychologistic to the extent that, using a narrower psychological/epistemological language, they do not seriously deal with cultural, political (power), and ethical issues. To illustrate, the issue of whether design should be prescriptive or not is seen as an epistemological issue ("we cannot be prescriptive or control instruction because our psychological theories cannot make reliable predictions"), as opposed to ethical and political issues (i.e., whether it is right to exert control on the teacher's work or the student's learning).

I start by presenting a brief genealogy of American IT in relation to the influence of psychology. Moreover, I provide a critical and hermeneutical framework for psychology. I then discuss some problems of psychologism focusing on positivism, metaphysics, cultural ecology, and power. Apart from the historical analysis, this study is a primarily philosophic investigation; nonetheless it provides some very general guidelines for design.

Instructional technologists are encouraged to engage reflectively with the power-relations and ethical issues in which they are involved. The narrow psychologism in IT produces a kind of systematic blindness regarding cultural, political, and other issues. These same issues have been widely recognized as significant to design and technology more generally (e.g., Feenberg, 1999), but their importance in IT has been little considered. As I will try to make it clear, by criticizing psychologism I am critical of positivistic and/or narrow forms of psychology in IT, I point out a need for looking at psychology more comprehensively (e.g., critical and hermeneutical psychology).

Before presenting my arguments, a few words on my methodology is in order. Bringing various arguments from different disciplines, what I do is probably best captured by the term *bricolage*. The term comes from the works of German sociologist Georg Simmel and French structuralist Claude Lévi-Strauss. The French word *bricoleur* describes a "handyman" who makes use of the tools available to complete a task. My use of the term mainly comes from the work of Denzin and Lincoln (2000), Kincheloe (2001), Kincheloe and Berry (2004), McLaren (2001), Nelson, Treichler, and Grossberg (1992). Briefly, *bricolage* refers to transdisciplinarity, of which the "field" of cultural studies is a nice example. Although different terms have been used, methodologically

similar approaches can be found in instructional design and technology literature (Hlynka & Belland, 1991; Nichols & Allen-Brown, 1996; Rose, 2005; Yeaman et al., 1994).

Psychology as the "Savior" of Instructional Technology

Prior to taking up a systematic critique of psychologism in IT, I feel it is relevant to start by overviewing how IT emerged. Understanding psychologism in IT as a present problem entails recognizing the development of IT. As Foucault and many others have pointed out, (writing/understanding) history is never simply "the past"; history is always a product of the present. In other words, my investigation is motivated by the *present* issues; as it will be clear from the coming sections, it is geared towards an ontology of the present. An ontology of the present or a critical ontology of ourselves involves "the historical analysis of the limits that are imposed on us" and "an experiment with the possibility of going beyond them" (Foucault, 1984, p. 50). My focus is not to write a comprehensive history, but a brief genealogy, that is to say I have a certain problem in my mind (i.e., psychologism) and my perspective of historical investigation is informed by this present problem.

Let me start my genealogy with an example taken from the present. In a recent issue of *Educational Technology Research and Development* (ETR&D), a special forum is conducted on functional contextualism (see introduction by the editor, Ross, 2006). In addition to a leading piece on functional contextualism by Fox, the reactions of several leading theorists including Hannafin, Jonassen, Winn, and Reigeluth are included in the issue. Fox (2006) presents functional contextualism as an alternative to constructivism: like constructivism, functional contextualism also rejects objectivist epistemology, but

claims to provide a more solid philosophical position for an empirical science of learning and instruction. What is interesting from the scope of this article is that although functional contextualism is mainly a philosophical position, Fox presents it as "a new perspective emerging in psychology" (p. 5) and "a philosophical perspective emerging in behavioral psychology" (p. 7).

After this introduction the scene is well known; whenever a "new best way" (Hannafin, 2006, p. 40) is emerging in psychology, proponents of it attempt to provide a new foundation for IT. In Fox's case, "Functional contextualism seems to hold great promise for education and IDT [instructional design and technology]" (Fox, 2006, p. 7); "general rules and principles are used to predict and influence events" (p. 12); knowledge constructed by functional contextualists is likely to be "applicable to all (or many) similar such events, regardless of time or place" (p. 12). In his reaction to Fox, Winn (2006) suggests that experimental methods and quantitative data are essential for ID to be scientific. Reigeluth and An (2006) welcomes Fox's paper in that it encourages designers to produce "practical knowledge applicable to similar events regardless of time and place" (p. 49).

Now, I am not interested in the specific promises or limitations of functional contextualism (see the coming sections for a critique of positivism in psychology and IT, see also Jonassen [2006] and Hannafin [2006] for a critical appraisal of functional contextualism); all I want to point at is the *persistent* influence of psychology as a foundation for IT, and the influence wielded by new psychological trends over IT. To illustrate this point further, let me note that Rourke and Friesen (submitted) reveal how learning scientists' recent accounts of design-based research are mostly focused on the

assertions of the generalizability, objectivity, and scientific validity. Below I look at history in order to understand how psychology has become so central in the present. I will not be interested in specific media or technologies, but be more interested in the development of theoretical approaches.

Let me first note the place of psychology in education. Franklin's (1986) history of social control and curriculum in the United States shows how a *psychology* of social control had replaced a *sociology* of social control in intellectual discussion about schooling in early twentieth century. Popkewitz (1991) also noted the increasing importance of educational psychology in American education from early 20th century. Egan (2002) showed how, from Spencer and Dewey to Piaget, psychology has been central in education. Richards (1998) argued that

> to speak of American educational theory of the 20th century is to refer to the application of some psychological learning theory, especially: behaviorism (Skinner, Mager, Gagne, and so forth), cognitivism (Piaget, Kohlberg, Bruner), and humanism (Maslow, Rogers, Glasser). (p. 5)

As we will see, IT has been understood as applied learning theory. Historically, IT has been understood by many as having two fundamental components: (a) an instructional media or audio-visual component (e.g., hardware or some physical means used to deliver or present instruction), and (b) an ID component (e.g., a process component that indicates how instruction will be prepared for delivery via some medium, Dick, 1987; Reiser, 2002). Both the hardware approach and process approach have a long history; however, the foundations of the modern conception of IT appeared as an early application of psychology to the process of instruction at the turn of 20th century, especially in the 1920s when psychology was making its impact on instruction regarding

the sequencing of instruction, the organization of practice, the transfer of learning, and the testing of comprehension (Saettler, 1990). In other words, the seed of educational technology did not evolve out of the visual or audio-visual education movement, or the media approach of 1920s or earlier decades, but evolved out of the application of psychology to instructional processes.

The application of psychology to the process of educational technology declined after the 1930s and resurfaced with World War II (Saettler, 1990). As an academic field of study ID was pioneered by educational psychologists after World War II (Dick, 1987). From the beginning, psychology has been so influential in ID that, as opposed to the hardware or software aspects of technology, the psychological conception of IT is often referred to as ID (or instructional systems design, ISD) (see Ely, 1999). Similarly, as opposed to audio-visual instruction movement, a technology of instruction was based on "psychological principles and empirical data based on the total teaching-learning process" (Saettler, p. 169). Most of the major components of the ID process, such as Skinner's programmed instruction, Mager's popularization of behavioral objectives, Gagné's conditions of learning, events of instruction, and conditions of learning, Glaser's criterion-referenced testing, and Scriven's formative evaluation emerged in the mid-1950s through the 1960s (Dick, 1987; Reiser, 2002). The original work of Skinner and Gagné, among others, focused on the application of psychological principles to the design of classroom instruction, and occurred before many graduate programs in ID were created in the 1970s (Reiser). Additionally, many of those who have been IT professors were originally trained in psychology departments and functioned as educational psychologists (Dick, 1987).

Instead of focusing on devices or media, the focus of communications approaches shifted to the process of communicating information from a source (a teacher or medium) to a receiver (the learner). It is often acknowledged that the communications approach to educational technology from the 1950s altered the traditional framework of educational technology, which was largely the media or hardware approach (such as using motion pictures, television, audio and video-discs; Saettler, 1990). Some convergence of communication and educational technology took place between the 1950s and 1980s including Pask's conversation theory that offered a model to explain construction of knowledge or interaction between two or more cognitive systems (such as a student and a teacher). Nonetheless, from the early 1960s the influence of behaviorism did not let educational technology incorporate communication within its conceptual framework to any great degree (Saettler).

In the mid-1960s the communications paradigm moved closer to a systems approach (Saettler, 1990). For ID, the decade of the 1970s can best be represented as the decade of the systems approach (Dick, 1987). Typically, "rather than concentrating on analyzing the classroom environment or using concepts from general systems theory to gain a better understanding of why and how schools function as they do," ISD models have focused on producing instructional materials (Saettler, 1990; p. 354). This clearly shows the psychological focus of ISD in the sense that ISD understood learning as a psychological matter that has no history or society.

During the 1980s and 1990s, several new trends emerged and affected ID, including cognitivism, using microcomputers, the performance technology movement, constructivism, electronic performance support systems, rapid prototyping, and using the

internet in distance education (Reiser, 2002). Among these trends cognitivism and later constructivism have been perceived by many as a new paradigm for ID. The cognitive approach to educational technology, unlike behaviorism, pays attention to internal processes of behavior and sees the role of the learner not as responding, but as active, constructive, and playful. By the late 1970s and early 1980s, the cognitive model of learning began to replace the behaviorist model in educational technology (Saettler, 1990). In a cognitive model of ID, the organization, processing, and storage of information by the learner constitute essential elements in instructional development.

Many people have argued that the so-called "cognitive revolution" has great promises to educational technology (Saettler, 1990). A common perception seems to be that a "revolution" in psychology should bring a "revolution" in educational technology. Although claimed as a revolution, cognitivism did not bring any change with respect to the relationship between psychology and the field: psychology still was viewed as a foundation for the field, albeit a moving one. From this point of view, cognitivism was a step in consolidating the foundational place of psychology in the field. Many works from 1980s bear witness to this consolidation of psychology. For instance, in *Instructional-Design Theories and Models: An Overview of Their Current Status*, all of the theories or models have grown out of the learning-theory tradition (Reigeluth, 1983).

In 1990s, the constructivist approach to ID was perceived by many as a new paradigm—whether it is substantially different from cognitivism or not is another matter. Constructivism holds that "knowing is a process of actively interpreting and constructing individual knowledge representations" (Jonassen, 1991, p. 5), and claims that "learners can only interpret information in the context of their own experiences, and that what they

interpret will, to some extent, be individualistic" (p. 11). Similar to cognitivism, constructivism did not bring a major change with respect to the relationship between psychology and the field; it simply became yet another new foundation for the field. With the impact of constructivism, some have even argued that, unlike previous times, educational psychology and technology are "now engaged in an ongoing duet" (Salomon & Almog, 1998, p. 238). Some constructivists simply argue that they provide a better psychological theory for instructional practices (e.g., Duffy & Jonassen, 1991).

Now, in order to make it clear what I mean by psychologism in psychology and, by implication, ID, let me give the example of intelligence. Cognitive psychologists have not used a critical understanding to analyze the ways our consciousness is shaped by the world around us (Kincheloe, 1999). As a result, mainstream cognitive psychology confuses socioeconomic privilege with high intelligence. Learning and intelligence are assumed to be fixed and normative by mainstream educational psychology and instructional designers (Carter, 1999). We need to "spend more time uncovering the reasons that children of the poor and nonwhite perform as groups so poorly on standardized tests and come to school so often devoid of the skills schools require" (p. 35). It is hard to say that IT has facilitated/legitimized intuitive or indigenous ways of thinking and learning (Carter). For example, the inclusion of emotion would not be understood "as a mode of perception" (p. 273) within the methods of IT for building instruction. Instructional design as such is psychologistic because it ignores the modes of thinking and learning that belong to marginalized groups.

Accordingly, mainstream cognitive psychology often confuses socio-economic privilege with high intelligence. In educational theory, it is well-known that Piaget

theorized formal thinking as the highest order of human thought; the problems with such formal understandings of human thought have been described by Kincheloe (1999) as follows:

> Unconcerned with questions of power relations and the way they structure our consciousness, formal operational thinkers accept an objectified, unpoliticized way of knowing that breaks an economic or educational system down into its basic parts in order to understand how it works. (p. 19)

Our understanding of cognition would be psychologistic as long as we do not accept identity and personal competence with its social, power-related, and linguistic situatedness.

By now, it should be clear that psychology has played a foundational role in the mainstream of IT. Nonetheless, as Dills and Romiszowski (1997) and Hannafin (2006) point out, there have been multiple viewpoints/paradigms, or a heteroglossia, in IT. Seels and Ritchey (1994) mention three broad views as a growing body of alternative views in the field: these views are critical examinations of common position (such as criticism of the technology emphasis in the field by Striebel and Bowers), alternative theoretical orientations (such as the constructivism, situated learning, or the performance technology movement), or alternative foundational philosophies (such as the postmodernism of Hlynka and others). For the most part, critical examinations and postmodernism are nonpsychologistic in intent. Some articles have clearly taken their lead from cultural studies and humanities, including art, not psychology (see Hlynka and Belland, 1991; Rose, 2005). Constructivism seems to be psychologistic to the extent that it confines itself to cognitive psychology. In contrast to psychologistic focus of Duffy and Jonassen, Wilson (1997a) provides a more multidisciplinary/postmodern framework of

constructivism (see also Wilson, 1997b; Wilson, Teslow, & Osman-Jourchoux, 1995). Moreover, Duffy and Jonassen's (1991) understanding of situated cognition seems to be mainly psychologistic and epistemological; however, Striebel's (1991), Wilson's (1995), and Wilson and Myers' (1999) accounts of situated cognition is nonpsychologistic in the sense that they explicitly discuss issues related to value and ideology.

To recapitulate my historical analysis, many psychological approaches have been considered as "foundation" to instructional design (Driscoll, 2002). The problem with the narratives on "cognitive revolution" or "constructivism" in instructional design is that they lack questioning of the centrality of psychology; rather each new approach in psychology is celebrated as, to paraphrase Richards (1998), the new "Savior" of IT. Educational psychology (EP) and ID have been considered so close that some universities have combined EP and ID programs, for example, Florida State University's Department of Educational Psychology and Learning Systems or Brigham Young University's program of Instructional Psychology and Technology. ID theories and learning theories have been considered as "a house and its foundation, they are closely related" (Reigeluth, 1999a, p. 13).

Some even argued that ID should be considered as neoeducational psychology in the sense that ISD is a model or paradigm for conceptualizing educational problems (Dick, 1978, 1987). With respect to the aim of this paper, perhaps the most important implication of this closeness between psychology and the field is that they must have similar problems! Before dealing with the problems related to psychologism in IT, let me first introduce critical and hermeneutical psychology.

Critical and Hermeneutical Psychology

As an alternative to mainstream psychology, I now turn to psychology informed by critical theory and hermeneutics. As various political responses to mainstream psychology, critical psychology is an umbrella term. It includes the left, feminism, ethnic and antiracist politics, ecological movements and new forms of spirituality (Walkerdine, 2002). Critical psychology questions psychology's

> methods (too experimental and oriented to experimenter-defined laboratory rather than real-life tasks); its samples (limited mostly to young college students, primarily from the United States); its choice of research problems (driven by momentary fads, governmental financing priorities, and the need to fit a quantified lab paradigm); its evaluations of its findings (typically fails to examine the social and political implications of its work). (Sampson, 2000, p. 1)

Reflecting the situation in early 1980s, O'Sullivan (2000) commented that psychology "as a profession was unique in its absence of a critical viewpoint, contrasting with other fields as sociology, theology, philosophy, anthropology, political science and so on, which had well-developed critical viewpoints" (p. 137).

Critical psychology also refers to the value commitments of psychologists who are concerned with human betterments. Critical psychologists aim to help give voice for those persons (e.g., people of color, women, gays, and lesbians) who have been denied voice so far (Sampson, 2000; Ussher, 2000). Because psychology tends to individualize its understanding of the roots of social problems, it cannot understand the sociocultural context needed to identify and solve the problems (Sampson). With its noncritical stance, psychology has failed to rise to sociopolitical challenges (Sloan, 2000). Many societal issues such as racial prejudice and exploitation cannot be adequately addressed by the

current mainstream psychological inquiry (Sampson). In her award-winning article, Strickland (2000) revealed the tragic historical episodes of misuse of psychological concepts and methods and noted how some these misassumptions continue to influence the psychology of today. Strickland (2001) suggested that psychology will be better served ethically when psychologists recognize the biases of the discipline and give credence to the values of cultures of *the others* (i.e., women, immigrants, people of color, and minorities).

Now, in accord with practical/situated nature of ID, I focus on the practical philosophy and hermeneutics of German philosopher Hans-Georg Gadamer. Hermeneutics is the study of interpretation (and understanding). Gadamer's approach to hermeneutics is often called philosophical hermeneutics. Gadamer's philosophy is considerably affected by Martin Heidegger's critique of metaphysics, which I will discuss later. Practical philosophy is used in Aristotelian sense and as such practical philosophy and hermeneutics cannot be separated; in other words, in our practical affairs we depend on our ability to arrive at understanding and thus we must to interpret (see Gadamer, 2001).

I think a psychology informed by hermeneutics provides a rich language in order to understand human learning properly; moreover, it helps us to capture the *praxis* of instructional designers. (Note that *praxis* is much broader than the sense that one makes practical applications of scientific theories [Gadamer, 1981]. The term *praxis* "points to the totality of our practical life, all our human action and behavior, the self-adaptation of the human being as a whole in this world" [Gadamer, 2001, p. 78]). My preference of hermeneutical informed psychology is motivated by that it is nonpositivistic and at the

same time critical of strong relativistic aspects of postmodern social constructionism as it has been developed by some psychologists (Martin & Sugarman, 2001). From such a perspective, human psychological being is emergent within particular sociocultural contexts, but, once emergent, is not reducible to those contexts.

Methodologically, hermeneutics represents a modest third way and is an example of "beyond objectivism and relativism" (Bernstein, 1983). Thus, in *Truth and Method*, Gadamer (1975) claimed that understanding or interpretation cannot be found in any method—understood as a set of rules in natural sciences. This is not a rejection of the importance of methodological concerns in human sciences, but rather an insistence on the role of method and the priority of understanding as a dialogic, practical, situated activity (Malpas, 2005).

Our prior involvement, partiality, prejudgments, and even prejudices are not a barrier to understanding, but rather a condition to understanding and experience (Gadamer, 1976). The rationality, that guides our practice as a whole, was called *phronesis* (or practical wisdom) by Aristotle: "*Phronesis* is something that proves itself only in the concrete situation and stands always already within a living network of common convictions, habits, and values—that is to say, within an *ethos*" (Gadamer, 2001, p. 79). Kuhn (1970) showed the inevitability of received beliefs or traditions in the practice of scientific communities.

Phronesis (and of *praxis*, method) nicely captures the instructional designer's working life in practice; it also helps to restore education as *praxis* and *phronesis* (Böhm, 1994; Rourke & Friesen, submitted). Indeed, it is not possible for practical knowledge (e.g., education and ID) to proceed like mathematics or metaphysics, where necessarily

valid conclusions can be derived through logical deduction; human action lacks the necessary constancy and continuity for such a process, and because of its basically situational nature, it lacks that which applies universally (Böhm).

Instructional designers should not simply follow disembodied and decontextualized prescriptive principles or carefully articulated decision-making procedures (Winn, 1989). They make judgments in the concrete situation based on their experience, preferences, values, and traditions; such judgments could be understood as *phronesis*. At this point, we should understand that in ID activities, aesthetics play a greater role than we conventionally assign to it. We can say that our relationships with the world and our practical judgments are a result of our concrete dealings. As such aesthetics lies in the heart of any design activity because the "aesthetic experience is not just one kind of experience among others, but represents the essence of experience itself" (Gadamer, 1975, p. 63).

In other words, instead of setting general or abstract relationships with the world, we set concrete relations which are nothing but aesthetic relations. (An example is a concrete/unique relationship of an individual teacher with an individual student). Moreover, in our preference among various design options aesthetics plays an important role in the sense that we do not make judgments based solely on technical functionalities but on our sense of attractiveness in them. In the quarrel between instructivism and constructivism, perhaps aesthetics plays a greater role than epistemological issues. Arrow's impossibility theorem, which demonstrates that it is impossible to make a purely rational choice between even a limited number of alternatives when considering only a limited number of criteria, suggests that extra-rational (as Arrow defines rationality)

considerations, like aesthetical ones, actually do come to bear more frequently that we realize. Thus, instructional designers should give more focus to the aesthetical aspects of design (see also Parrish, 2005; Wilson, 2005).

Psychologism in Instructional Technology

Little of the work in critical and hermeneutical psychology has been linked to IT. In the following, I provide a discussion in order to fill the gap in this direction. I limit myself to the issues related to positivism, metaphysics, ecology and culture, and power. In criticizing psychologism, I am not against using psychology as a foundation in IT as long as it has a critical perspective.

Positivism, Control, and Prescription

Following the model of natural sciences, the goal of positivistic psychology is to predict and control behavior. With its positivist tenets, EP is considered to be neutral, objective, scientifically validated body of knowledge (Gallagher, 2003). Historically, IT has been deeply influenced by various forms of positivism (Carter, 1999; Hannafin & Hill, 2002; Muffoletto, 2001, 2003; Seels & Richey, 1994). To a large extent, IT as such has not deal with critical issues such as political (power), existential, and ethical ones. With the influence of positivism, most of the questions have been asked on the epistemological and instrumental level, for example, "Which learning theory/design works best?" We have seen almost complete absence of articles that employ critical theory as a methodology in the mainstream journals (see, Driscoll, 1991; Reeves, 1995).

In such noncritical or positivist view of the field, the examination of power, freedom, privilege, equality, and social justice seems to be irrelevant in ID (Carter, 1999). In the following, I attempt to show that the lack of critical perspectives in IT is related to psychologism of which positivism is a leading symptom. Indeed, perhaps the most important characteristic of psychologism for my analysis is the adoption of the metaphysics and methods of the natural sciences as appropriate for the study of human beings (Williams, 1990). I first deal with positivism and then with metaphysics in the next section.

From the outset, it is noteworthy that some versions of constructivism (e.g., Hannafin & Hill, 2002; Jonassen, 1991) collapse the issue of positivism to only a matter of epistemology (e.g., objectivism versus constructivism). This is not surprising because constructivism itself is seen mainly as an epistemological approach (e.g., Bednar, Cunningham, Duffy, & Perry, 1992); moreover, "the focus of radical constructivism is solely on epistemology" (Sharma, Anderson, Mao, Hsieh, & Xie, 2005, p. 25). In understanding positivism, I depart from such approaches because they do not deal with the issues of power. Positivism is a nexus of knowledge, power, and control, not simply an epistemological issue. Although most psychologists reject to be positivists; some critical psychologists have found the strong influences of positivism in contemporary (cognitive) psychology (e.g., Chow, 1991; Faulconer & Williams, 1985; Paranjpe, 1991; Smythe, 1991; Tolman, 1991). The critiques of positivism in psychology should be considered very important because they may weaken the epistemological basis of psychology (Chow).

Chow (1991) argued that the way psychologists talk about their experimentations especially in textbooks is positivistic, while in fact the practice of psychologists and their experimentations are best represented by what Popper (1965) called "conjectures and refutations." In other words, cognitive psychologists are trained as if they were conducting *atheoretical* experiments in order to make empirical predictions, control, or form casual links. However, in practice, cognitive psychologists conduct *theory-corroboration* experiments, the purpose of such experiments is "to ascertain the tenability of theories that implicate casually efficacious hypothetical mechanisms" (p. 142). Therefore, positivism fails to capture the practice of psychologists. Smythe (1991) has argued that if positivistic conception of science fails to capture practice of science, then cognitivism must fail as an approach to human cognition.

Excommunicating those who question the "scientific method" or "empirical science" as the only method from the field is a simple example of positivism (cf. Merrill, Drake, Lacy, Pratt, & the ID_2 Research Group, 1996). Merrill's acceptance of the "science" of instruction is typical of positivism and fundamentally ignores the limitations of "empirical data." Feminist psychologists, for instance, have argued that empirical methods of cognitive psychology cannot entirely capture women's experiences (see, for instance, Ussher, 2000).

As so-called "cognitive revolution" in education was felt more and more, there has been what American educational philosopher Greene (1994) noted as "a restiveness with regard to educational research" (p. 424). In her review of educational research, Greene also noted that there has been "a growing disenchantment with technicism and bland objectivist assumptions" (p. 424), as there has been more acknowledgement of the

importance of perspective in inquiry (e.g., gender, class, ethnic, and so forth). Moreover, the attention attracted by Schön's work on reflection-in-action and reflective practitioner may have been an indication of perceived deficiencies in positivism both in educational community (Greene) and IT community (e.g., Coleman, Perry, & Schwen, 1997; Wilson, 1997a; Winn & Snyder, 1996).

Additionally, the drive for control over teaching activities through "scientific principles" is also positivistic. Perhaps the drive for control is the most evident in Heinich's (1991) enthusiasm toward replacing teachers with instructional technology through its replicability and reliability. Heinich's goal is to exert complete control over instruction. As Nunan (1983) argued such instructional designers always justify this goal by appealing to theories and techniques which are "superior" to those possessed by teachers; I may add that psychology with its positivistic premises plays an important role in this alleged superiority. This (positivistic) approach to ID devalues the intuitive, unorganized, ineffective, personalized and subjective aspects of teaching.

Perhaps Heinich's positivistic approach does not represent the mainstream; the drive for control was popular in the first generation of instructional designers in 1960s as it is evident in the first definition of the field, prepared by AECT in 1963, which included the term "control." The term was later removed from the 1972 definition (for a historical analysis, see Januszewski, 2001). Nonetheless, although the term control was removed from the definition, the term prescription has been in currency among designers. For many, ID is a prescriptive science "because its primary purpose is to *prescribe* optimal methods of science" (Reigeluth, 1983, pp. 21-22), and in the sense that design theories "offer guidelines as to what method(s) to use best attain a given goal" (Reigeluth, 1999a,

p. 7). The aim to prescribe instruction and predict results is clearly an outcome of positivist psychology.

Note that I am interested in the problem of prescription as long as it is related to the separation of design and implementation of instruction; in other words, as long as design *prescribes* implementation of teachers. Conventionally, instructional designers hand down the end-products (e.g., content, strategies, evaluations, and so forth) to be implemented by teachers (Nunan, 1983, p. 3). From a cognitive perspective, Winn (1990) acknowledged that human behavior is unpredictable and indeterminate, the "predictability of human learning, upon which ID has always relied, cannot be relied upon" (Winn, 1989, p. 40). Winn (1990) pointed out difficulties in accommodating cognitive perspective in ID (see also Winn & Snyder, 1996). Winn (1990) linked the separation of design and implementation with behaviorism and also acknowledge its problematic nature (see also Winn, 1989); however, he noted that such a behavioral approach continues to influence (cognitivist) ID.

By their own admission, some of the leading constructivists (e.g., Duffy & Jonassen, 1991) did not dispute the need for prescriptions for instruction, they simply argued that their hope is "to establish an important link between prescriptive instructional theory and descriptive learning theory" (p. 10). Such constructivist line of argument, then, does not unequivocally aim to modify prescriptive ID. Nonetheless, learning in constructivist learning environments are less prescriptive (Hannafin & Hill, 2002); Bonner (1988) argued that cognitive psychologists object the prescriptive ID in which the instruction is acting upon the learner. Nonetheless, such cognitive (or constructivist) accounts do not explicitly account for power/control.

As long as cognitivism or constructivism is seen an epistemological matter, it cannot properly deal with the issues of power including control/prescription. Instructional designers should not remove "choice" on the classroom floor by "superior" or "scientific" management processes. This is not a technical issue but an ethical one; namely, teachers and learners *should* be able to do what they value most within their classroom. It is impossible to deal with this fundamental ethical issue when the matter is reduced to controlling or providing prescriptions for instruction. While the issue of control/prescription is ethical, exerting control over teachers' activities through prescriptive design requires ethical justifications, not epistemological ones (e.g., a better link "between prescriptive instructional theory and descriptive learning theory").

Perhaps the most significant critique of positivistic cognitive psychology in ID has been provided by Streibel (1991) from a situated cognition perspective. Streibel argued that discrepancy between ID theories and ID practice cannot be resolved because design activities are situated activities, that is, depending on specific and unique circumstances of the activities. According to Streibel (1991, 1993), instructional strategies should *orient* future teachers and learners for situated activities, *create* resources, and give up the notion of "teacher-proof" instruction, not *prescribe* how to teach or how to learn. In contrast to controlling instruction, we should aim to provide recourses to teachers and students. Winn (1989) pointed out that making instruction "teacher-proof" has also made it student proof, students are also decontextualized along with instruction.

Wilson (1997b) also criticized formal and decontextualized ID models, which are largely products of 1970s psychology, and emphasized the importance of the practice

(see also Wilson & Myers, 1999; Winn, 1995). AECT's 1994 definition of the field, that we mentioned in the beginning of the article, includes the term "resources," however as seen from Seels and Richey's (1994, p. 12) clarification (i.e., "[r]esources are sources of support for learning, including support systems and instructional materials and environments"), it does not specifically question prescriptive ID. Situated ID evidently does not aim to prescribe or control instruction.

Metaphysics

Most designers probably think that IT has nothing to do with metaphysics. In "The Contribution of Metaphysics to Instructional Technology: An Existentialist Perspective Based on Sartre's *Being and Nothingness,*" Moore and Garrison (1988) produced an interesting parody. The whole article is blank except a quotation from Shakespeare: Much ado about nothing. At face value, Moore and Garrison do not think metaphysics could contribute to IT; they do not even feel a need to justify the claim.

I believe that metaphysics, as the study of being and the nature of reality, can help us see the problems inherent in attempting to find "atemporal principles" in IT. Atemporal principles supposedly exist naturally and could be applied to any instructional situation without any historical or cultural specificity. Many instructional technologists have mistakenly devoted themselves to finding these principles. Such an approach is inherently metaphysical and should be discarded because human being and understanding lie in temporality (Heidegger, 1962). As Rorty (1995) noted, pragmatists aren't "very big on principles"; it is then ironic that although many instructional designers like to be pragmatists (e.g., Reigeluth, 1992), "principles" seem to be very popular (see Reigeluth,

1983, see also recently-published *The Cambridge Handbook of Multimedia Learning*, edited by Mayer [2005], which uses sets of "principles" as one of its primary organizing mechanisms).

According to Reigeluth (1983), instructional principles exist naturally and are discovered by educational researchers. More recently, functional contextualists have shown an interest in principles "applicable to all (or many) similar such events, regardless of time or place" (Fox, 2006, p. 12). Fox (2006) stated that functional contextualism is not based on positivism. Considering his enthusiasm toward control, prediction, and atemporality Fox's rejection is purely verbal. Fox's denial is ironic as even Skinner denied being a positivist (Paranjpe, 1991).

Metaphysics has "pointed to something constant and absolute" in order to account for the world (Faulconer & Williams, 1990, p. 51). As Heidegger's ontological investigations showed, attempting to set truth on atemporal and absolute ground makes impossible for temporal and situated human beings (*Dasein*) to understand anything. The temporality of human beings means that they "can be understood only in relation to its own time and future" (Gadamer, 1975, p. 89). As opposed to temporal nature of human understanding, metaphysical understanding gives primacy to abstraction, generalization, and *theoria.*

Heidegger (2002) argued that since Plato "there has been a fatal relocation of truth away from concrete things themselves as they naturally show and reveal themselves in the richness of our vernaculars toward the idea of the exchange of equivalents" (p. 36). By exchange of equivalents, Heidegger meant the exchange between representation and what is represented; this is correspondence theory of truth. The problem with this

correspondence theory of truth is that it is "abstract, one-sided, and fragmented truth of general equivalence" (p. 36). In contrast to such abstract conception of theory, Heidegger proposes truth as *aletheia* or disclosure; this truth is concrete truth as world disclosure. Instructional theory should not aim to grasp things as *sub specie aeternitatis*, that is, "under the aspect of eternity."

Following Heidegger's critique of metaphysics, we should value human beings' (including teachers) primordial, concrete, and situated dealings with thing and human beings (including students). Such a critique of metaphysics, as I will stress later, helps us to appreciate the practical/aestetical (i.e., intuitive, unorganized, ineffective, personalized, and subjective) aspects of teaching and learning (c.f. Nunan, 1983).

Cultural Ecology

Because psychology lacks indigenous concepts and tools to capture local knowledge and points of view adequately; psychologists in the nonWestern world cannot make meaningful social and cultural contribution to their societies (Adair & Kagitcibasi, 1995; Nsamenang, 1995). One of the disturbing problems with psychological discourse as such, including constructivism, is that it is completely inadequate to deal with ecological disaster. Bowers (2005) argued that constructivist approaches (including Dewey's and Freire's approaches) lead to the form of individualism and the destruction of community that is required by the spread of technology/consumer-dependent lifestyle. Similarly, child-centered education, for example, Piaget's, tends to abstract child's personal biography and local context from his cultural biography and institutional context (Bernstein, 1977). Using a psychological and epistemological discourse and stressing the

learner's construction of knowledge, constructivism ignores that human existence is part of larger ecology of interdependent relationships and deemphasizes the role of intergenerational knowledge that sustains a viable cultural and environmental commons (Bowers, 2005).

It is hard, if not impossible, to find writings in IT that emphasizes the importance of intergenerational knowledge which are less detrimental to ecology. Although Vygotsky's understanding of cultural/historical basis of learning and Bruner's understanding of mediating role of language may receive a very brief mention in some constructivist writings, the deeper implication of their efforts to give culture a more central role in learning is ignored (Bowers, 2005). In ID, the small amount of the appropriation of the psychology of Vygotsky is largely limited to "zone of proximal development" (ZPD); (see for instance a few mention of Vygotsky in various articles in *Instructional Development Paradigms*, edited by Dills & Romiszowski, 1997b; *Constructivism and the Technology of Instruction: A Conversation*, edited by Duffy & Jonassen, 1992; and *Instructional-Design Theories and Models: A New Paradigm of Instructional Theory*, edited by Reigeluth, 1999b). In other words, Vygotksy's psychology is stripped of its cultural-historical aspects in ID; this is nothing but psychologism.

Power

Many instructional designers appear to be unwilling to pursue a dialogue about why power and privilege would be considered a part of ID projects (see Carter's [1999] distressing experiences as an instructional designer). This is surely an effect of positivism

in that the issues related to power seem to be irrelevant to what instructional designers do. For instance, a good deal of post-Vygotskian research has focused on "the effects of interaction at the interpersonal level, with insufficient attention paid to the interpersonal and socio-cultural levels" (Daniels, 1995, p. 517). Because such research does not aim to understand power structures beyond *immediate* context of classroom, personal competence is stripped of its situatedness and power-relatedness (Kincheloe, 1999); in other words, research and practice tend to psychologize failure within classroom, and not strive to understand the *real* cultural and socioinstitutional context of failure (we take this distinction between immediate and real from Marcuse, 1964). For instance, as Postman (1996) pointed out, most of the literature about the educational significance of computers fails to deal with existential issues:

> It turns out that Little Mary may be having sleepless nights as often as Little Eva, but not because she wants to get a leg up on algebra lessons. Maybe it is because she doesn't know who her father is, or, if she does, where he is. Maybe we now can understand why McIntosh's lad is bored with real world. Or is he confused about it? Or terrified? Are there educators who seriously believe that these problems can be addressed by new technologies? (p. 48)

Of course, failure is more than a psychological or individual deficiency; pyschologizing student failure is ideological in the sense that it blames the student while it protects the establishment from criticism (McLaren, 1998).

In most of the constructivist writings, including what Reigeluth (1999a) celebrated as the new "learning-focused paradigm of instruction" (p. 19), power is seen as a fixed possession of the "oppressive" teacher, liberty became synonymous with lifting of that repression (Walkerdine, 1992). Such understanding of power fails to understand modern forms of power (and thus oppression), according to which, power is a relation

(between forces) not a possession (Deleuze, 1988; Foucault, 1980). Despite their claim contrary, both teacher-centered instruction and learner-centered instruction do not eliminate the reproduction of inequalities (Sadovnik, 1991). From a poststructural feminist perspective, Walkerdine (1984, 1992) showed how progressivism could be also oppressive and makes oppression invisible. Similarly, critical sociologists have showed that educational domination functions more effectively when it is invisible (e.g., "implicit hierarchy masks the power relationships," Bernstein, 1977, p. 118; see also Bourdieu, 1986).

Educators tend to psychologize the failure (psychologizing here means a complete focus on cognitive aspects of the individual learner as if the failure was only a matter of individual aptitude) and misread or ignore the cultural and cognitive significance of the children of disadvantaged groups in more flexible instructional environments (Bernstein, 1990; Sadovnik, 1991).

Conclusion

1. We have still yet to come to terms with cultural/historical psychology in instructional technology.

I have argued that controlling/prescribing instruction is an effect of psychologism that manifests itself as positivist psychology, which focuses on epistemological questions. ID is often referred to as "linking science," a metaphor taken from John Dewey. What is problematical with this metaphor is that ID is understood as a linking science between learning theory (or psychology) and educational practice (see Bednar et al., 1992; Reigeluth, 1983). I have attempted to show that such a conception leads to psychologism

and is blind to the issues of power, ethics, cultural ecology, and so forth. I would like to propose that ID should be seen as a linking science between various educational studies and educational practice. We should stop what Wilson (2005) properly called "psychology envy", rather than accepting psychology as a source of "truth" for the field, we should interrogate it as a *regime of truth* (Foucault, 1980), that is, a nexus of power and knowledge. We do not need to despise psychology as foundation for the field, but rather we should embrace a critical psychology in which sociocultural and historical issues are intrinsic to psychological ones.

2. We should create resources for teachers and learners, not control/prescribe how to teach or how to learn.

As a broad guideline for reflective or mindful professional practice, instructional technologists should look for ethical justifications, not technical or epistemological ones. If exerting control on teachers' work, for instance, is an ethical issue as teachers are not allowed to pursue their own agenda, then its justification should also be regarded as an ethical issue. IT should not be viewed as "foundational" or "prescriptive," but more as a "resource" for teaching activities. Instructional designers should take a humble role in providing resources for educators and not take precedence over teacher's authority. Knowing learners and working with them closely, teachers are in the best position to modify, prescribe, and implement instruction.

The essential role of ID should be seen as providing "resources" for teachers and learners, not as providing prescriptions. In the case of resource, teachers (and learners) select among various materials and still control instruction (Nunan, 1983); teachers are largely responsible for making decisions on the classroom floor or online space. As

opposed to prescriptivist ID, a better strategy to improve instruction would be that teachers should be well schooled in ID in order to modify and invent instructional strategies (see Winn, 1990).

3. We should pay attention to practical nature of human relations/learning.

As I have argued we should go beyond the aim of "control" which we have taken from positivistic psychology, because controlling cannot deal with practical/aesthetical nature of human learning. Following the lead of hermeneutics, we should acknowledge that our understandings are incomplete, partial, prejudged, conditioned, and situated; thus they cannot be controlled by positivistic methods. The importance of perspective in experience and inquiry (e.g., gender, class, ethnic, and so forth) should be acknowledged. The practical/aestetical (i.e., intuitive, unorganized, ineffective, personalized, and subjective) aspects of teaching and learning should be valued (Nunan, 1983).

4. We should go beyond celebrating a "learning-focused paradigm of instruction" and consider modern forms of power.

Despite the rhetoric of "progressivism" about valuing each child, the child-centered education "fails to acknowledge the embeddedness of pedagogic practices in their institutional contexts, with their own power structures and culture-specific values and practices" (Chouliaraki, 1996, p. 105). Progressive instructional designers, including constructivists and the advocates of "learning-focused paradigm of instruction," should go beyond epistemological and pragmatic issues (e.g., objectivism vs. constructivism and what works) that are blind to the new active forms of "invisible" power in flexible environments. Thus, as Popkewitz (1998) argued, the notion of power in constructivist writings is problematic (see also Bernstein, 1977, 1990). In other words, the problem-

solving abilities and capabilities of students are not universal; when they are presented as universal/natural and used as norms to judge and differentiate among children, the effects of power to divide those students into groups often go unnoticed.

Since the early 1990s, there has been some accommodation of critical perspectives in the field, at least in AECT community (see Seels & Richey, 1994). I think this critical line of inquiry should be valued if we do not see instructional designers as mere technicians. As cultural workers instructional designers must seek to understand the political and ethical issues inherent within their activities (Carter, 1999). With the increased use of technology in rapidly changing the educational settings, instructional designers face more ethical, cultural, aesthetical, and political issues. That is why it is imperative to go beyond uncritical acceptance of psychology; being faithful to the eclectic nature of ID, we should continue to expand our knowledge base in order to properly understand the totality of our human practice.

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CHAPTER V

CONCLUSION

Using a multiple-paper format, the dissertation provided critiques of instrumental rationality, objectification, and psychologism in instructional technology (IT). By summarizing and synthesizing the previous chapters and discussing the implications of this study for IT, this final chapter provides a tentative formulation of a *critical instructional technology* that is politically and ethically sensitive. It also situates the findings of this study in the context of critical educational studies. In this context, critical educational studies refers to not only critical pedagogy (Apple, Freire, Giroux, and so forth) but also the work of others including Basil Bernstein. While each article in this study presents specific implications for IT, this concluding chapter identifies and presents findings of this study as a whole. These are presented below in italics followed by some discussion.

- *Critical instructional technology argues that IT can never be politically neutral.*

As Cherryholmes' post-structural analyses showed, major educational theories (i.e., Bloom's taxonomy, Tyler's rationale, and Schwab's "The Practical 4") claim to be ideologically neutral, advocate separating educational decision making from ethical considerations, and ignore the effects of power in discourse-practice (Cherryholmes, 1988). Various critical educators, on the other hand, have insisted on the political nature of educational acts (McLaren, 1998). Schools as political institutions merge with critical pedagogy's concern with creating a social and educational vision to help teachers direct their own professional practice (Kincheloe, 2004). Throughout this study, I have argued

that instructional design (ID) is unavoidably political as there is a power relation between designers and teachers/students in terms of exerting control on the instructional processes.

- *Critical instructional technology is sensitive to ethical issues related to design.*

I have claimed that education and ID should be seen as *sites of obligation* (cf. Readings, 1996). This study began on the premise that, without ethical-political considerations of education, a notion of efficiency based on instrumental rationality is devoid of meaning. Chapter II argued specifically that this is indeed the case. Instructional designers must be guided by *phronesis* (the disposition to act rightly). Instructional designers should be concerned with whether, when, and in what ways it is *right* to exert control on the teacher's work and the student's learning. As instructional technologists/designers produce technological products/objects and those products are imported into the classroom, these products should not be designed to replace the teacher because in so doing they will likely destroy important caring relationships between teachers and students. Instead of controlling the whole instructional process, instructional designers should create resources and structures through or in which a caring relationship between teachers and students might be enhanced, and in which dialogue can take place.

- *Critical instructional technology is informed by critiques of instrumental rationality.*

Similar to critical educators (Carr & Kemmis, 1986; McLaren, 1998), critical instructional technologists have insisted on critiquing instrumental rationality and attempted to orient the field toward practical and emancipatory human interests (e.g., Koetting, 1979; Streibel, 1993). Chapter II argued that instructional designers should not

be conceptualized as mere technical persons, and explored the notion of the designer/technologist as a *specific intellectual*. The role of the specific intellectual is to reveal and change the regime of the production of truth. This chapter also claimed that instructional technologists should broaden the notion of efficiency that includes not only cost-effectiveness and time, but also ethical and political issues such as control, deskilling, and proletarianization.

- *Critical instructional technology is critical of positivism.*

The critique of positivism is central in critical theory (Habermas, 1971; Horkheimer, 1972) and critical educational studies (Greene, 1994; Kincheloe, 2004). This study also focuses on the importance of positivism in shaping what goes on in education and knowledge production. Chapter IV argued that controlling/prescribing instructional events is an effect of psychologism that manifests itself as positivist psychology, which focuses on epistemological questions and largely excludes discussions on the issues of power, temporality, culture, ecology, and ethics. Instructional designers should create resources for teachers and learners, not control/prescribe how to teach or how to learn. Throughout the chapters, I criticized the deskilling of teachers and emphasized the importance of the teachers' professional status in education, a common theme with critical pedagogy (Apple, 1986, 1995; Kincheloe, 2004; McLaren, 1998). Critical pedagogy insists on teachers as knowledge-producing professionals, not as "information deliverers."

As opposed to a prescriptivist ID, a better strategy to improve instruction would be that teachers should be well schooled in ID in order to modify and invent instructional strategies (see Winn, 1990). Instructional designers' meaningful technological

interventions need to be aligned with approaches to professional development of teachers, not with the objectification in which the subjectivities, bodies, and faces of teachers and students become irrelevant. Teachers should be in control of what they do in practice and have a voice in ID processes. Instructional designers should not remove "choice" on the classroom floor by "superior" or "scientific" management processes. This is not a technical issue but an ethical one; namely, teachers and learners *should* be able to do what they value most within their classroom.

- *Critical instructional technology is attuned to the importance of investigations on metaphysics.*

As I have argued in Chapter III, the source of the problem related to objectification and positivistic control of instruction is metaphysical in the sense that the intelligibility (being) of educative knowledge is equated with information packets, and then education is equated with the *delivery* of information. As Heidegger's metaphysical analysis showed, education is not the transmission of information; students are not empty containers waiting to be filled. This false understanding of education is related to and reflects the nihilistic logic of *enframing* "by which intelligibility is 'leveled out into the uniform storage of information'" (Thomson, 2001, p. 254). As I have argued in Chapter IV, following Heidegger's critique of metaphysics, we should value teachers' concrete and situated dealings with students, not focus exclusively on generalizability/replicability and thus controlling instruction.

- *Critical instructional technology supports the idea that power is a relation and operates invisibly.*

As I have argued in both Chapter II and Chapter IV, we should go beyond celebrating "learning-focused paradigm of instruction" and consider modern forms of power in which inequalities are reproduced invisibly. Simply caring about students does not constitute a critical pedagogy, the power dimension must be brought to bear in a way that discerns the ways particular students get hurt (Kincheloe, 2004, p. 9). Power often operates in hidden ways in education. As Popkewitz (1998) argued, the notion of power in constructivist writings is problematic (see also Bernstein, 1977, 1990). In other words, the problem-solving abilities and capabilities of students are not universal; when they are presented as universal/natural and used as norms to judge and differentiate among children, the effects of power to divide those students into groups often go unnoticed.

- *Critical instructional technology bears witness that rethinking IT requires unpacking psychological power/knowledge.*

As it has been illustrated in Chapter IV, rather than accepting psychology as a source of "truth" for the field, we should interrogate it as a *regime of truth* (Foucault, 1980), that is, a nexus of power and knowledge. Instructional designers should lose their "psychology envy" and seek out perspectives from various theory bases (Wilson, 2005). We do not need to reject psychology as a foundation for the field, but rather we should embrace a critical psychology in which socio-cultural and historical issues are considered intrinsic to psychological ones. We should pay more attention to the writings on the cultural-historical aspects of psychology, i.e., post-Vygotskian, post-formal, and hermeneutic psychology. To illustrate, using ideas from various disciplines including critical theory, cultural studies, ecological theory, feminism, and poststructuralism, post-formal psychology refuses to view psychology as separate from power (Kincheleo,

1999). It views psychology as a technology of social, economic, and political organization, as it defines normalities. Through normalization, nonWhites, for instance, could be stabilized and routinized in a predictable manner.

Suggestions for Further Research

Critical work on IT is still in its beginning stages as there are only a small number of theorists working in this area of study. As this study demonstrated, there is much to learn from various areas of study, including cultural studies, hermeneutics, critical pedagogy, the work of Heidegger, and postformal psychology. We have yet to come to terms with a comprehensive and critical psychology in IT. As mainstream educational psychology emphasizes learning and teaching without referring to larger political-economical, social, cultural, and philosophical contexts, recent works in postformal psychology and hermeneutic psychology warrant more discussions in IT. Further analyses of the work of Foucault, Popkewitz, Bernstein, and Bourdieu will aid in strengthening our understanding of how power (invisibly) operates in education and IT. Furthermore, we need empirical studies that aim to show what kinds of ethical and political issues are involved in various ID projects.

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