

9. CRITICAL THEORY AND EDUCATIONAL TECHNOLOGY

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9.1 INTRODUCTION *

Writing about critical theory is interesting and challenging when several critical theories exist, and they are ever-changing. For people who believe in verities, these changes can be exceedingly problematic. However, many critical theorists revel in the struggle it takes to become familiar with diverse, contradictory, and even conflicting theories and meanings. Helping educators interested in educational technology to understand and adopt critical theory may be even more challenging, since the typical experiences of these educators do not include much conscious attention to critical theory.

Partly in response to this lack, one of the goals of this chapter is to help readers understand critical theory by staying within a somewhat foreshortened conception of it. Thomas McCarthy's (1991) description of the main aspects of critical theory implies the conception the authors of this chapter have in mind:

Critical theory challenges the notion of pure reason, showing its changeability depending on the culture, the history, and the power in which it is embedded.

- Critical theory rejects the “Cartesian picture of an autonomous rational subject” who is capable of controlling the world.
- Critical theory emphasizes the practical over the theoretical, but the two are inseparable.
- Knowledge is not disembodied from the test of existence, though a distanced or objectivating understanding of knowledge is needed.
- Established human sciences, scientifically trained experts, and rationalization are all closely analyzed by critical theorists.
- Critical theory's major purpose is to make problematic what is taken for granted in culture, so that

a degree of social justice can be had by those who are oppressed (p.43).

At this point, some readers are noting that the view just presented is not all that foreshortened. Perhaps it is more accurate to say this chapter addresses critical theory à la the Frankfurt School and Jürgen Habermas, and it crosses theoretic borders into critical theories that are feminist, postmodern, poststructural, deconstructionist, and critical pedagogical. However, this chapter leaves a good deal of the study of these latter views—particularly the post-modern—to the chapter by Yeaman and Hlynka, in this volume (see Chapter 10).

9.1.1 Critical, Educational Technology and Language

Note that *critical* is not meant to indicate a theory that examines only the negative. Critical theories seek to reveal the contradictions, social inequalities, and dominances; to this extent they can be called *negative*. However, it might be more accurate to say that because critical theories run contrary to that which oppresses people, the theories usually are positive and hopeful.

Educational technology, as it is used here, refers to media and hardware and the conscious, systematic application of technologies such as the processes of instructional design. But it also indicates more than this mundane description. Educational technology includes the ways in which technology gets into learning and schooling without anyone taking much formal notice. A number of authors (e.g., Apple, 1986; Bowers, 1993; Damarin, 1994; Koetting, 1994; Schrage, 1994; Taylor & Johnsen, 1986) argue that infusions of technology into learning and schooling are not guided so much by conscious, empirical, theoretical knowledge about learning as much as they are by so-called progressive, productive, and revolutionary mentalities that have many deleterious and often hidden effects. These manifestations of educational technologies are cultural phenomena in that they are widespread and largely taken for granted. It is these cultural manifestations of educational technology to which we also are referring.

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2 I. Foundations for research in educational communications and technology

The authors also acknowledge from the outset that the language of critical theory is at times difficult to understand. Goodman (1992) says that the language is needlessly abstract and jargon laden. It often seems to be aimed at building individual careers by criticizing the work of others, and it emphasizes the ways in which people are oppressed and despairing. Later in the chapter, we indicate refutations of these claims but, for now, note that we try to use less-difficult language where possible, and we have no illusion that the language is always easy to understand.

9.1.2 Limits of the Chapter

The scope of this chapter does not allow for an exhaustive examination of the ideas, people, places, or actions related to the several decades of critical theorizing in education and elsewhere. For fuller views and histories, readers should examine authors such as Yeaman and Hlynka (see Chapter 10) and Arato and Gebhardt (1978); Aronowitz and Giroux (1991); Bernstein (1976); Ellul (1964, 1990); Foucault (1976); Giroux (1983a, 1991); Giroux and McLaren (1994, 1994a); Grundy (1987); Held (1980); Hoy and McCarthy (1994); Ingram and Simon-Ingram (1991); Jay (1973); Lather (1991); Luke and Gore (1992); Marcus and Tar (1984); Martin, Gutman, and Hutton (1988); McCarthy (1978, 1991); Roderick (1986); Wexler (1991); and Young (1990). The first several pages, at least, of Yeaman's (1994a) "Deconstruction and Visuals: Is This a Telephone?" also provide a very good introduction to various histories, versions, and examples of critical theories.

Note, too, that most of the works in this chapter represent obvious critical-theory pieces, referring directly to aspects of critical theory or authors in the field, for example. However, other works appear because they are about oppression, freedom, technology as philosophy, and/or research that reflects an approach used by critical theorists. That is, several works fulfill the spirit of critical theory and, so, are included.

One more limitation: This chapter is not as much an example of critical theory as it is a review of critical theories. The authors are trying to describe and analyze this complex and, we think, noble enterprise, but we are not trying necessarily to bring our own critical analysis to bear, except inasmuch as our own subjectivities unavoidably inform our writing.

Despite these limits, and because critical theory speaks to many conceptions of educational technology outside the mainstream, critical theory is worth examining in some detail to establish its value in making educational technology more fully understood, meaningful, and even emancipatory.

9.1.3 Chapter Overview

After an introduction to several of the thinkers, ideas, and works associated with critical theories, an examination of the relationships of critical theories to education is pre-

sented. This is followed by an exposition of the work that has been done in the area of critical theory as that work relates to educational technology. Near the end, the chapter turns to problems associated with critical theories and, so, with critical theories about educational technology. The chapter ends by suggesting ideas to help educational technologists proceed with being critical theorists and by explaining why doing so is important.

9.2 FOUNDATIONS OF CRITICAL THEORY

The Institute for Social Research (the Frankfurt School) was founded in 1923 in Frankfurt, Germany. Its *Journal of the Institute for Social Research* published Horkheimer's "Traditional and Critical Theory" in 1937, which may be taken as the formal birth date of the institute's school of critical theory. Its most prominent early members included Theodor Adorno, Erich Fromm, Jürgen Habermas, Max Horkheimer, and Herbert Marcuse (Ingram & Simon-Ingram, 1991). McLaren (1994a) suggests that Michael Apple, Paulo Freire, Henry Giroux, Maxine Greene, Bell Hooks, and Jonathan Kozol, among others, represent current critical theorists:

Ingram and Simon-Ingram (1991) state that early critical theory has been variously characterized as a radical social theory (or sociology), a sophisticated form of cultural criticism combining Freudian and Marxist ideas, and a utopian style of philosophical speculation deeply rooted in Jewish and German idealism. For their own part, critical theorists saw themselves as responding to the historical events of the day. The changing composition and direction of the European labor movement and the evolution of Soviet communism and Western capitalism attracted their attention initially. They later expanded their focus to include the decline of patriarchy in the nuclear family; the psychosocial dynamics underlying authoritarian, anti-Semitic and fascist tendencies; and the rising potential for totalitarian mind control in the mass production and consumption of "culture" (p. xix).

Carr and Kemmis (1986) point out that the early critical theorists also saw positive science being applied indiscriminately:

Science had become an ideology, a culturally produced and socially supported, unexamined way of seeing the world which shapes and guides social action. As such, science's role had become one of legitimating social action by providing "objective fact" to justify courses of action. Questions of values underlying these courses of action were believed to be beyond the scope of science and were thus left unexamined. Scientific results merely distinguished more effective courses of action from less effective ones and explained how outcomes occurred—not whether they should be allowed to occur. Far from being a relentless inquiry into the nature and conduct of social life, science was in danger of taking forms of social life for granted and reflecting only on "technical" issues (p. 132).

In the face of an historical division of rational inquiry either into scientific, fact-based analysis or into the existential, poetic, religious nature of existence,

The intellectual project of critical theory thus required recovering from early philosophy the elements of social thought which uniquely concerned the values, judgments, and interests of humankind, and integrating them into a framework of thought which could provide a new and justifiable approach to social science (Carr & Kemmis, 1986, p. 132).

So, the critical theorists were concerned not only with disclaiming rationality, science, and the technical altogether but rather with returning them to balance with other aspects of life, such as moral perspectives.

The early critique of capitalism, hinted at above, is related to Marxist theory. This relationship can sometimes evoke negative reactions in those unfamiliar with critical theory. However, most early critical theorists were forced to analyze the Marxist orientation and move away from it. Giroux's (1983b) analysis helps us to understand this history:

It is particularly in the rejection of certain doctrinal Marxist assumptions, developed under the historical shadow of totalitarianism and the rise of the consumer society in the West, that Horkheimer, Adorno, and Marcuse attempted to construct a more sufficient basis for social theory and political action. Certainly such a basis was not to be found in standard Marxist assumptions such as: the notion of historical inevitability; the primacy of the mode of production in the shaping of history; and the notion that class struggle as well as the mechanisms of domination take place primarily within the confines of the labour process . . . the focus of the Frankfurt School's research downplayed the area of political economy and emphasized instead the issue of how subjectivity was constituted, as well as the issue of how the spheres of culture and everyday life represented a new terrain of domination (p. 10).

Despite this move away from Marxism, capitalism remains an important issue for many critical theorists. Habermas, for example, believes that capitalist societies oppose democracy, partly by discouraging rational communication and encouraging destructive beliefs in "bourgeois ideologies revolving around competitive achievement, possessive individualism, familial privatism, and consumerism" (Ingram & Simon-Ingram, 1991, p. xxxii).

Within the field of education, too, analysis of capitalism occupies critical theorists (e.g., Bowles & Gintis, 1976; Feenberg, 1991; Greene, 1993; Liston, 1988). We hear McLaren (1994b): "Situated beyond the reach of ethically convincing forms of accountability, capitalism has dissolved the meaning of democracy into glossy aphorisms one finds in election campaign sound bites or a bargain basement sales [sic] in suburban shopping malls" (p. 192).

Critical theorists also suggest that modern social crises, say in education or government, are related to the intrusion of overly rational (scientific, analytical, technological), instrumental, means-ends philosophies that detract from reflection on our ultimate ends—ends related to good and bad, right and wrong. Over time, we have largely abandoned moral perspectives. Of course, critical theorists do not always agree with one another about specifics in the moral realm. Marcuse argues for a hedonism, where true "pleasures" are those that allow for the complete development of human intellectual and sensual faculties. On the other hand, Habermas (1983/1990) says that the best way to uncover universal moral principles is via rational argumentation, rational discourse.

Several methodologies are associated with the work of critical theorists (Popkewitz, 1990). Of these, the main method is "immanent critique, which proceeds through forcing existing views to their systematic conclusions, bringing them face to face with their incompleteness and contradictions, and, ultimately, with the social conditions of their existence" (Young, 1990, p. 18). To this end, strands of methods from disciplines such as psychology, economics, history, sociology, and philosophy have informed the research of critical theory. Horkheimer's interdisciplinary approach combined the objective, explanatory methods of traditional theory (science) with empathetic, subjective, and historical approaches. Marcuse used psychiatric theory to argue that under the imperative of capitalist production, societies have become less free and less happy. Habermas argues for the method of communicative action, where "rational justification must be conceived as a dialogical process of reaching agreement on contested statements" (Ingram & Simon-Ingram, 1991, p. xxvii).

Action research is a commonly used method which Grundy (1987) describes as social research aiming to help participants via improvement and involvement. *Improvement* often means that material contexts need to be bettered. *Involvement* means "it is always the knowledge generated from within the action research group which is to be regarded as the authentic and legitimate basis for action, not knowledge from 'outside'" (Grundy, 1987, p. 143). The process of action research is to spiral through action and reflection, planning and observation. Reflection and planning take place via discourse; action and observation are carried on via practice. Grundy points out that the underlying justifications for action research are "the interrelatedness of truth, justice, and freedom" (p. 144).

9.3 HABERMAS'S EPISTEMOLOGY

Habermas is one of today's best-known critical theorists, and he finds his way among the foregoing foundational issues by way of his epistemology about human interests, and the knowledge, medium, and science associated with each. Carr and Kemmis (1986, p. 136) schematize Habermas's epistemology in the following table:

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Interest	Knowledge	Medium	Science
Technical	Instrumental (causal explanation)	Work	Empirical- analytical or natural sciences
Practical	Practical (under- standing)	Language	Hermeneutic or “interpretive” sciences
Emanci- patory	Emancipatory (reflection)	Power	Critical sciences

Ingram and Simon-Ingram (1991) summarize Habermas’s thinking about the sciences and the interests as follows:

The *empirical-analytic* sciences incorporate an objectifying experimental method that constitutes nature as a lawful system of interconnected facts. This method refines a prescientific mode of instrumental activity necessitated by a *technical* interest in controlling nature. The *historical-hermeneutic* sciences incorporate an interpretive method that constitutes social reality as a symbolic text comprising meaningful actions, artifacts, and events. The method of subjective understanding refines a prescientific mode of communication activity necessitated by a *practical* interest in coordinating action and establishing a common identity (or mutual understanding) between persons. Finally, the *critical social* sciences incorporate a reflective method that combines both objectifying (causal explanatory) and interpretive procedures in determining which social regularities are invariant and which are not. The critique of ideology refines a prescientific mode of critical self-examination necessitated by an *emancipatory* interest in achieving freedom from domination (p. xxx).

So, critical social sciences help individuals understand how their aims and purposes are subordinated to technical and practical interests such as science and technology. In this way, the critical sciences help people act to relieve oppression.

A major critique of Habermas’s theories has been that they do not convincingly show they are free of ideologies and better than the empirical-analytical or hermeneutic sciences they wish to ameliorate. Habermas’s response to these criticisms has been to develop his theory of communicative action, aspects of which are described succinctly by Ingram and Simon-Ingram (1991):

Communication (speaking) is the primary vehicle by which personal and social identity is shaped and mutual understanding regarding a shared world is brought about. Language, Habermas argues, has evolved to the point where one can distinguish propositional (descriptive), interpersonal (prescriptive), and personal (expressive) uses. In everyday speech geared toward facilitating interaction . . . [*speech action*] all three uses are combined. For example, whenever I

promise to do something I simultaneously assert (describe) something to be done, prescribe to myself an interpersonal obligation, and express a personal intention. Most important, what I say (describe, prescribe, and express) is tacitly accompanied by validity claims: to the truth of what I assert to be the case, the rightness of what I prescribe, and the sincerity of what I express (p. xxxi).

The validity of any claims about truth, rightness, and authenticity is tested through argumentation, and only those arguments that meet (or could meet) with the approval of all affected by them can be considered acceptable. For Habermas (1981/1984), this is rational communication because agreement must be based on reasons, and those who participate could, under suitable circumstances, provide reasons for their expressions. Suitable conditions require that, among other things, there be no coercion (p. 17).

Habermas (1981/1984) calls this type of conversation a transcendental-pragmatic justification, in that the tacit in us and the rational in us meet in the taken-for-granted *life-world*. (See also Ihde, 1990, on the lifeworld.) Habermas says knowledge associated with the lifeworld “is an *implicit* knowledge that can not be represented in an infinite number of propositions; it is a *holistically structured* knowledge, the basic elements of which intrinsically define one another; and it is a knowledge that *does not stand at our disposition*, inasmuch as we can not make it conscious and place it in doubt as we please” (p. 336).

Though rational communicative action is thought of as a good thing, *rationalization* is questionable. Habermas argues that rationalization occurs when aspects of the lifeworld are made explicit. His thoughts on rationalization, then, run contrary to his statement that we cannot make the lifeworld “conscious and place it in doubt as we please.” None the less, rationalization means that normative, value-vested contexts are transferred to rational yes/no positions. Habermas (1981/1987) gives this example: “Since the eighteenth century, there has been an increasingly pedagogical approach to child-rearing processes, which has made possible a formal system of education free from the imperative mandates of church and family” (p. 147).

As rationalization increases, societies become more complex, and mechanisms are developed to reduce the risks and failures involved in coordinating mutual understanding. These mechanisms are “delinguistified steering media” such as prestige, influence, power, money (and, sometimes, modern electronic mass media, the authors of this chapter would contend). Unfortunately, these media coordinate by either *condensing* or *replacing* mutual understanding (Habermas, 1981/1987, p. 181). Moreover, media such as money and power connect communication into complex networks for which no one feels responsible (p. 184). Environmental destruction and the over-bureaucratization of educational systems can be explained as a result of capitalist growth and a “misuse” of power, which occur because of the false percep-

tion that only rational management must be applied to the environment and education (p. 293).

Actually, Habermas (1981/1987) also argues that neither the rationalization of the lifeworld nor the increases in system complexity are the worst characteristics of the modern crisis. The greatest difficulty is “an elitist splitting off of expert cultures from contexts of communicative action in daily life” (p. 330).

Habermas (1981/1987) does not think that media are always negative. He claims that some media can help mutual understanding when they encourage a trust in knowledge: “Media of this kind cannot uncouple interaction from the lifeworld context ... because they have to make use of the resources of consensus formation in language” (p. 183).

Neither does Habermas (1974) altogether reject the rationality of the Enlightenment and the empirical-analytical sciences; like earlier critical theorists, he wants to develop a critical social science that lies somewhere between philosophy and science (p. 44). He believes that discovering universal knowledge, especially emancipatory knowledge, is possible through rational communicative action, though he can’t say exactly when or how. This is important because, as we shall see shortly, this belief in universals runs contrary to the beliefs of many postmodernist, feminist, and deconstructionist theorists.

9.4 CRITICAL THEORY AND TECHNOLOGY

Critical theory and its relations to educational technology are examined later in the chapter, but by way of background, we look now at critical theory about technology in general.

Critical theories and technology have inseparable pasts, as evidenced in the Marxists’ ideas about “mechanisms of control.” Remember that many in the Frankfurt School believed that “science was in danger of taking forms of social life for granted and reflecting only on ‘technical’ issues” (Carr & Kemmis, 1986, p. 132). Marcuse believed that, as they were used predominantly, “industrial capitalism and the bureaucratization of society stripped humans of any claims to autonomy and undermined their critical expression with a functional language” (Daley, 1983). Lewis Mumford wrote extensively about technology and society in the 1920s and can be considered a critical theorist (Hughes & Hughes, 1990). In *The Illusion of Technique and Death of the Soul*, Barrett (1978, 1987, respectively) has written unique and penetrating philosophical and historical analyses of the relations of technology to freedom.

Of course, Habermas has criticized technology directly. His comments reflect the assessments of many critical theorists on this topic—especially those who wrestle with the question of the autonomous nature of technology (e.g., see Win-

ner, 1977, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought*). Habermas (1969) says:

The quasi-autonomous progress of science and technology then appears as an independent variable on which the most important single system variable, namely, economic growth, depends. Thus arises a perspective in which the development of a social system seems to be determined by the logic of scientific-technical progress . . . the culturally defined self-understanding of a social lifeworld is replaced by . . . categories of purposive-rational action and adaptive behavior . . . The manifest domination of the authoritarian state gives way to the manipulative compulsions of technical-operational administration (p. 105).

Feminists, too, have written critically about technology in general. Stabile (1994), in *Feminism and The Technological Fix*, critiques the extremes of technomania and technophobia and tells how wider approaches to technology and socialist-feminist concerns give hope that all of us can survive the severe threats of capitalism. Wajcman’s (1991) work in *Feminism Confronts Technology* is indicative of the depth, breadth, and high quality of analyses going on in this area. The book studies not only the differential effects of technology on men and women but also the ways society affects technologies, especially “advanced” societies. Wajcman also examines feminist critiques of workplace and reproductive, domestic, environmental, and masculine technologies. While much of the literature in these areas is about negative relations with technology, Wajcman also hopes to convince us

that a recognition of the profoundly gendered character of technology need not lead to political pessimism or total rejection of existing technologies. The argument that women’s relationship to technology is a contradictory one, combined with the realization that technology is itself a social construct, opens up fresh possibilities for feminist scholarship and action (p. x).

Like Wajcman, other critical theorists (who are not necessarily feminists) write about the positive potentials of rationality, science, and technology in general. Marcuse believed that technology had the potential to free people from repressive economies (Daley, 1983), though this potential is not often realized. Feenberg (1991), in *Critical Theory of Technology*, attempts to show how a critical theory can help form “a new technical code” that is dialectical, contextual, aesthetic, and humanly, socially, and ecologically responsible (p. 189).

9.5 CRITICAL THEORY AND EDUCATION

Though relatively few educators—including educational technologists—appear to concern themselves directly with critical theory (McLaren, 1994a), a number of influential educators are pursuing the theory in one or more of its current manifestations. Henry Giroux and Peter McLaren are among the best known of today’s critical theorists, and we find critical theorists working across a spectrum of intellec-

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tual frames: postmodernism (Peters, 1995); critical pedagogy (Kanpol, 1994); power (Apple, 1993; Cherryholmes, 1988); teaching (Beyer, 1986; Gibson, 1986; Henricksen & Morgan, 1990; Simon, 1992; Weiler & Mitchell, 1992); curriculum (Apple, 1990; Giroux, Penna & Pinar, 1981; Beyer & Apple, 1988; Pinar, 1988; Castenell & Pinar, 1993); feminist pedagogies (Ellsworth, 1989a; Lather, 1991; Luke & Gore, 1992); teacher education (Sprague, 1992); mass media/communications studies (Hardt, 1993); vocational-technical studies (Davis, 1991); research summaries about critical theory (Ewert, 1991); and research using methods of the critical sciences (Carr & Kemmis, 1986; Grumet, 1992).

At least two publications attend in depth to Habermasian critical theory in education. Ewert (1991) has written a comprehensive analysis of the relationships of Habermasian critical theory to education, and in *A Critical Theory of Education*, Young (1990) tries to present a rather complete picture of Habermas's critical theory and its relations to education, Young says that critical theorists believe that extreme rationalization has

lent itself to the further development of an alienated culture of manipulation. In the science of education, this led to a view of pedagogy as manipulation, while curriculum was divided into value-free subjects and value-based subjects where values were located decisionistically. The older view of pedagogy as a moral/ethical and practical art was abandoned (p. 20).

Young (1990) further points out that Habermas and other critical theorists believe that:

We are on the threshold of a learning level characterized by the personal maturity of the decentered ego and by open, reflexive communication which fosters democratic participation and responsibility for all. We fall short of this because of the one-sided development of our rational capacity for understanding (p. 23).

Another seminal thinker who is responsible for several notions of critical theory in education is Paulo Freire. Freire's work, especially *Pedagogy of the Oppressed* (Freire, 1969), has been very influential in critical-education circles:

Freire's project of democratic dialogue is attuned to the concrete operations of power (in and out of the classroom) and grounded in the painful yet empowering process of conscientization. This process embraces a critical demystifying moment in which structures of domination are laid bare and political engagement is imperative. This unique fusion of social theory, moral outrage, and political praxis constitutes a kind of pedagogical politics of conversation in which objects of history constitute themselves as active subjects of history ready to make a fundamental difference in the quality of the lives they individually and collectively live. Freire's genius is to explicate . . . and exemplify . . . the dynamics of this process of how ordinary people can and do make history in how they think, feel, act, and love (West, 1993, p. xiii).

9.5.1 Critical Theory Changes

Of course, critical theories of education are changing. Bennett and LeCompte (1990) and Wexler (1988) have good reports of the histories of these changes. In *Critical Theory and Educational Practice*, Giroux (1983a) looks at the work of earlier critical theorists and says they "did not develop a comprehensive theoretical approach for dealing with the patterns of conflict and contradictions that existed in various cultural spheres" (p. 33). He says they did not understand domination, American society, the working class, or the contradictory ways people view the world.

By 1991, Aronowitz and Giroux (1991) claim that Habermas sees postmodernism as "a threat to the foundations of democratic public life" (p. 61) and that, like its modernist predecessors, "Critical theory, left and right, bemoans 'the eclipse of reason,' the 'closing of the American mind,' the 'culture of narcissism' (p. 136). In other words, Habermas is too deeply rationalist, if his theory of communicative action and its dependence on rational communication are any indications. This is ironic, considering that earlier critical theorists contested the Enlightenment's great beliefs in rationality!

More recently, Fraser (1994) shows that Habermas's critical theory and conception of the public sphere (communicative action) prove inadequate for democracies in late capitalist societies. That is, critical theory should first

render visible the ways in which social inequality taints deliberation within publics in late capitalist societies. Second, it should show how inequality affects relations among publics . . . how publics are differentially empowered or segmented, and how some are involuntarily enclaved and subordinated to others. Next, a critical theory should expose ways in which the labeling of some issues and interests as "private" limits the range of problems, and of approaches to problems, that can be widely contested in contemporary societies. Finally, our theory should show how the overly weak character of some public spheres in late capitalist societies denudes "public opinion" of practical force (p. 93).

9.5.2 Postmodernism

These accusations about Habermas indicate a clear evolution from (even a clear detachment from?) earlier critical theory to a postmodern view. Postmodern theories are more encompassing, according to Giroux (1991, p. 80), and McLaren (1994b) notes that

the postmodern critique concerns itself with a rejection or debunking of modernism's epistemic foundations or meta-narratives; a dethronement of the authority of the positivistic science that essentializes differences between what appear to be self-possessing identities, an attack on the notion of a unified goal of history, and a deconstruction of the magnificent Enlightenment swindle of the autonomous, stable, and self-contained ego that is supposed to be able to act independently of its own history, its own indigenist strands of meaning making and cultural and linguistic situatedness, and

free from inscriptions in the discourses of, among others, gender, race, and class (p. 196).

This is to say that postmodernism resists dominant, oppressive cultures, and wants power shifted to groups of people struggling for power in their own lives (see 10.2, 10.5).

Though the references and the language are different, and the search for overly rationalistic, scientific-technical universals *may be*, dethroned, postmodern critical theory still is related to earlier critical theory, at least in terms of its formulation of knowledge as technical, practical, and emancipatory (McLaren, 1994a, p. 179). Further, just as earlier critical theorists do not rule out rationality altogether, Aronowitz and Giroux (1991) claim that:

by combining the best insights of modernism and postmodernism, educators can deepen and extend what is generally referred to as critical pedagogy. We need to combine the modernist emphasis on the capacity of individuals to use critical reason in addressing public life with a critical postmodernist concern with how we might experience agency in a world constituted in differences (p. 117).

9.5.3 Critical Pedagogy

Critical pedagogy is an educational version of postmodern critical theory (Kantol, 1994). McLaren (1994a) says of it that:

Critical pedagogy poses a variety of important counterlogics to the positivistic, ahistorical, and depoliticized analysis employed by both liberal and conservative critics of schooling—an analysis all too readily visible in the training programs in our colleges of education. Fundamentally concerned with the centrality of politics and power in our understanding of how schools work, critical theorists have produced work centering on the political economy of schooling, the state and education, the representation of texts, and the construction of student subjectivity (p. 167).

In researching the relationships between knowledge and power, thinkers like Apple and Giroux “attempt to develop an encompassing critical theory of education with resistance as its central theme” (Gibson, 1986, p. 59). Moreover, proponents of *resistance* desire a radical, hopeful, and action-oriented pedagogy. These qualities are evident in the writing of actors like Ira Shor (1986, 1987), in organizations such as The Goddard Institute on Teaching and Learning (Plainfield, VT) and The National Coalition of Educational Activists (Rosendale, NY), and newspapers such as *Rethinking Schools* (Milwaukee, WI). Also, the works of Simon (1992) and Kantol (1994) are notable here. McLaren (1994a) says of critical pedagogy that:

Teaching and learning should be a process of inquiry, of critique; it should also be a process of *constructing*, of building a social imagination that works within a language of hope. If teaching is cast in the form of “a language of possibility,” then a greater potential exists for making learning relevant, critical, and transformative. Knowledge is relevant only when

it begins with the experiences students bring with them from the surrounding culture; it is critical only when these experiences are shown to sometimes be problematic (i.e., racist, sexist); and it is transformative only when students begin to use the knowledge to help empower others, including individuals in the surrounding community (p. 197).

9.5.4 Critical Feminism

9.5.4.1. General Theories. Contemporary feminism often is composed of theories of social transformation that describe women’s lives in a hierarchical, structured, male-dominated society (see 10.4). Feminism supports and values women and women-centered perspectives, while advocating social, political, and economic equality for both women and men. Informed by postmodern critical theory, feminism struggles to empower individuals and groups to participate in their liberation from oppressive structures within society; it challenges universal claims to truth and encourages the reconstruction of history. Various research traditions inform feminism and the development of feminist theories (Jagger, 1983; Weedon, 1987).

Of course, multiple versions of feminism exist. To put it too strictly, liberal feminists advocate the right of women to choose their role in society and in the home, as opposed to accepting sex-role stereotypes. Radical feminists advocate separatism as a political strategy to gain independence from patriarchal control and as a way to develop autonomy and empowerment. Socialist-feminists advocate a total transformation of the current social system that perpetuates racism, classism, and gender oppression. Socialist feminists propose the establishment of a social system that promotes

full participation of men in childrearing; reproductive freedom for women, that is, the right to decide if and when to have children and under what conditions, together with the provision of the conditions necessary for the realization of the right of women to make these choices; the abolition of the privileging of heterosexuality, freedom to define one’s own sexuality and the right of lesbians to raise children; the eventual abolition of the categories “woman” and “man,” and the opening up of all social ways of being to all people (Weedon, 1987, p. 18).

The constructs of poststructuralism/postmodernism consist of several positions based on the writings of Derrida, Lacan, Dristeva, Althusser, and Foucault. The primary focus of the writings is on understanding language (see also 10.5). Thus, feminist poststructuralists encourage a dynamic mode of understanding oneself in the world through the interpretation and reinterpretation of language. Postmodern feminists “oppose a linear view of history that legitimates patriarchal notions of subjectivity and society” (Giroux, 1993, p. 61).

Womanist or black-feminist interpretations of feminism maintain that white, Western, privileged women have chosen to focus on sexual exploitation as the exclusive cause of oppression in the world and to ignore other forms of domi-

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nation (Hooks, 1989; Collins, 1990; Moraga & Anzaldúa, 1981). Black women's feminism is predicated on resistance to the "tridimensional phenomenon of race/class/gender oppression" (Cannon, 1988, p. 39). The absence of dialogue on this oppression led some black women to redefine their understanding of feminism and to accept Alice Walker's concept of womanist: "A black feminist or feminist of color." Walker's interpretation of feminism suggests that there is only a shade of difference between a womanist and a feminist, like purple is to lavender (Walker, 1983, p. ix).

Black feminists agree with Barbara Smith (1979) that this triad of race, class, and gender is a

feminist issue [that is] easily explained by the inherent definition of feminism. Feminism is the political theory and practice to free all women of color, working-class women, poor women, physically challenged women, lesbians, old women, as well as white economically privileged heterosexual women. Anything less than this is not feminism, but merely self-aggrandizement (B. Smith, 1979, quoted in Moraga & Anzaldúa, 1981, p. 61).

9.5.4.2. Pedagogical Theories. The intent of feminist pedagogy, like critical pedagogy, is to liberate. Through curriculum, discussions, and as agents of social change, feminist educators focus on the liberation of women from oppressive structures within society. Both feminists and critical pedagogists seek to empower students by affirming their race, class, and gender positions. They encourage students to reject any and all forms of oppression, injustice, and inequality. Students are taught to use their voices to prevent silencing by authoritarian social structures.

Socialist and poststructuralist feminists question critical pedagogy's Marxist ideology and its concept of emancipation. Marxist theory was traditionally concerned with male labor and production, while women's experiences were understood as part of oppression within their class position. Consequently, social feminists contend that Marxist and neo-Marxist theories are inadequate for gender analysis (Jagger, 1983; Lather, 1992a; Luke & Gore, 1992; Mackinnon, 1983; Weiler, 1988). Nicholson (1994) argues that Marxism is seen as "not only irrelevant to explaining important aspects of women's oppression but, indeed, as an obstacle in the attempt to develop such explanations" (p. 71). Nicholson also claims that similar arguments can be made against Marxism in movements against racism and in movements for gay and lesbians.

Not many works have been written about the relationship between feminist pedagogy and the "male inscribed liberation models of critical pedagogy" (Lather, 1992b, p. 129; Luke & Gore, 1992), but Luke (1992) suggests that because male authors of critical theory are at the center of its discourses, critical pedagogy is articulated from a male standpoint. Similarly, Ellsworth (1992) maintains that critical pedagogues consistently define empowerment in "ahistorical and depoliticized abstractions" (p. 99) which testify "to the fail-

ure of critical educators to come to terms with essentially paternalistic project of traditional education" (p. 99). Feminist discourses, unlike those of critical pedagogy, provide a context that encourages women to "conceptualize self-definitions." These definitions are "oppositional" to ones that may serve to subordinate women to men (p. 101).

Ellsworth also expresses concern for nonfeminist critical pedagogy's concept of "student voice," a construct that assumes that students are participating in a relationship of equal power, whereas individuals who are members of disadvantaged or subordinated social, racial, ethnic, or gender groups, may lack the critical-analysis skills necessary to participate in or even enter in critical-pedagogy dialogues.

Furthermore, in critical pedagogy, the assumption is made that the professor/teacher is committed to ending students' oppression. Yet no provisions are made in most critical pedagogy to problematize issues the professor/teacher brings to the classroom. Luke (1992) expresses a similar concern about empowerment and equal opportunity to speak in the classroom. She says that:

to grant equal classroom time to female students, to democratize the classroom speech situation, and to encourage marginal groups to make public what is personal and private does not alter theoretically or practically those gendered structural divisions upon which liberal capitalism and its knowledge industries are based (p. 37).

She agrees that possessing the "tools of critical thinking" will help women students to understand the masculine and feminine divisions of power and authority within the academy, but cautions that these same divisions

tend to render a feminist language of critique politically counterproductive for women, who still continue overwhelmingly to depend upon men for sanctioning of research topics, allocation of research funds, decreeing what knowledge counts as relevant and citeable for thesis examination, degree granting, promotion, and tenure (p. 38).

Gore (1992) proposes that the critical pedagogist's concept of teachers as agents of empowerment is problematic because it attributes extraordinary abilities to the teacher and may ignore the context of the teacher's work within patriarchal institutions. Weiler (1991) finds that women professors, like women students, struggle to understand the divisions of power and authority within the academy. Two questions seem to plague women. The first one "refers to the institutionally imposed authority of the teacher within a hierarchical university structure," where the

teacher in this role must give grades, is evaluated by administrators and colleagues in terms of expertise in a body of knowledge, and is expected to take responsibility for meeting the goals of an academic course as it is understood within the wider university (p. 460).

The second question refers to “the need for women to claim authority in a society that denies it to them” (p. 461). Kenway and Modra (1992) observe that power and authority do not appear to be outstanding issues for feminist school teachers. Another work on the subject of power and authority is Maher’s (1987) “Toward a Richer Theory of Feminist Pedagogy.” The topic of power and authority brings students, educators, and others face-to-face with issues relating to the feminist teacher as nurturer/mother, issues that are examined well by writers such as Noddings, (1984, 1991), Belenky et al. (1986), Grumet (1988), and Pagano (1992).

9.5.4.3. Pedagogical Strategies. Feminist teachers who are concerned with issues of authority, especially in the classroom, employ strategies that share the power of decision making with students (Bennett & LeCompte, 1994). These strategies are consistent with Schniedewind’s fivefold “process goals” approach to pedagogy: (1) development of an atmosphere of mutual respect, trust, and community in the classroom; (2) shared leadership; (3) cooperative structures; (4) integration of cognitive and affective learning; and (5) action (Schniedewind, 1987, quoted in Kenway & Modra, 1992).

These kinds of process goals help to build communities and encourage involvement in democratic decision making and are consistent with other liberatory pedagogies. Thompson and Disch (1992) explain that, as feminist teachers, they

continually think about how [their] classes are going as communities. Other teachers obsess with lectures. We obsess about both the content we teach as well as the relationships among students and our relationships with both individuals and the group as a whole. We think carefully about how to express our anger when the class isn’t taking responsibility to carry on meaningful discussion of the readings. We think carefully about how to address or resolve conflicts among particular pairs or groups of students. No two semesters are alike. The results of this kind of teaching cannot be predicted because the students have power, and we never know how they’re going to challenge us, or how they’re going to challenge each other (p. 9).

To ensure community and democratic decision making, feminist teachers function as facilitators and co-learners. They incorporate the use of journals, biographies, autobiographies, and narratives to encourage students to use their personal experiences to construct knowledge. As Thompson and Disch say (1992): “We assume that learning needs to be close to the heart, meaning that the course must move the learner and make a lasting impact on her or his life” (Thompson & Disch, 1992, p. 4).

Feminist educators are a diverse group. Remember that they, like most critical pedagogists, attempt to move educators and learners to action by prodding us with a most important question: Whose interests are served by education?

9.5.5 Critical Theory and Race

9.5.5.1. General Issues. The literature indicates that, in the United States, discussions based on race/ethnicity and education focus primarily on social class. Several researchers believe that improvement in an individual’s social status will also improve her or his achievement in school. Others are suggesting that an examination of the larger population reveals that schooling and achievement are more closely tied to political issues.

Unfortunately, critical theorists must often counter researchers who develop scientific/biological theories to define the marginality experienced by racial/ethnic groups. McCarthy (1990) maintains that these scientific theories are inconclusive and do not adequately address the inequality experienced by racial minorities. Giroux (1992) believes that these theories are delusional and say too little about the power relations at the core of the discourse of white authority (p. 114). The acceptance of these biological/scientific theories is predicated on the ideology of racism.

Cornel West (1988) argues that Judeo-Christianity, science, and psychosexuality are the three central European traditions that support racism. Further, Africans are associated with bodily defecation, violation, and subordination. As such, Africans in the modern West “personify degraded otherness, exemplify radical alterity, and embody alien difference” (p. 118).

9.5.5.2. Race and Education-Related Issues. Critical educators utilize a variety of approaches to understand educational issues as they relate to race/ethnic minorities. For example, Ogbu and Matute-Bianchi (1986) examine specific school variables such as placement, counseling, teacher’s behavior, and methods of testing as attempts to influence minority students’ performance. Neo-Marxist sociologists such as Bowles and Gintis (1976) argue that schooling in the United States maintains the existing social class structure for the benefit of an economic elite.

McCarthy’s (1990) alternative approach to race and education is related to work by authors such as Apple (1986, 1993), Apple and Weis (1983), and West (1988). McCarthy claims that this critical approach emphasizes the relationships between:

- (a) the structural and institutional arrangements of school knowledge and instrumental rules which constrain the educator and the educated alike, and (b) the self-affirming agency and capacities of social actors (teachers and students) to resist and transform the structural arrangements and relations that exist within educational settings and in the wider social milieu. (p. 7).

Giroux (1993) recommends a pedagogy that can retrieve and reconstruct possibilities for establishing the basis for a progressive vision that makes schooling for democracy and critical citizenship an unrealized yet possible reality (p. 118).

9.5.6 Critical Theory, Mass Media, and Popular Culture

Critical theorists also have begun to look at oppression and emancipatory action as they relate more broadly to technologies of mass media and other aspects of popular culture.

In *Ideology Culture, and the Process of Schooling*, Giroux (1981) notes that forms of popular culture sometimes help to encourage rationalization of existence. The consolidation of culture by new technologies of mass communication, coupled with newly found social science disciplines such as social psychology and sociology, ushered in powerful, new modes of administration in the public sphere (p. 40).

Similarly, several nonprint media serve as wonderful examples of the kind of powerful views of culture a critical understanding can encourage. For instance, the film *Hungry for Profit* looks at ways corporate business has created among the largest of forced mass migrations of people in history. *America: What Went Wrong* (Moyers, 1992) explores the ways capital and politics have been used to the economic detriment of most Americans. *Manufacturing Consent: Noam Chomsky and the Media* shows how the U.S. government surreptitiously orchestrates information to avoid telling the public about its clandestine and democratically questionable activities against peoples worldwide.

Because of its profound relationships to society, politics, health, education, and so on, the technology of television has been the object of several print-based critical-theory analyses, though no one has, as far as we can find, summarized the work in this area. Several of these studies use notions of culture as their anchors (e.g., Dienst, 1991; Fehlman, 1992; Schwoch, White, Riley & Scott, 1992) and intend to help viewers overcome the hidden intentions of TV. Note that we are not referring, here, to “critical viewing” or “critical thinking,” which—in their cognitivist, rationalist, and individualist approaches—often foster technical interests rather than emancipatory ones.

At least one book critically examines representations of blacks (Hooks, 1992). Other studies (e.g., Poster, 1987—88; Wallace, 1994) bring a postmodern lens to the examination of media. For example, Aronowitz and Giroux (1991) claim that “in the age of instant information, global networking, and biogenetics, the old distinction between high and popular culture collapses, as the historically and socially constructed nature of meaning becomes evident, dissolving universalizing claims to history, truth, or class” (p. 115).

Just as Habermas and Marcuse, for example, do not believe that technology has only negative characteristics, not all education critical theorists find only harm in media. For example, Phelen’s (1988) “Communing in Isolation,” an article that alludes to critical theory, argues that mass media campaigns can successfully communicate messages when

they use local celebrities, live meetings, and easily measured finite goals.

9.5.7 Critical Theory, Education, and Ecology

The topic of ecology in relation to critical theories of education comes up rarely. Feenberg (1991, p. 195) addresses it, and remember that Habermas (1981/1987) talks about the uses of media that inhibit communication such that “the destruction of urban environments as a result of uncontrolled capitalist growth, or the overbureaucratization of the educational system, can be explained as a ‘misuse’ of media” (p. 293).

Works by Bowers (1993) and Orr (1992) bear mentioning. Though neither book cites the Frankfurt School, McLaren, or “critical theory,” for instance, they are included here because their topics are often the same as those in more commonly recognized critical theory (e.g., the predominance of science and technology over less objective aspects of life), and their methods are similar (critique of existing views contradictory and oppressive conclusions). In other words, the works fulfill the spirit of critical theory.

Bowers (1993) argues that fundamental Western cultural assumptions of rationalism, progress, individualism, and consumerism found in schooling are detrimental to ecology. Bowers’ arguments come up in later sections of this chapter on educational technology and ecology. Orr’s (1992) *Ecological Literacy: Education and the Transition to a Postmodern World* posits that “there is no example of a society that was or is both technologically dynamic and environmentally sustainable. It remains to be seen how and whether these two can be harmonized” (p. 21). Perhaps the essence of Orr’s dilemma is captured in a passage from his book’s introduction:

The shortcomings of education reflect a deeper problem having to do with the way we define knowledge. “Research” has come to be the central focus and primary justification for the modern university. Some research is vital to our prospects, some of it is utterly trivial. Some of it may produce results that, given our present state of collective wisdom, is [sic] dangerous. A sizeable part of it is motivated by the fantasy of making an end run around constraints of time, space, nature, and human nature. It is, in short, part of the old project of dominating nature at whatever cost. Such distinctions are seldom made or even discussed. I happen to believe that our prospects depend more on the cultivation of political wisdom, moral virtue, and clear-headed self-knowledge than on gadgets. In any event, it is time to ask what we need to know to live humanely, peacefully, and responsibly on the earth and to set research priorities accordingly (p. xi).

Both Orr and Bowers spend considerable time discussing the ways education fosters ecologically dangerous technological effects, and they do so because of what many people think of as inherent and benign human characteristics such as inventiveness.

However, for the most part, few critical theorists are devoting their writing to issues of education and ecology.

9.6 CRITICAL THEORY OF EDUCATIONAL TECHNOLOGY

The balance of this chapter addresses critical theories as they relate to educational technology. The first relationships come from theorists previously mentioned in this chapter. Primarily though, the work of critical theorists more formally and closely tied to professional educational technology groups is surveyed.

Several of the critical theorists noted earlier assess the relationships of various sorts of technology to schooling and learning. They are interested not only in the obvious hardware and software of educational technology but also in technology as technique, bureaucracy, rationalization of the lifeworld, and so forth. For instance, remember that Habermas (1981/1987, p. 147) says that rationalization has created education systems that rely less on the normative mandates of the church or the family. He and other critical theorists think education systems have inhibited learners from reaching levels of maturity that foster communicative, democratic, or responsible learning (Young, 1990, p. 23).

McLaren (1994a), in *Life in Schools*, addresses the topic of “Technologizing Learning” when he concludes that in listening to experts who would have us reduce students to computer printouts by encouraging them to develop mechanistic cognitive styles, we perpetuate social inequality. In such circumstances “What we are left with is an emphasis on *practical* and *technical* forms of knowledge as opposed to . . . *transformative* knowledge” (p. 220).

Giroux (1981) uses Habermas’s ideas of human interests to speak about technocratic rationalism, arguing that schools and teaching are governed by “the technical imperatives of rational engineering” (p. 10). Giroux (1988b) critiques the following assumptions of technical model of curriculum:

- (a) Theory in the curriculum field should operate in the interests of lawlike propositions that are empirically testable,
- (b) The natural sciences provide the “proper” model of explanation for the concepts and techniques of curriculum theory, design, and evaluation.
- (c) Knowledge should be objective and capable of being investigated and described in neutral fashion.
- (d) Statements of value are to be separated from “facts” and “modes of inquiry” that can and ought to be objective (p. 13).

This emphasis on objective, lawlike, valueless knowledge encourages people to ignore important aspects of schooling. Giroux (1981) says that “both intentionality and questions regarding the ethical and political nature of schools have been either ignored or dealt with reductively” (p. 10). As McLaren (1994a) puts it, “Teachers often emphasize classroom management procedures, efficiency, and ‘how-to-do’ techniques that ultimately ignore an important question:

‘Why is knowledge being taught in the first place?’ “ (p. 177).

To resist these problems, Giroux (1986) advocates democratic practices, critical citizenship, and intellectual teachers. McLaren (1994a) says: “As teachers we need to collectively demythologize the infallibility of educational programmers and so-called experts, who often do nothing more than zealously impose their epistemological assumptions on unassuming teachers” (p. 219).

Feminists, too, are aware of educational technology and its effects. For example, Luke and Gore (1992) say that feminists are against “the technology of control” such as that found in many current liberal progressive discourses. Remember that Wajcman (1991) studies the differential effects of technology on men and women in society and suggests that technology may even foster feminist action and scholarship. A bit later in this chapter, Damarin (1990a) shows how, among other things, educational technology usurps classroom control and is biased against women teachers and students.

Note that, like other critical theorists, critical theorists concerned with educational technology are not always solely negative in their relations to technology (see 10.5.6). Just as Marcuse and Habermas believe that media can be used to enlighten and emancipate (even if often they are not used in these ways), and just as Giroux urges a hopeful “language of possibility,” educational technology critical theorists can be positive. For instance, Ellsworth (1990) uses a form of critical pedagogy “that sees a special potential role for media in facilitating liberatory education” (p. 11).

Positive attitudes aside, few people attend to critical theory and its relations to educational technology. Such paucity is indicated by the fact that Saettler’s (1990) history of educational technology does not reference any forms of critical theory. However, “Chapter 3—The Sources of Influence on Instructional Technology,” in *Instructional Technology: Definition and Domains of the Field* (Seels & Ritchey, 1994), includes at least a passing reference to postmodernist, feminist, and constructivist “Alternative Perspectives,” as they are called by Ritchey and Seels (1994, p. 12). Nonetheless, some researchers *are* examining educational technology and critical theory, as we see in the next section.

9.7 TOPICS IN CRITICAL THEORY OF EDUCATIONAL TECHNOLOGY

The following sections of the chapter categorize and describe existing works about critical theory and educational technology, based on the topics from the first part of this chapter and on topics that emerge from this work itself. Many works cannot be categorized neatly because they speak to several issues; in such cases, works are categorized based primarily on “best fit” as judged by the authors of this chapter. The works cluster around the following issues:

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- Foundational issues
- Societal relations
- Communication and media education
- Ethics
- Action research
- Ecology

9.7.1 Foundational Issues

This section addresses foundational issues related to critical theory and educational technology, including issues of philosophy, language, instructional design and development, computers, and visuals.

9.7.1.1. Philosophic Views. In “Philosophical Foundations of Instructional Technology,” Koetting (1983a) has written one of the first works to explicitly relate critical theory to various manifestations of educational technology (see also 3.8.1). He focuses on epistemological questions in order to explicate their centrality in instructional technology and to suggest alternative theoretical understandings, practices, and modes of inquiry. This is accomplished, partly, by examining Habermas’s three forms of science: the empirical-analytic, the historical-hermeneutic, and the critical. (See the schematic on Habermas’s epistemology, noted earlier in this chapter.) Each has a primary interest in, respectively, technical control, mutual understanding in life, and emancipation. Each form of knowledge differs in its strategies and cognitive interests, which are deep anthropological interests human beings have in their self-formed historical contexts (McCarthy, 1978, p. 59).

Koetting (1983a) points out that “Educational technology . . . has its theoretical base within the framework of a scientific, behaviorally based model of rationality” (p. 8). Our uses of instructional design rely exclusively on an empirical, scientific model that is interested in control and that does not allow for any deviation from predetermined outcomes. This view is reductionist and simplistic and poses severe limits on knowledge and its formation. Koetting suggests that “we need to explore alternative ways of organizing curricula that acknowledge that students are capable of having views of the world” (p. 12). Thus, notions of epistemological ambiguity and diverse forms of communicating, learning, and conceiving of the world must be admitted to the field.

In a similar paper, Koetting (1983b) again refers to Habermas’s knowledge types and suggests that the field of educational technology is rooted in a solely empirical view of knowledge. He says that expanding the field’s theory base toward critical sciences would put us more in the mainstream of educational thought; help us examine more fully the languages of film, video, photography, and other media; and allow for more diverse and epistemologically appropriate educational outcomes, organizations, and research methods.

In *Paradigms Regained: The Uses of Illuminative, Semiotic, and Post-modern Criticism as Modes of Inquiry in Educational Technology* Hlynka and Belland (1991 a) note their association with the work of Habermas, saying the critical domain forms the basis of their book of readings (p. 7). Hlynka and Belland use *critical* to include connoisseurship, reconceptualism, semiotics, postmodernism, and poststructuralism.

In one chapter of *Paradigms Regained*, Murphy and Pardeck (1991) argue that educational technology advances a world view that denies the lifeworld and has adverse educational and social implications. The technological view fragments learning, is void of dynamism, and is monologic. Further, the technological view stifles communication, is more purely instrumental, and fosters lack of insight, imagination, and creativity. And it marginalizes morality. In contrast, education should return persons to a world of questions and

the world of direct experience, and existential claim, which is the only type of world individuals can call their own. The world that educators must resurrect . . . is the “lived-world,” the pre-objective world that is sustained by human praxis (p. 394).

In a speculative essay in Hlynka and Belland’s (1991) text, Nichols (1991) looks at Habermas’s communication theory. After criticizing educational technologists’ conceptions of knowledge, postpositivist philosophy, and disregard for the metaphysical, Nichols offers Habermas’s theory of communicative action as a way of addressing these criticisms. Nichols concludes that educational technology is a system of purposive-rational action, that some educational technologists conceive of knowledge too narrowly, and that educational technologists generally do not operate consensually.

Elsewhere, Nichols (1993) draws direct and not very positive links between educational technology and its apparent ideology. He says a technical and practical ideology dominates over a democratic-communicative ideology. That is, students and teachers are not responsible for knowledge and education but for fulfilling the desires of others, especially the desires to have power and make money. We must critically study this dominance and actions against it because such study can potentially encourage greater fulfillment of human communication, and freedom of communication is moral.

A work of note in a postmodern vein is “Postmodern Educational Technology” (Hlynka & Yeaman, 1992), in which the authors point out that the postmodern condition means questioning all dimensions of scientific approaches to technology use, recognizing there is no one best way to apply technology, and acknowledging that a postmodern approach can make a positive difference to the field of educational technology.

9.7.1.2. Language. In several works, researchers examine fundamental issues of language and their relationships to educational technology.

For example, Koetting and Januszewski (1991a, 1991b) argue that the Association for Educational Communications and Technology, in particular, focuses narrowly on empirical analytic science. They suggest, on the other hand, that new dialogue, new conceptions, and new languages of educational technology can emerge and affect praxis in the field. Nagel's sense of theory as a systematic analysis of a set of related concepts is helpful for these new aspects of the field, because this theory is both a conceptual analysis of words and normative statements of their uses.

The relations among language, critical theory, and educational technology are uncovered also in Winograd and Flores's (1986) *Understanding Computers and Cognition*, in which they "have shown how the projection of human capacities [like language] onto computational devices was misleading" (p. 174).

In *Hypertext: The Convergence of Contemporary Critical Theory and Technology* Landow (1992) draws substantial parallels between postmodernism and hypertext. He claims that hypertext, like critical theory, encourages multilinearity and webbing, the blurring of distinctions between reader and writer, multivocality, intertextuality, and decentering. Multilinearity replaces

the essentially linear fixed methods that had produced the triumphs of capitalism and industrialism with what are essentially poetic machines—machines that work according to analogy and association, machines that capture the anarchic brilliance of human imagination" (p. 18).

Postmodern conditions such as webbing and multivocality show us: (1) the historical connectedness of writing technology; (2) changes in the meanings of *literacy education*, *author*, and *narrative*; and (3) a democratized and liberated existence. Landow notes that the technology of writing, in whatever form, "is the greatest as well as the most destructive of all technologies" (p. 203), but mostly he is "excited" and looks forward to hypertext's appearance, particularly in that "it offers us a means of looking a short way into one or more possible futures" (p. 203).

9.7.1.3. Instructional Design and Development. Some publications in the area of critical theory and instructional design are subject/content specific (e.g., Stallings & Krasavage, 1986), but the generalized arguments that follow are more typical.

Nunan (1983) was among the first to critically "counter educational design," as he puts it, but of the works cited in this section, Streibel's (1991) may be the best known. In "Instructional Design and Human Practice: What Can We Learn from Habermas' Theory of Technical and Practical Human Interests?," Streibel (1991) shows that

an instructional designer cannot rely on a technical approach to design. Rather, an instructional designer has to be guided by a practical human interest and support the instructional and learning processes that actually take place" (p. 8). Five implications follow for the designer: (1) Find ways to construct meaning in context. (2) Find ways to create resources that support meaning-making. (3) Give up designing teacher user-proof instruction. (4) Give up seeing everything in terms of skills; instead, see learning in terms of judgments, collective deliberation, and collective meaning making. (5) Participate directly in learning.

In *Computers in Education: Social, Political, and Historical Perspectives* (Muffoletto & Knupfer, 1993), we find the Streibel (1993b) piece called "Instructional Design and Human Practice: What Can We Learn from Grundy's Interpretation of Habermas' Theory of Technical and Practical Human Interests?" Streibel uses Grundy's work in curriculum studies to look at the effects of technical and practical interests on design and to recommend that designers leave some space for teachers and learners to construct their own senses of good instructional design.

Wilson (1989) examines the relationships of instructional design to ideological claims in education. He presents a heuristic that gives the relationship of instructional design to each of the claims according to: who designs learning, what is designed, the people for whom learning is designed, why learning is designed, and how designing should be done. He argues that the use of instructional design is ethically justified only if it meets the criteria most associated with the critical position.

9.7.1.4. Computers. As in other areas, not all people who find deleterious effects of educational computing are, strictly speaking, associated with critical theory, but they examine cultural and emancipatory effects of educational computing, and so can be called critical theorists. Such a researcher is Sutton (1991), who finds that computer uses in schools in the 1980s

maintained and exaggerated existing inequalities in education input, processes of computer learning, and output. Poor, female, and minority students had less access to computers at home and, in addition, less access to computers at school. . . . Poor and minority students were more likely to use computers for drill and practice than were middle-class and white students, and females outnumbered males in word processing but were underrepresented in programming. Teachers, while concerned about equity, held attitudes which hindered access: They believed that better behaved students deserved computer time and that the primary benefit of computers for low-achieving students was mastery of basic skills. Thus, children who were minority, poor, female, or low achieving were likely to be further behind after the introduction of computers in schools. . . . These inequities were found in the U.S.A., Great Britain, Australia, Canada, and New Zealand (p. 494).

On the other hand, a few thinkers (e.g., Apple & Jungck, 1990) have analyzed explicit connections between educa-

tional computing and critical theories. In “A Critical Analysis of the Use of Computers in Education,” Streibel (1988) is one of the first professionals to conduct such an analysis. He explores the educational uses of computers for drill-and-practice, tutorial, and simulation and programming. After alluding to Habermas’s ideas about the social construction of knowledge, Streibel concludes that educational computing often embodies overly deterministic, behavioral, technological characteristics that limit personal responsibility for learning, mitigate against nonbehavioral goals of education, and leave the learner with “an underdeveloped intellectual agency within the qualitative, dialectical, and experiential domains of natural and social events” (Streibel, 1991).

In a later piece about “situated critical pedagogy,” Streibel (1993b) addresses the role of emancipatory human interests, and he asks questions about praxis, situated critical pedagogy, interpretive processes, and emancipatory evaluation. To his earlier works, this one adds an interesting set of questions to educators about using computers in emancipatory ways: Do learners develop their own evaluative criteria in conjunction with fair educators? Is the discourse around computers comprehensible to learners? Are students participants in the construction of history and biography? Do evaluations result in appropriate individual and collective actions?

In “Culture, Power, and Educational Computing,” Bromley (1992) analyzes the social, the artifactual, the historical, and the power relations of computers. He suggests that our computer uses tend toward individualism, the technical fix, domination of nature, efficiency, instructional systems thought, quantitative fixation, top-down thinking, positivism, and centralization. He shows how the social relations of progress, the military, and rationalization have contributed to these tendencies. He suggests that teachers be more responsible for computing and that a pedagogy that encourages student participation in decision making about computers will most help to make constructive uses of technologies. Bromley also explores the meanings of cybernetics in education.

As noted earlier, not every critical theorist concludes that technology is bound to be oppressive. The same holds for critical theorists in educational computing (e.g., Landow, 1992). Boyd (1987), for instance, uses critical theory to argue that computer conferencing may be a good technology for providing emancipative learning. Currently, students are immersed in schooling that is bureaucratic, domineering, and boring. Boyd suspects that computer-mediated conferences can be good, because everyone has an equal opportunity to have her or his arguments heard in such a conference. Though he thinks that education and computer-mediated conferences must aim for romance, precision, and generalization, Boyd believes that rational discourse of the kind that is possible via computers is most important if education is to be emancipative.

9.7.1.5. Visuals. Several researchers have used critical theory to examine educational uses of visuals. Given that the International Visual Literacy Association and its *Journal of Visual Literacy* have begun to accept presentations and publications of a critical theory nature (e.g., Lewis, 1991), perhaps such examinations are a growing trend.

Moore and Dwyer’s (1994) *Visual Literacy: A Spectrum of Visual Learning* is a compilation of much of the latest thinking and research about the relations of visuals to teaching and learning, and several chapters in it are pertinent to critical theories. Two of the works, by DeVaney (1994a) and Nichols (1994), are discussed later in this chapter, but in “Representations: You, Me, and Them,” Muffoletto (1994) argues that “The concerns of visual literacy go beyond questions of perceptions, production, and interpretation to questions of power and control over the formation of subjects” (p. 306) in the social world. He argues that the image is a social construction, and he wants the viewer to ask how social and taken-for-granted meanings accrue to that image. He also wants viewers to know how those who control images also control consciousness and who we think we are.

In a visually intriguing chapter called “Deconstruction and Visuals: Is This a Telephone?” Yeaman (1994a) shows readers how to resist dominant, and therefore oppressive, images. He uses visual examples, humor, and social analysis to examine conflicting senses and meanings in visuals and to show that images never mean what they say or say what they mean. In short, by deconstruction, Yeaman encourages readers to uncover the multiple meanings in visuals. His uncovering of the venerable Shannon and Weaver model of communication, for instance, takes us through layer after layer of meanings and, in doing so, helps us to see how the model is not “true.”

9.7.2 Societal Relations

This section reviews works associated with critical approaches to understanding educational technologies and their societal relationships. Topics include social foundations, feminism, race, capitalism, and the military.

9.7.2.1. Social Foundations. Michael Apple is among the best known of those who think critically about social relations of educational technologies, particularly in the realm of the political/ideological. We can see his thought played out in works such as *Teachers and Texts: A Political Economy of Class and Gender Relations in Education* (1986), “Teaching and Technology: The Hidden Effects of Computers on Teachers and Students” (1988), and *Official Knowledge* (1993).

Apple (1993) stresses that teachers often have problems as curricula and teaching methods become more rationalized and economized:

We tend to think of technology in education as something of a “better mousetrap.” Given a process/product curriculum

model that says that education is good if it gets us from point A to point B efficiently and cheaply, technology simply becomes one more means to get prechosen knowledge into the heads of students. . . . Films [and other technologies] are seen as better than dry text material or a lecture. Goals don't change. Only the means do. Film, in essence, becomes one more "delivery system" of official knowledge. The teacher sends; the student receives. "Banking" education goes on (p. 145).

Apple urges that one response to the conservative and technical agenda manifested in the banking metaphor is to help students be critical. He suggests that,

If we think of film not as a "delivery system" of prechosen messages, but as a form of aesthetic, political, and personal production, our entire orientation changes. If we think of it as a way that people help produce their own critical forms of visual literacy, this too forces major shifts in our perspective on the official politics of knowledge as well (p. 145).

Similarly, Koetting (1993) urges educators to examine technology through the lenses of social foundations and curriculum theory. He shows that schooling acts largely to maintain the status quo—not to encourage deep reform—by focusing on issues of economics, standardized tests, and the smooth functioning of society. He concludes that educational reform will not be substantive until we recognize that education is a political act; knowledge is socially constructed; and critical thinking is not simply cognitive but moral, social, and political.

In "Socio-cultural Methodology and Analysis of Historic and Current Instructional Materials" (Robinson, Wiegmann & Nichols, 1992), the authors attempt an unconventional approach to evaluating instructional materials, including video materials. They recommend asking a series of critical questions about who gains and who loses financially or politically or otherwise if a material is used.

Preston (1992), too, examines social perspectives in educational technology. After studying the social and ethical implications of educational computing in Queensland, Australia, he advocates a socially critical orientation for educational computing and technology, in which, for instance, teachers try to ensure that students are aware of social effects of computers; the computer is an empowering tool for students; benefits of computers are represented as a social good rather than solely an individual good; and questions of equity of access are addressed.

9.7.2.2. Feminism. Although many feminists do not want to be included very directly with several of the critical theorists noted already, feminists *are* encouraging self-consciousness and liberatory action that changes social and educational practices related to technology. In this way, at least, they are critical theorists.

Not a great amount altogether has been published in this area, but many topics are covered, ranging from various technological threats and promises for female teachers and students (Bohren, 1991); to media and sexism (Byerly, 1985); to the possibilities for critical theory in the field of educational technology (Jamison, 1994); to justice and caring (Kerr, 1990); to gender, languages, and computers (Rothschild, 1986); and to equity (Thurston, 1990). Other publications address issues of ethics and technological empowerment (Anderson, 1992, 1994) and action research and sex bias in media and materials (Clark, 1983).

Luke and Gore (1992) say that poststructuralist feminists "reject the self-certain subject, the truth of science and the fixity of language" (p. 5) and that "a poststructuralist feminist position takes issue with the technology of control" (p. 4). Rejection occurs "especially in liberal progressive discourses that make vocal claims to social justice on behalf of marginalized groups while denying their own technologies of power" (p. 7). So:

Within this [feminist] foundation there is greater specificity about our pedagogical goals than currently exists for what is still an abstract, generalized discourse of critical pedagogy. . . . By locating our work in particular sites and with attention to specific practices, the possibilities for genuinely reshaping discursive and embodied relations in pedagogy seem within reach (p. 9).

One scholar for whom critical feminist pedagogy related to educational technologies is within reach is Suzanne Damarin (1988, 1991a, 1992a, 1992b). She is deeply analytical/critical of many forms and uses of educational technology (see also 10.4). In "Rethinking Equity: An Imperative for Educational Computing," Damarin (1989) discusses employment changes related to women in society, math anxiety, and computer anxiety; instructional and curriculum design; evaluation; and computer literacy as they relate to women's equity. In "Computers, Education, and Issues of Gender" (Damarin, 1990a) and in "Unthinking Educational Technology (Damarin, 1990)," she argues, among other things, that the theorizing of gender as a variable of consequence, valuing of women's experience as a scientific resource, and the positioning in the same plane as the researched can help us rethink educational technology. She also concludes that conventional research on the effectiveness of educational technology serves to take valuable control away from the teacher; students use technologies that are very sex biased; and women teachers and female students are denied access to much technology.

In "Rethinking Science and Mathematics Curriculum and Instruction: Feminist Perspectives in the Computer Era," Damarin (1991b) argues that computers can play a part in feminist reform of science and math curricula if feminism helps computers to move away from linear presentations of facts. Computers can open science and math to more women and more ideas. In "Women and Information Technology:

Framing Some Issues for Education,” Damarin (1992b) discusses views of the computer as superior human being, as cyborg, and as human-computer dyad, and she argues that these views have had less-than-positive effects on women and on at-risk and nonliterate students.

9.7.2.3. Race. Though, as a topic of study generally, the relationships of education and race are being explored relatively well and often (e.g., Castenell & Pinar, 1993), very little has been written about issues of critical theories and race as they relate to educational technologies.

Exceptions include a work by Schwoch, White, Rilley, Scott, and Scott (1992) called “Drug Abuse, Race Relations, and the Prime Time News Program.” The article analyzes a prime-time news report called *The Koppel Report—D. C./Divided City*, in which urban black males are portrayed as the major perpetrators of illegal drug trade. Racism and a rich history of blacks overcoming overwhelming problems are never addressed in the report. White responsibilities for these problems are never addressed, and Koppel “wipes away the earlier accusations of genocide and race/class struggle, as well as the implication of government and social institutions in maintaining racial inequalities” (p. 77). In opposition to these problems, the authors see positive signs in alternatives such as a greater ethnic diversity in programming, greater numbers of camcorders with which people produce and understand programs, and a more active critical viewership.

In a study called “Photographic Images of Blacks in Sexuality Texts,” Whatley (1993; see also Whatley, 1990) concludes that, though publishers may be trying to represent blacks more positively in textbook photographs, in some books there is a tendency to emphasize the black man to the exclusion of the black woman, and “The possibilities for the sexuality of the black man become polarized into the dangerous pimp, or the good, loving father, without allowing for the full range of sexual expression allowed to whites” (p. 102).

9.7.2.4. Capitalism. As noted earlier, several critical theory studies examine the relations of capital to education generally (e.g., Bowles & Gintis, 1976; Liston, 1988; Feenberg, 1991). However, very few works concern themselves to any extended degree with critical theory and the relations of capital to educational technology. Most give the topic scant treatment (e.g., DeVaney, 1994d; Nichols, 1993; Bromley, 1992).

If more literature did exist, it likely would have the tenor of Apple’s (1993) work in *Official Knowledge*:

I must admit that when I am in Brazil, Thailand, and other countries doing educational and political work and participating with groups of people struggling to keep babies alive, to find enough food to eat, to even get a minimum of schooling for their children . . . I think that the relations that

make up what we call capitalism are much more oppressive than other kinds of relations *in many situations* (p. 176).

In *Teachers and Texts: A Political Economy of Class and Gender Relations*, Apple (1986) has produced what may be the only book-length work to critically address educational technology and capitalism. In this empirical-critical work, Apple (1986) concludes that:

The new technology is here. It will not go away. Our task as educators is to make sure that when it enters the classroom it is there for politically, economically, and educationally wise reasons, not because powerful groups may be redefining our major educational goals in their own image (p. 174).

In another of the very few works on this topic, a piece called *The Technical Fix: Education, Computers and Industry*, Robins and Webster (1989) claim that the root problem facing education is “the technocratic imagination which has come to dominate and deform education” (p. 256). They suggest that “Above all, it is necessary to appreciate the future of education as a political and ethical matter” and that “This political emphasis is about overcoming the stance of acceptance, accommodation, and adaptation involved in the commodification of education” (p. 274).

9.7.2.5. The Military. Except for relatively minor excursions into the topic (e.g., Bromley, 1992), as far as we can tell only Noble (1988, 1991) has written critically and at any length about the contradictions and social difficulties associated with the military’s being responsible for so much of the technology found in education. In *The Classroom Arsenal: Military Research, Information Technology and Public Education*, Noble (1991) talks about today’s difficulties with public education and the potential for computer-based education (CBE) to fix those problems. He says:

while appearing to address these problems in public education, CBE research actually participates in an entirely different enterprise, one with marginal or antithetical import for education. This is the design and engineering of man-machine systems. CBE research is thus, at best, an expensive distraction from the concerns of education.

At worst, the potential impact of CBE on education inasmuch as it reflects a continuation of the momentum accumulated throughout its historical development, leads only to further fragmentation, decontextualization, and depersonalization of education” (p. 189).

9.7.3 Critical Media Education

This section describes critical studies related to feminist media literacy, media and popular culture, television and video production, and postmodern media analysis.

9.7.3.1. Feminist Media Literacy. Some feminist perspectives are showing up in the critical literature about educational media, including Whatley’s (1991) “Raging Hormones and Powerful Cars: The Construction of Men’s Sexu-

ality in School Sex Education and Popular Adolescent Films,” and Hooks’ (1992) *Black Looks: Race and Representation*.

Ellsworth and Whatley’s (1990) *The Ideology of Images in Educational Media* is representative of works in this area. It is a unique collection of works that explore:

strategic understandings that ideological analyses make possible. It is intended to contribute to the strategies for interpretation available to educators as they define for themselves what is important to understand about mainstream educational media and what they must do with them in their particular contexts of struggle (p. 8).

In the first chapter of this text, Ellsworth (1990) points out that many educational films use conventions and viewing experiences that work against critical pedagogy, and that “media producers must stop creating images and narratives that invite viewers exclusively into physical, social, and ideological positions” where white patriarchal experts appear to know topics indisputably (p. 25).

9.7.3.2. Media Analysis and Popular Culture. Several authors (Giroux & Simon, 1992; McLaren, Hammer, Sholle & Reilly, 1995) have written critical examinations about media in general, the popular culture in which media occur, and education. In one such commentary, Giroux, Simon et al. (1989) study various forms of popular culture such as music and television to argue for a critical literacy that influences school curricula in terms of broadly democratic plurality. And the publication *Strategies* has been working toward media literacy for a long time, often from an overtly critical theory perspective (see, for example, “Schooling for Citizenship,” 1992).

The kind of arguments found in *Media Knowledge: Readings in Popular Culture, Pedagogy and Critical Citizenship* (Schwoch, White & Reilly, 1992) indicate how authors in this area want us to use critical perspectives to analyze film, television programs, advertising, and other forms of cultural representation. They say:

A critical pedagogy of representation must establish the relativity of all forms of representations by situating them in historical and social constructions that both inform their content and structure their ideological parameters. Second, a pedagogy of representation must bring to light the strategies that are used to structure how texts are read, used, and received within particular contexts and practices. At stake here is understanding not only how power is inscribed in a pedagogy of representation but also how such a pedagogy can be used to disrupt the ideological, cultural, and political systems that both inscribe and contain them. This suggests that the practice of reading ideologies be connected to the production of political strategies informed by transformative ideologies. Third, a critical pedagogy of representation must be able to articulate between representations that operate in particular educational sites and representations that operate in other cultural sites around similar forms of address and relevancies. Fourth, a critical pedagogy of representation must take up as a form of ethical address which grounds the

relationship between the self and others in practices that promote care and solidarity rather than oppression and human suffering. In this case, a pedagogy of representation cannot be disarticulated from the responsibility of both politics and ethics (p. xxix).

Ellsworth (1989b), in “Educational Media, Ideology, and the Presentation of Knowledge Through Popular Cultural Forms,” notes that students and others construct intersections between popular cultural forms and education when educational media incorporate popular cultural forms for teaching. In this way, educational media make legitimate school knowledge by associating it with positive connotations about leisure, entertainment, pleasure, and so on. To resist this legitimizing, she argues for a “transformative media education” that helps students to understand media mechanisms and to develop skills aimed at social change.

A few authors also use critical approaches in the international arena (Trend, 1994) and in visual language (Goodman, 1992).

9.7.3.3. Television and Video Production. Critical theorists in education also address television in any of its several guises. Some researchers examine resistance to patriarchy in commercial television (Lee, 1991). Becker (1986) explores the grammar of television. Authors in DeVaney’s (1994b) *Watching Channel One: The Convergence of Students, Technology and Private Business* employ a variety of techniques for understanding the ethical, political, economic, social, and cognitive—as well as educational—dimensions of Channel One, which has been seen by millions of teens. DeVaney’s (1994c, 1994d, respectively) “Introduction” and “Reading the Ads: Bacchanalian Adolescence” are examples of postmodern approaches to understanding Channel One. In the latter chapter, DeVaney concludes that:

It is clear that the producers [of Channel One] borrowed production conventions or codes from two sources, namely, MTV and postmodern TV ads. However, parts of each of these TV formats are Rabelaisian in content and structure, because they build their messages upon the material base of the body, they both juxtapose unusual images with the fragmented body parts, and they valorize eating, drinking, and sexual activities. However, TV ads cannot completely abandon a structure that will appeal to those consumers accustomed to reading coherent modern text. So, the grotesque is eliminated and kept at bay, as it were, for the ultimate purpose of product sales” (p. 148).

Some writers advocate using media/video production to help people understand TV. For instance, Denski (1991) relates classroom experiences of trying to move theory into practice in order to break down various oppressive dichotomies—such as teacher/student—and foster empowerment, resistance, invention, and hope. Elsewhere, Higgins (1991) shows how video production is essentially a political act, how the structure of video is ideological and value laden, and how critical approaches may help students be conscious of these values and seek alternatives to them.

9.7.3.4. Postmodern Media Analysis.

Kellner (1991) uses a postmodern approach to analyze media, and he wants to develop a critical media literacy so that people can “survive the onslaught of media images, messages, and spectacles which are inundating our culture” (p. 63). This requires that the distinction between “high” and “low” cultures be obliterated and that skills associated with deconstruction and reading of culture be learned. *Adbusters* (Vancouver, British Columbia) magazine is one place where these skills are put to use toward understanding advertising.

9.7.4 Ethics

Only a few writers (e.g., Anderson, 1992, 1994) address the relations of critical theories to educational technology and ethical or moral issues. DeVaney (1994a) does so in “Ethical Considerations of Visuals in the Classroom: African-Americans and Hollywood Film.” This work analyzes nonstereotypic images of African-American males so that those producing and using images in classrooms can show that the presence of blacks is rightfully constitutive of American life. Nichols (1994a), in “Considering Morals and Visuals (Beyond School),” lends a little attention to a postmodern view of images and ethics by noting that several postmodernist thinkers “are looking at the moral implications of mass media, including films and television. They are asking who is justified and empowered and who is delegitimized and ‘othered’ by mass media” (p. 375).

In “Critical Theory, Educational Technology, and Ethics: Helping Teachers Respond Meaningfully to Technology,” Nichols (1993) concludes that educational technologies are ethically suspect, and in “Searching for Moral Guidance About Educational Technology,” Nichols (1994b) suggests that educational technology is deleterious to education and the environment. Because educational technologists willfully neglect issues of educational inequality and ecology, because we inhibit democratic involvement by those affected by technology, we are morally suspect. He suggests that Habermas’s notion of consensual communication can, in part, help to bring a more morally balanced educational technology.

9.7.5 Action Research

In education generally, many action research projects have been carried out (Carr & Kemmis, 1986; McKernan, 1993; McCutcheon & Jung, 1990; Tripp, 1990). In the area of educational technology, some researchers (Berlin & White, 1992; Kember & Gow, 1992; Tanner, 1992; Watt & Watt, 1991) use action research but appear largely to neglect issues of truth, justice, and freedom about educational technologies. Legitimate knowledge in these works appears more often to come from those doing the research than from those being researched. Further, some authors (e.g., Nosek & Yaverbaum, 1991; Oakes et al., 1985; Zeni, 1990) seem to support technologies uncritically; the research seems to have set out mostly to increase the infusion of technology and/or consumerism in education.

Other instances of action research appear to adhere to the characteristics noted earlier by Grundy and others. For instance, Morgan (1990) looks at distance education and concludes that qualitative evaluation has not much affected distance education, though it has the potential to do so. Harris (1986) proposes a shift from positivist to critical theoretical and hermeneutical epistemological foundations for research in library science. Calabrese and Acker (1987) argue for viewing the design of information systems from sociotechnical perspectives so that the systems might be practical. Leino (1991) describes a successful 5-year project in Finland where learning was to be more active and cooperative, learners were to be more self-responsible, school knowledge was to be integrated with students’ social knowledge, and microcomputers were to be used effectively in this context.

9.7.6 Ecology

Few publications deal with critical theory as it applies to educational technology and ecological issues, though as this chapter is being written, the Professional Ethics Committee of the Association for Educational Communications and Technology is about to accept a new principle on this issue for its code of ethics. The principle encourages members to account for the ecological changes associated with their technology.

Elsewhere, Damarin (1990b) identifies links between educational technology and ecological damage. She elegantly fuses critical notions about domination and fragmentation with “ecology,” and she suggests that:

Ecofeminist considerations invite us to consider whether educational technology perceives the reality of “all aspects of human learning” as more like a freestanding machine than a living social organism, and to unthink this perception. How are educational technology practices of “analyzing problems and devising, implementing, evaluating, and managing solutions” rooted in more general notions of certainty, objectivity, and domination? How do these practices sanction the domination of both nature and women (and men)? (p. 4).

Nichols (1990) suggests several environmental and social catastrophes that will be exacerbated by educational technologies in that our uses of them support the

destructive Western belief that humans should or can control most of our existence via increasingly dominant rational and technical descriptions and manipulations. . . . Reports of the Earth’s declining condition make us clearer each day about the predicaments and dangers science and technology . . . have brought. In contrast, notions of a less rational-technical but balanced coexistence with the rest of the world, wherein our existence is dependent on leaving it free to influence us too, have slipped into a vague background knowledge for most Westerners.

More recently, Nichols (1994b) cites Bowers (1993) in order to say that:

The ecologically suspect beliefs to which Bowers refers include progress, individualism, and rationalism. Each of these beliefs is often associated positively with educational technologies . . . [but] technology uses a lot of energy, most of it being carbon-based fuels that pollute. Also, just where does all the used plastic in computers go when it is discarded? (p. 42).

9.7.7 Related Works

Several individual pieces and collections of criticism of educational technology bear mentioning. These works are less directly related to versions of critical theory noted in previous sections of this chapter, but the authors hold to ideas such as emancipation, social justice, and ecological concern, and/or they exhibit the same critical attitudes about science, technology, and rationalization as found in works noted already.

Relatively early in the appearance of microcomputers in educational arenas, the *Teachers College Record* (Sloan, 1984) published a special issue raising critical questions about computers in education. Except for once in this issue (Simpson, 1984), critical theory is not mentioned; however, to the extent that the issue is one of the first times that scholars challenge the rationalization inherent in computing and force existing views of educational computing to their systematic and spurious conclusions, it is well worth citing.

A special issue of *The Journal of Thought* (Robinson, 1990) is noteworthy, and the February 1994 edition of *Educational Technology* (Yeaman, 1994b) magazine is worth mentioning, because they make critical, broad, and penetrating analyses of educational technology, and they appear to be the only professional publication theme issues devoted to the study of the ethical and societal dimensions of educational technologies.

A similar uniqueness also can be seen in individual works by authors such as Hlynka (1989); Kerr (1989); Kreuger, Karger, and Barwick (1988); and Yeaman (1990). In "Resisting Technological Momentum," Taylor and Johnsen (1986) say that our lack of understanding of technology:

contributes to technological momentum and its pernicious effects. To overcome this condition, educators and young people will need to develop the vocabulary, definitions, concepts, and, equally important, the will to engage in a critical and extended study of technology (p. 219).

Bowers (1988, 1993), too, speaks eloquently to the ways education and rational-technical thinking are culpable when it comes to ecological threats (though, as noted in the next section, he would not want to be categorized with many of the critical theorists examined here). He concludes that middle-class culture, its schools, and its naive support of educational technologies combine to perpetuate ecologically destructive beliefs in the goodness of progress, individualism, and rationalism (Bowers, 1993, p. 15).

9.8 PROBLEMS WITH CRITICAL THEORIES OF EDUCATION

Critical theories are not without their critics. Perhaps the major criticism of them is that they fail to provide rational standards by which they can justify themselves, by which they can show themselves to be "better" than other theories of knowledge, science, or practice. Their ongoing problem has been to present a normative base for rationality that is not distorted by particular social ideologies (Held, 1983).

More bluntly, Gibson (1986) says that critical theories suffer from cliquishness, conformity, elitism, immodesty, anti-individualism, contradictoriness, uncriticalness, and naivety (p. 164). Perhaps this is the same sense that Hughes and Hughes (1990) have when they say of Habermas's theory of communicative action that it "says much about rational talkers talking, but very little about actors acting: Felt, perceptive, imaginative, bodily experience does not fit these theories" (p. 144).

Likewise, critical theories have been maligned for their dense language (Goodman, 1992). Philip Jackson's (1980) complaint still has appeal: "Terms like . . . *hermeneutics* get tossed around as though everybody but a fool is intimately familiar with their meaning" (p. 379). Counter arguments to these issues of language include claims that a call for clearer and more accessible language is anti-intellectual, a new "language of possibility" is needed, and oppressed peoples can understand and contribute to new languages.

Some feminist criticisms of critical theories have been especially powerful. Critical theories can be as narrow and oppressive as the rationalization, bureaucratization, and cultures they seek to unmask and change. Remember that Weiler (1991) said of Freire that he has a privileged position and believes in universals (p. 469). In one of the best-known analyses of critical pedagogists, Ellsworth (1989a) says they often are so tied to their vision of the truth that they fail to see themselves as one of many voices, and they fail to understand that their enlightening of the false consciousness of others may be a form of dominance, not liberation. Her comments and the vitriolic responses to them by McLaren and Giroux are given an enlightening reading in Lather's (1991) *Getting Smart*.

Further, Bowers (1993) points out that leaders for the emancipatory tradition in liberal education—Paulo Freire, Ira Shor, Henry Giroux, Maxine Greene—are remiss because they:

always deal with social justice issues at an abstract level, and thus never engage the cultural complexity of specific political issues like how to deal with a group that may be the victims of racial prejudice and economic discrimination but who largely adopt the "right to life" stance on the abortion issue. . . . As slogans intended to provide a general focus of messianic energy, "resistance," "emancipatory power," "transformative intellectuals," and so forth, must remain

ethereal and thus avoid the contradictions and splintering effects of the real world of politics (p. 111).

Bowers (1993) thinks critical pedagogists are particularly at fault for ignoring the ways in which their liberalism contributes to a declining ecology:

[Their] vision and rhetoric promote those aspects of the Western mindset that is [sic] contributing to the degradation of the environment: the individual or group of individuals who would constitute the “state of collective autonomy” is still viewed as independent of the natural environment; critical reflection remains the only legitimate expression of intelligence, which excludes both traditional cultures and the complex of information exchanges that characterize an ecology; change is still understood in human and culturally specific terms that equate progress only with an expansion of the individual’s sense of freedom. Understanding the interdependence of the human culture/natural habitat relationship in terms of what is sustainable over the long term . . . is simply not part of the Enlightenment vision of emancipation uncritically accepted by the followers of Dewey and Freire (p. 115).

9.9 PROBLEMS WITH CRITICAL THEORIES OF EDUCATIONAL TECHNOLOGY

It is no surprise that the criticisms outlined above also can be leveled at the critical theories of educational technology. In some instances, the written works and oral presentations of critical theorists in educational technology suffer from cliquishness, contradictoriness, naivety, and so on, and sometimes they fail to show how their ideas are any better or more reasonable than the theories they critique.

Much of the work of the critical educational technologists cited here is abstract and removed from doing the complex economic, social, political, educational, and personal work necessary to change any oppression related to educational technology. Put another way, the work usually does not take place in the lifeworld of learners.

Further, as Buckingham (1991) argues with regard to a critical-theory approach to media education and children, a rationalistic (i.e., critical-theory) approach to educational technology may fail to engage many learners’ emotions and cultural experiences. Similarly, Goodman (1992) suggests that we develop various forms of a “language of critical imagery” because critical educators cannot continue to offer understandings at abstract levels.

There could be the claim, too, that forms of critical theory of educational technology are oppressive. Remember that Luke and Gore (1992) argue that critical pedagogists use “technologies of power” to marginalize women.

Finally, critical theorists of educational technology never have analyzed the extent to which they promote ecologically disturbing results. For instance, Landow’s (1992) attraction to postmodern possibilities with computers is, in ecological

terms, an attraction to using more of the Earth’s resources to produce computers and, at the same time, produce more trash. It is bad enough that so few educational technologists ever look into the ways conventional educational technology philosophies, ideologies, and activities promote ecological degradation; but for educational technology critical theorists to omit looking at our own scholarship and the ways it offends ecology is, at best, ironic.

Except, perhaps, in the case of ignoring ecology, critical theorists of educational technology can refute these accusations. Critical theories may be better than others because they are contextualized and democratic. A few critical theorists (e.g., see several authors in DeVaney, 1994) are indeed working directly with the teachers and students affected by technology. Abstract rationalizing might be characteristic of theorists using a Habermasian sort of critical theory, but some postmodernists are evoking considerable concrete work and enthusiasm (“messianic energy”?) in people with whom they work.

9.10 SUMMARY

In this chapter, many of the critical-theory analyses of educational technologies (e.g., Streibel, 1986, 1991, 1993a, 1993b) reflect a longer-standing kind of critical analysis.

That is, they approach research from the point of view of immanent critique, which proceeds through forcing existing views to their systematic conclusions, bringing them face to face with their incompleteness and contradictions, and, ultimately, with the social conditions of their existence” (Young, 1990, p. 18). Further, many of the studies (e.g., Koetting, 1983a, 1983b) use the Habermasian framework about sciences and their interests: empirical-analytic science (with a technical interest in control), historical-hermeneutic science (with a practical interest in mutual understanding), and critical sciences (with an interest in freedom). However, a few of the analyses approach educational technology studies more from postmodern (e.g., DeVaney, 1994b; Hlynka & Belland, 1991a; Landow, 1992), feminist (e.g., Damarin, 1989, 1990a, 1991a, 1994; Ellsworth, 1990), or critical pedagogical (e.g., Koetting, 1994) points of view, which often seek to understand the subjectivities of people being oppressed or ignored (“othered”) in educational settings (see also 10.2, 10.5).

Though no great amount of them has been published, the written works produced so far in this area give people a solid start on working with and understanding critical theoretical analyses of some basic aspects of educational technology, especially aspects of the philosophies and the epistemologies of instructional design, computers, and educational technology generally. Many of the studies conclude that educational technology, instructional design, and computer uses are focused on knowledge and learning that are too analytical, empirical, cognitive, decontextualized, and instrumental. This is to say that the technologies are not used as wisely as possible. A few authors (e.g., Nichols, 1993, 1994b) go so

far as to say that learners suffer and technologists are morally suspect because educational technologies are misused.

Several topics about critical theory and educational technology have received minimal attention. These topics include social relations, feminism and technology and media, media and popular culture generally, and television and video. Further, some topics have received virtually no attention from critical theorists. Such topics include language, visuals, race, capitalism, the military, politics, ethics, and ecology.

A majority of the critical-theory studies cited here find problems with educational technologies. This is probably a result of the lack of experience educational technologists have with this kind of research as well as the nature of critical theory, which is intent on showing inconsistencies, incompleteness, and oppressive social conditions. The approach initially is bound to lead to seemingly negative appraisals of the technology.

In time, one would expect the view and the tone of the studies to take on a somewhat more positive face, given the potential for critical theory to encourage democracy, emancipation, and equality, for example. At the moment in fact, there is a strain of optimism that computer and other technologies will enhance communication, democracy, postmodernism, and so forth (e.g., Boyd, 1991; Denski, 1991; Landow, 1992; Preston, 1992). This is not to say a completely supportive or positive position about educational technology would ever be the position of critical theorists of educational technology. Given the inherently detrimental characteristics of technology (e.g., Winner, 1977; Taylor & Johnsen, 1986; Nichols, 1990, 1991), as well as critical theorists' search for oppression, totally sunny reports are best left to the technologically illiterate, to technophiles, and to technology capitalists.

9.11 BEING CRITICAL EDUCATIONAL TECHNOLOGISTS

Only a few educators understand the purposes and approaches of critical theory and are using it. Few people understand that critical theorists are working with the relations of technology to issues of human understanding, freedom, and action (as opposed to narrower issues of cognition, technique, science, or the practical) in the realms of ecology, society, school, and culture. Most educational technologists are examining, say, visuals, but not from the point of view that asks *why* someone should learn the content of visuals. People are examining educational capital from the point of view that asks where to get more money for more computers, but not from the view that asks why supporters of educational computing are taking advantage of women, people of color, and poor people, as Sutton (1990) concludes. Instructional design is being examined, but not often from the view that asks how we use it to get students to unconsciously do as someone else wishes—and to do so, mostly, for reasons of power and profit. This limited view is apparently the

case even with design theorists who support constructivist learning and other newer approaches to instructional design (such as those described in Hannafin & Hooper, 1992, p. 27).

Critical theories of educational technologies should be hopeful remedies to the kinds of problems with conventional stances toward technology identified in this chapter, and some readers may now be convinced that some version of critical theory is useful and enlightening and educative. What, then, could these hopeful people do by way of pursuing a critical theory of educational technology? Basic suggestions to this effect include:

- Educational technologists should use research methods embraced by critical theorists, as long as they are regulated by norms of noncoercive, democratic conversations. Action research in educational technology, for example, could move into the schools, where students and teachers should have primary responsibility for reports/activities associated with the research.

- Educational technologists should become more engaged with research about many foundational, essential, provocative, and morally pertinent issues that are largely unconsciously ignored. The issues include aspects of the philosophies and the epistemologies of instructional design and educational media generally. The issues include societal relations, feminism, and popular culture. Further issues include critical relations of educational technology to language, visuals, race, capitalism, the military, politics, ethics, and ecology. *The potential for fostering learners' social, educational, ecological, and democratic responsibilities and sensibilities related to technology generally and to educational technology specifically are enormous. Even more, our potential to engage individuals and cultures not directly related to education could be enhanced with critical-theory approaches to educational technology. After all, we are responsible to people of all walks of life.*

- Educational technologists should become critical pedagogists. Doing so holds tremendous prospects for engaging learners in meaningful education. Critical pedagogists should be guided by thoughts like McLaren's (1994a):

Knowledge is relevant only when it begins with the experiences students bring with them from the surrounding culture; it is critical only when these experiences are shown to sometimes be problematic (i.e., racist, sexist); and it is transformative only when students begin to use the knowledge to help empower others, including individuals in the surrounding community (p. 197).

- Educational technologists should not be busy using technology to do things *to* and *for* learners. We should be busy asking learners to tell us what to do—and to tell us from philosophically, economically, politically, ecologically, and educationally informed subjective positions.

• Educational technologists should be developing greater amounts of nonprint forms of critical scholarship. Very few materials in forms other than print were found in researching scholarship for this chapter. Yet, multimedia critical approaches to understanding educational technologies would lead to understandings that are far more humanly accessible, widespread and, so, potentially freeing.

9.12 WHY APPROPRIATE CRITICAL THEORY?

If learning, teaching, and knowledge are culture bound, ever changing, and morally imbued, then we must admit that the critical theory described in this chapter will probably not exist in its present forms for much longer. Life changes. Current contentiousness and discussions about critical theories, learning, teaching, and knowledge indicate this changeability (see Anyon, 1994; Cherryholmes, 1994). Other theoretical views will eclipse critical theory; perhaps, as Winkler (1993) suggests, we already have entered an era of “post-theory” where “the day of high theory is dead” (p. A9). American critical theorists might be eclipsed by current French thinkers, who represent a pulling back from the excesses of postmodernism” (McMillen, 1994, p. A7), and who are diverse, leftist, and not very interested in politics. For them, democracy is taken for granted and, unlike some American theorists, they have undergone a process of self-criticism (McMillen, 1994, p. A7).

But whatever critical theory becomes, it will remain with us because people will always be subject to and, so, interested in oppression. Critical theory will always have the potential to open educational technologists to deeply important questions of self and community, the character of technology, freedom, and environmental sustenance. For example, what is implied is that technology may not always be oppressive or harmful, but because it is human, it is bound to be harmful sometimes. In what moral, democratic, educative ways can conscientization about the harmfulness of technology be fostered? How can we use critical approaches to help people understand to the fullest extent possible the ways in which all forms and relations of technology—capital, the military, science, technology, rationalization, education, educational biotechnology (Nichols, 1990, 1994b), and so on—affect the consciousness, conscientiousness, and freedoms of people and the environments in which we live.

Most importantly, perhaps, we need to try continually to understand *why* we use technologies in education. In struggling with this most important of questions, perhaps we can do justice to, say, that disinterested, slightly sarcastic learner at the back of the classroom who says, “Why do we have to learn this stuff?” That is the same critical question McLaren (1994a) asks, and when we can consistently have honest and open conversations (but not finished ones) with that learner about *why* we will be on the road to more meaningful education. It may turn out that this sarcastic learner is less prob-

lematic to learning and society than students who naively and quietly accept cultural-technological forces in the classroom without wondering much about them.

Most importantly, it is moral to carry on conversations about the contributions educational technologies make to the problems of education, individuals, communities, and the ecology.

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