Critical Theory: Ideology Critique and the Myths of E-Learning

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Critical theory designates a philosophy and a research methodology that focuses on the interrelated issues of technology, politics and social change. Despite its emphasis on technology, critical theory arguably remains underutilized in areas of practical research that lie at the confluence of social, political and technological concerns, such as the study of the use of the usability of information and communication technologies (ICTs) or of their use in educational institutions. This paper addresses this situation by first describing the methodology of ideology critique. This chapter shows how critical theory can be used to articulate a critique or "de-mystify" three particular truths or myths widespread in the field of educational technology. These are claims that 1) we live in a "knowledge economy," 2) that users enjoy ubiquitous, "anywhere anytime" access, and 3) that social and institutional change is motivated by a number of fixed "laws" of progress in computer technology. These claims are shown to simplify or obscure a complex social reality that is constituted by different and conflicting forms of knowledge, and these claims are shown to work to the benefit of interests that are powerful and conservative in nature.

Introduction

Critical theory is generally defined as the diverse body of work produced by members and associates of the Frankfurt Institute for Social Research (or simply, the "Frankfurt School") between 1930 and the present. Among the most important of these individuals are Theodore Adorno, Walter Benjamin, Jürgen Habermas, Max Horkheimer and Herbert Marcuse. In a broader sense, critical theory is also associated with the contributions of late twentieth century social and even literary theorists, such as Louis Althusser and Roland Barthes. The theoretical contributions of the original Frankfurt School members frequently focus on media and technology (e.g. Benjamin, 1968; Habermas, 1970), on education (e.g. Adorno, 1981a) and on the relationship of both of these to social change generally (e.g. Horkheimer and Adorno, 1972). Despite the fact that these areas are of clear relevance to research and practice in educational technology, this theory and associated methods appear little recognized in research in this field.

The central argument of critical theory is that all knowledge, even the most scientific or "commonsensical," is historical and broadly political in nature. Critical theorists argue that knowledge is shaped by human interests of different kinds, rather than standing "objectively" independent from these interests. (Even knowledge encoded in the form of scientific facts, like those of epidemiology or astronomy, has changed over time, giving varying meanings even to relatively unchanging natural phenomena such as the spread of disease or the movement of celestial bodies.) Human interests are understood as multiple and sometimes contradictory; as a consequence, knowledge itself is also seen as fundamentally pluralistic and incongruous, rather than unitary and monolithic.
Critical theory singles out for criticism and critique knowledge that is marked by particular characteristics. It focuses on knowledge that presents itself as certain, final, and beyond human or political interests or motivations. Critical theory sees its central purpose as the destabilization of such knowledge. In its place, critical theory seeks to generate alternative knowledge forms, specifically, those shaped by social interests which are democratic and egalitarian. Critical Theory, in sum, seeks to "make problematic what is taken for granted in culture," and it does so in the interests of "social justice," especially in the interest of "those who are oppressed" (Nichols & Allen-Brown, 1996, p. 226).

Jürgen Habermas, a younger member of the Frankfurt School and one of the most well-known of contemporary social theorists, provides a basis for a compelling and widely-referenced way of classifying knowledge forms, or more specifically, of "knowledge-constitutive interests" (see Table 1, below). Habermas understands knowledge as constituted by human interests that are "technical," "practical" and "emancipatory" in nature. Each interest is associated with a particular type of knowledge, a particular medium or area of human effort and interaction (medium), and by a correlative science or specialized type of knowledge and study. Instrumental knowledge corresponds to technical human interests that are associated with work, labour, or production and with the natural sciences. Practical knowledge refers to interpretive ways of knowing through which everyday social and cultural human activities are coordinated and given meaning (hermeneutics being the methodology of interpretation). Emancipatory knowledge, finally, is the kind that critical theory itself seek to generate, and is articulated in terms of power, control and emancipation.

Table 1.1: Three kinds of human interest and knowledge as identified by critical theorist Jürgen Habermas (Source: Carr and Kemmis, 1986, p. 136; used with permission)

<table>
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<th>Interest</th>
<th>Knowledge</th>
<th>Medium</th>
<th>Science</th>
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<tbody>
<tr>
<td>Technical</td>
<td>Instrumental (causal explanation)</td>
<td>Work</td>
<td>Empirical, analytical, or natural sciences</td>
</tr>
<tr>
<td>Practical</td>
<td>Practical (understanding)</td>
<td>Language</td>
<td>Hermeneutic or “interpretive” sciences</td>
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<tr>
<td>Emancipatory</td>
<td>Emancipatory (reflection)</td>
<td>Power</td>
<td>Critical sciences</td>
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Critical theorists would maintain that these three forms of knowledge and interest are never entirely separate. Emancipatory, or more broadly, political knowledge and interests are seen as interpenetrating all knowledge forms – whatever their purpose or related interest. This all-pervasive character of political knowledge and interest is central to the critical-theoretical concept of ideology. Ideology, in this context, does not so much refer to all political or emancipatory knowledge in and of itself nor to extreme political orientations or programs. Instead, ideology refers to any kind of knowledge (whether technical, practical or emancipatory), particularly that which appears to be purified or freed of political interest: knowledge that is presented as self-evidently factual, neutral or objective. According to critical theory, it is precisely
this kind of knowledge that is actually most driven by interests. As Adorno describes it, ideological knowledge is characterized by an "overbearing matter-of-factness," as facts which present themselves as neutral, self-evident or objectively true, despite being strongly shaped by social interests (Adorno, 1981b, p. 126).

Ideology is also defined as "a systematic scheme of ideas, usually relating to politics or society, or to the conduct of a class or group, and regarded as justifying actions" (OED, 2007). Ideological beliefs or ideas are also generally "held implicitly or adopted as a whole and maintained regardless of the course of events" (OED, 2007). Ideology, then, is a set of ideas or a kind of knowledge that is used to justify actions of social and political consequence and that is considered so obviously commonsensical or natural that it is placed beyond criticism, "regardless of the course of events." Other ideas or ways of knowing, by implication, tend to be marginalized as nonsensical, radical, or as "ideological" (in the more common and polemical sense of the word).

The social acts that an ideology justifies are often closely allied with powerful social and economic interests. For example, in mid-19th century England it was generally a matter of "common sense" that keeping children in factories and out of school was socially productive, even economically necessary. Other views – that children deserved special consideration or that education would bring greater benefits to society in the long term – were marginalized. One member of the British parliament at the time went so far as to claim that regulations against child labor would represent "a false principle of humanity" and "an argument to get rid of the whole system of factory labour" (as cited in Feenberg, 2002, p. 146). Of course, what was once accepted as common sense is now highly criticized and easily recognized as driven by narrow, vested interests.

When ideological positions and arguments are elevated to (false) principles of humanity or are said to endanger whole ways of life, when they eliminate even the slightest hint of reflection or doubt, then they gain the status of "myths." These are "explanations of the world as all or nothing," truths that possess a "false clarity," that acquire the status of absolutes or that are presented as inevitable or indisputably "natural" (Adorno & Horkheimer, 1997, pp. xiv, 24). In his book of cultural critique, Mythologies, Roland Barthes echoes and amplifies this understanding: Myth "purifies" things, "makes them innocent...gives them a clarity which is not that of an explanation but that of a statement of fact." Myth, Barthes continues,

is constituted by the loss of the historical quality of things: in it, things lose the memory that they once were made... A conjuring trick has taken place; it has turned reality inside out, it has emptied it of history and has filled it with nature. (Barthes, 1972, pp. 142-143)

Critical theory responds to mythical inevitabilities and ideologically-charged "common sense" by undoing these emptying and conjuring tricks. It "denaturalizes" that which is seen as natural; it problematizes that which is plain and commonsensical. It does this through "ideology critique" or more, "immanent critique." Through these "critical" methods the researcher takes ideas or knowledge presented as commonsensical and self-evident, and compares them to the social and cultural conditions to which they pertain. For example, is a service like Facebook really about "connect[ing] you... with the
people in your life” (and around the world) as it claims (and pictures) on its homepage? Who is included and excluded from this connection? The researcher places ideas in their historical context and situates them in the complexity of a larger social background. Using the term "philosophy" to designate this critical method generally, Horkheimer explains that this process begins first by taking seriously the significance or "truth value" of everyday claims or ideas:

It should be admitted that the basic cultural ideas have truth values, and philosophy should measure them against the social background from which they emanate. It opposes the breach between ideas and reality. Philosophy confronts the existent, in its historical context, in order to criticize the relationship between the two and thus transcend them. (Horkheimer, 2004, p. 124)

Immanent critique, in other words, seeks figuratively to "measure" the difference between what is claimed in commonplace ideas on the one hand and what is evident from historical and other social sources, on the other (see also Held, 1980, 183-187). In the language of Barthes, this method seeks to restore to things their history and recovers "the memory that they once were made" rather than presenting things as though they have simply always been the way they are. Horkheimer sees these differences and contradictions overcome or "transcended" in the sense that immanent critique does not remain confined to either ideas or the background from which they emanate. Instead, in highlighting the contradictions hidden behind ideological claims, this critical method is also able to point to new ways of understanding circumstances which are otherwise taken for granted and it is therefore able to suggest new courses of action. Essentially, the de-naturalization and problematization of critique is performed by bringing a multiplicity of forms of knowledge into play, comparing what is accepted as self-evident in one set of sources, one literature or discourse, and by comparing it with what can be found in different and often alternative sources of information.

To put it in slightly different terms, ideology critique is about asking questions of things that are otherwise considered too self-evident to be put into question. For any claim of social or political relevance, therefore, ideology critique asks: "Why is it being made as it is?" "In whose interest is it being made?" "What is its relationship to different knowledge forms and claims –especially ones considered radical or marginal?" Engagement with ideological claims in this way can then extend critical inquiry to questions such as, "How might it appear to be natural or commonsensical and how can this 'naturalization' be undone?"

It is important to remember that the process of critique is not a question of replacing the deceptions of ideology with incontrovertible truths. Instead, as Adorno puts it, it is more a matter of disabusing ideology of "its pretension to correspond to reality" (Adorno, 1981b, p. 32). In doing so, ideology critique is able to show that beneath the veneer of the commonsensical or self-evident there exist contradictory or opposed knowledge claims or forms. Behind the "naturalness" of natural or obvious truths are clashing social and human interests.

It is not difficult to take the methods of imminent critique steps associated with critical theory, above and apply them educational technology (or to a related area), especially to statements and publications that are used to legitimate or promote particular priorities and perspectives in this field. The claims and
ideas presented in papers, presentations and proposals that are most obvious and least subject to dispute or disagreement in a field like educational technology can be subjected to critique -- with the intention of highlighting their constructed or ideological nature. In the case of educational technology in particular, examples of these self-evident truths or claims are frequently encapsulated in catchphrases or buzzwords that are relatively easy to find in the literature. Phrases like "knowledge age" (e.g. Scardamalia & Bereiter, 2010), the "digital generation" (e.g., Bourne, Harris & Mayadas, 2005) or fixed, exponential "laws" of technological change (e.g. Jukes, McCain & Crockett, 2010) are salient examples. As will be shown, these slogans give economical expression to "self evident" notions: that we live in an economy driven principally by developments in knowledge; that the Internet provides the possibility of ubiquitous education; or that technological progress drives educational change. It is these "common sense" ideas that, in this paper, will be subject to the "historicizing" and "denaturalizing" force of ideology critique. They will be shown to be shaped by powerful, entrenched and often conservative social interests. They will also be shown to simplify or obscure a complex social reality that is constituted by different and conflicting forms of knowledge and that can be interpreted variously, depending on one's interest or motivation.

**The Myth of the Knowledge Economy**

It is commonly asserted that "knowledge," "information" or more abstractly, "the networked" or "the postindustrial," are eponymous for our society, age or economy. As with ideological claims generally, these broad and often unquestioned assertions have significant social and political implications. In the case of educational technology, they bring with them urgent implications for all levels and forms of education -- from the preparation of children as "knowledge builders," through to wider society, in order to promote "collective responsibility for idea improvement" (Scardamalia & Bereiter, 2010, p. 12). As a consequence we are presented with assertions such as the following: "In what is coming to be called the 'knowledge age' [the] challenge [is to] get students on...a developmental trajectory leading from the natural inquisitiveness of the young child to the disciplined creativity of the mature knowledge producer" (Scardamalia & Bereiter, 2003; 1370; emphasis in original); and "The new economy has placed the acquisition of knowledge, and the role of higher education, at the center of national development" (Futures Project, 2001); or further, that in our "knowledge-driven era... education is a lifelong endeavor and may —only occasionally—be mediated by the traditional artifacts of our historical learning experiences (Gandel, Katz, Metros, 2004, p. 73).

Unsurprisingly, traditional educational artifacts -- such as "classrooms," "professors" and "degrees" -- are generally seen as being superseded in this new economy, specifically by more advanced information or knowledge technologies: by computer supported "knowledge building" environments (Scardamalia & Bereiter, 2003), learning objects (Polsani, 2003) and other advanced technologies and approaches. The idea of a radically new social, historical or economic order centered around information or knowledge has an important and politically-charged history. By examining this history and thus historicizing the idea of the knowledge economy, it is possible to show its gradual construction and its actual and possible contestation. This history begins with a paradigmatic "shift recognized as early as 1973 by Daniel Bell...the shift from an industrial to a knowledge economy..." (Gandel, Katz, Metros, 2004, p. 42). Bell,
who is sometimes described as one of the fathers of neo-conservatism (e.g. see Nuechterlein, 1990), is famous for his account of the "coming... postindustrial society." In fact, this phrase forms the title of a text by Bell, which arguably serves as the basis for much subsequent speculation on new social and economic forms for the twentieth century (e.g., Brzezinski, 1970; Toffler, 1980; see Mattelart, 2003 pp. 73-98). In his foreword to the 1999 edition of this famous text, Bell lists the characteristics of the coming postindustrial society and how they have become and continue to be manifest. Among these are four trends: First, Bell identifies a shift from "manufacturing to services" in the workforce and the economy (Bell, 1999, xv). The percentage of the workforce employed in the manufacturing sector in America, Bell points out, has shrunk over the past decades, and has been accompanied by an "extraordinary rise of professional and technical employment" (Bell, 1999, p. xv). Associated with this first shift is an important, second change, an increase in the general importance of education: "Today education has become the basis of social mobility," as Bell puts it, "especially with the expansion of professional and technical jobs..." (Bell, 1999, p. xvi). A third change listed by Bell is the increased importance of technological infrastructure, and what he refers to as "intellectual technology." "These technologies," Bell explains, "form a complex adaptive system that is the foundation of the electronically mediated global economy" (1999, xvii). The combined result of these and other changes is effectively summarized in Bell's fourth trend or characteristic: The "knowledge theory of value." "Knowledge is the source of invention and innovation. It creates value-added and increasing returns to scale..." (Bell, 1999, xvii).

This last point on the social and economic value of knowledge is perhaps of greatest importance in descriptions of the "knowledge economy." Bell makes it clear that his phrase, "knowledge theory of value" is a deliberate variation on Karl Marx's, "labor theory of value" (Bell, 1999, p. xvii). Marx understands labor – specifically physical labor – as being a unique force in capitalist economies in that it is the only one capable of "adding value" to commodities and products that can then be sold at a profit (Bottomore, 1983; 265). In a significant theoretical move, Daniel Bell as well as those following in his footsteps, present knowledge as playing this essential generative, value-adding, profit-making function. This has substantial consequences for understandings of the generation, mobilization and exchange of knowledge in educational and research contexts. These consequences and implications extend to the nature of knowledge itself, as well as to the multiplicity of knowledge forms posited by Habermas and others. What follows is a discussion of these consequences and implications.

With this "knowledge theory of value" as Bell recognized early on, the "knowledge work" occurring in education and elsewhere appears as a process of unprecedented importance. Besides being "the basis of social mobility" (Bell, 1999), education takes its proper place, as Peter Drucker says, at "the center of the knowledge society, [with] schooling [as] its key institution" (Drucker, 1994, p. 2). The critical economic and social value of these key educational institutions rests not so much in their function of social reproduction or in their potential to contribute to individual autonomy and responsible citizenship. The value of educational institutions rests instead in their role as a means of generating and reproducing knowledge as a productive force, above all as this force is mobilized in the natural sciences and in the applied social sciences:
The major problem for the post-industrial society will be adequate numbers of trained persons of professional and technical caliber... The expansion of science-based industries will require more engineers, chemists, and mathematicians. The needs for social planning...will require large numbers of persons trained in the social and biological sciences (Bell, 1999, 232).

When evaluated in terms of the post-industrial knowledge generation and creation, however, the school in its current form appears as woefully inadequate, hopelessly or even fatally outmoded. In the literature of educational technology and reform, schools and universities alike are characterized as following an outdated "industrial paradigm" (as opposed to a "postindustrial" model; Gilbert, 2005), as being "cottage industries" (Newman & Couturier, 2001; Smith Nash, 2005) or more generally as being "stuck in the past" (e.g. Lucas, 2003):

in very fundamental ways, education is stuck. It doesn't know where to move and it doesn't have the tools to move with. The dialogue, both within and outside the education profession, does not advance. The same blunt statements (including this one) are made over and over. The tools education needs, of course, are conceptual tools. In this so-called Knowledge Age [sic], that is the first requirement. (Bereiter, 2002)

Not surprisingly, this same author goes on to emphasize the importance of computer, Internet and other high-tech tools that correspond to these conceptual tools (e.g. Bereiter, 2002; pp. 460-462; Bereiter & Scardamalia, 2003).

A second implication of the knowledge theory of value is that it privileges some characteristics of knowledge over others. When knowledge is understood as a productive force, for example, it is not the role of knowledge as an instrument of enlightenment or of democratic decision-making that is foregrounded; instead, knowledge tends to be characterized as a kind of service, utility or good to be bought and sold, used, enhanced and re-used. It becomes a kind of "super commodity" that has market value like physical commodities but that also transcends the products of physical labor. Mason, Lefrere and Norris, writing specifically of "e-Knowledge," describe it as being "both a thing and a flow" that has the capacity to be "atomized," repurposed, updated, recomposed, metered, and exchanged" (Mason, Lefrere & Norris, 2003, p. 1). Unlike physical goods, however, this commodified knowledge can be readily "mobilized" and "unbundled to take account of the location of users and their needs at [any] location" (Mason, Lefrere & Norris, 2003, p. x). And when such knowledge or "content is modularized and coupled with learning objectives," these same authors explain, "it is typically referred to as 'learning objects' or 'knowledge objects'" (5). In the context of a "knowledge society" in which knowledge as an economic force and commodity is paramount, it takes its paradigmatic form in education as a learning object. These "learning objects," which have received much attention in the literature of e-learning, refer to modular, exchangeable, digital resources that are able to be combined and configured with other digital objects.

A third ramification of the "knowledge theory of value" is that when conceptualized as a kind of "super-commodity," knowledge becomes something quite different from the way it is understood by Habermas and critical theory – as being contestable, multiple and derived from different human "constitutive
interests." This multiplicity and this motivated or "interested" character of knowledge is effectively suppressed or erased. Instead knowledge is judged by a single and sole criterion, specifically, its "performance" (Polsani, 2003; emphasis in original). Writing about this performative knowledge, specifically as it is manifest in learning objects, Polsani explains:

Before the advent of the post-industrial age in the 1960s, Enlightenment and post-Enlightenment ideas determined the purpose and use of knowledge. The European Enlightenment defined the human being as a subject whose destiny is the realization of its full potentialities through reason. The goal of acquiring learning was the realization of spirit, life, and emancipation of humanity and the purpose of production of knowledge was the moral and spiritual guidance of a nation. However, in the contemporary conceptualization of knowledge, its purpose is no longer to realize spirit or emancipate humanity but to add value... The legitimacy of performative knowledge is no longer granted by the grand narratives of emancipation, but by the market. (2003)

This notion of a purely performative and productive knowledge that is privileged above any other knowledge forms is also described in other accounts of the knowledge society. Again it is Daniel Bell, in his Coming of the Post-industrial Society (1999), who provides an early and powerful distillation of this "knowledge age" phenomenon. In this text he describes the generation of productive knowledge as occurring paradigmatically in the "community of science:"

The community of science is a unique institution in human civilization. It has no ideology, in that it has no postulated set of formal beliefs, but it has an ethos which implicitly prescribes rules of conduct. [...] As an imago [an ideal or subjective image], it comes closest to the ideal of the Greek polis, a republic of free men and women united by a common quest for truth (Bell, 1999, p. 380)

This "universal" and "disinterested" scientific knowledge enables what Bell refers to as "technical decision-making" (Bell, 1999, 34). This form of technological management or administration is an application of knowledge, as Bell explains further, that "can be viewed as the diametric opposite of ideology: Technological decision-making is "calculating and instrumental, [while ideology is] emotional and expressive" (Bell, 1999, 34).

Of course, it precisely these kinds of claims that Adorno, Horkheimer, Barthes (and other critical theorists) would see as being ideological in the extreme, as exemplifying myth or the mythological in its critical sense. When knowledge claims deny their relation to human interests of any kind, their "pretention to correspond to reality" becomes absolute. In this context, simply having shown -- in the preceding paragraphs -- how these ideas originated and how they continue to evolve hopefully undermines their claims to natural or self-evident truth.

As emphasized earlier, however, the task of critical theory is not simply to engage in "criticism" for its own sake. It also seeks to generate emancipatory forms of knowledge able to provide alternative and progressive ways of thinking and acting. These can be found by looking to sources of information that
stand as alternatives to those usually referenced in e-learning or research and development in ICTs. One simple example of this kind of source is provided by information that is supplied to people who are unemployed or who find themselves, as is euphemistically said, "in-between jobs." Imagine yourself looking for a job as a student or considering the possibility of a new area of employment (as millions of people do every day). As a part of your job search you go to the US Department of Labor Web site and look at the "career advice" section available there. Under the heading "Career Changers" this Web site lists the top ten highest-growth industries in the US and shows the total number of jobs that will be created in each by the year 2014. Based the way that the "knowledge economy" has been described above, you would think that jobs in research, in high tech and in information technologies would be at the very top of this list. But this is not the case. The first three industries or areas of employment listed are "hospitality," "health care" and "retail." Together, these three categories will provide more new jobs than the remaining seven job categories, combined. These top three sectors are predicted to produce over 15 million jobs in the US by 2014. After these top three come the financial services and construction industries. These top five industries hardly suggest that your best chances for a job would be to become a "mature knowledge producer" who would manage and produce knowledge or direct and meter knowledge flows. You would be more likely to conclude that future career choices can be found in the area of service: Working in a Wal-Mart (retail), a Holiday Inn (hospitality), or perhaps more optimistically as a hospital worker or care provider (healthcare).

Indeed, Daniel Bell and other sociologists and economists have given significant emphasis to this service component of the postindustrial economy. They sometimes describe the current social and economic order as being both a knowledge and service economy, highlighting the postindustrial specifically as entailing a shift "from manufacturing to services" (Bell, 1999; xv; emphasis added). This particular emphasis has much more ambivalent and problematic implications than the more single-minded emphasis on knowledge or information that is likely familiar to those researching ICTs. Obviously, service jobs do not hold the long-term attraction or bring with them the income, status or stability associated with terms like the "information worker" or "knowledge producer." Also, service sector employees generally require only "short- to medium-term on the job training" (Henwood, 2003, p. 73), with obvious and baleful implications for education and higher learning.

Perhaps the most important implication of the postindustrial economy as one reliant on services is social and economic polarization. Management guru Peter Drucker, for example, distinguishes between a knowledge class on the one hand and a service class on the other. It has been part and parcel of the new economic order that the rich are getting richer by (among other things) taking advantage of economic changes related to knowledge and technology to increase their wealth, and that the poor, disadvantaged by these same changes, are getting poorer. A rather dire picture of where this all may lead is also provided by Drucker:

This society, in which knowledge workers dominate, is in danger of a new class conflict: the conflict between the large minority of knowledge workers and the majority of people who will make their living through traditional ways, either by manual work, whether skilled or unskilled, or by services work, whether skilled or unskilled. (Drucker, 1994, p. 67)
Thus, beneath the simplicity of the slogans about the "knowledge economy" and its imperatives for educational change, lurks socio-economic developments that are fraught with contestation between economic classes and clashing political interests. The myth of the knowledge economy obscures this clash by generalizing the situation of one class or group within the "knowledge economy," "knowledge workers" – to the population as a whole. To simply state that "children need to be placed on a trajectory" leading to knowledge work is to ignore the fact that other, marginalized and less celebrated forms of work are also structurally necessary in a "knowledge and service society." To recognize this is also to recognize that education must instead actively cultivate a range of skill sets germane to different economic fates.

Of course, given its inescapable involvement in knowledge in all its forms, e-learning and education have a further responsibility in this regard: to move beyond understandings of knowledge and of its construction and reproduction as a "universal" and "distinterested" productive force that is measured and valued only in terms of its performance. With regard to knowledge or learning objects, critical theory teaches the importance of moving beyond their conceptualization as interchangeable modules or "black boxes" of knowledge, separated from the contexts and interests associated with their use. Using critical theory, educators generating and reproducing knowledge are able to open up this black box to ask whose knowledge might be inside, in whose interests this knowledge might be constructed and about the possible and multifarious implications and contexts of its use.

The Myth of the Digital Generation

The “net generation” (also known as “generation y,” “millenials” or “digital natives”) has been defined as those born in industrialized nations between 1980 and into the first years of the 21st century – with some variation on beginning and end dates. Given this timeframe, what is clear is that as members of this generation have grown up, they have been exposed to technologies such as personal computers, the Internet, video games, and mobile phones. These young people are characterized as valuing these new media over the old, and using videogames and texting more than their parents and teachers. In *Grown Up Digital: How the Net Generation is Changing Your World* (2009), Don Tapscott cites studies which show that in many countries, vast majorities of net generation members would prefer to lose access to television rather than to the Internet (p. 43), and that they use their mobile phones for email and instant messaging regularly (p. 51).\(^1\) The argument then goes that these media uses and preferences reflect the way that this generation communicates, interacts and thinks and even the way their brains develop. Their use of this technology is said to accelerate their reaction times, shorten their attention spans, and multiply the tasks they can undertake simultaneously.

Today’s generations operate at twitch speed due to constant exposure to video games, cell phones, handheld devices, hypertext, and all of the other experiences that reflect an increasingly digital world, together with an expectation that they will have far more experience

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\(^1\) Data provided by Tapscott shows that large majorities of Net Geners in countries from the US to China, reporting that they “text messaged, e-mailed on mobile/cell phone in the past month.”
at processing quickly than our generations have, and they’re better at dealing with high-speed information [sic]. (Jukes et al., p. 36)

The conclusion that follows is that education must adapt to these changes, and engage with this generation on its own high-speed, multi-channeled and hypertextual terms. In this context, current educational methods can only be portrayed as seems hopelessly outmoded.

The model of education that still prevails today was designed for the Industrial Age. It revolves around the teacher who delivers a one-size-fits-all, one-way lecture. The student, working alone, is expected to absorb the content delivered by the teacher. This might have been good for the mass production economy, but it doesn’t deliver ...for the Net Gen mind. (Tapscott 2009, p. 122)

Different authors draw different conclusions at this point, with some recommending, for example, the integration of video games and simulations to teach conventional curricula (e.g., Prensky, 2001), and others asking for a more broad transition “from broadcast to interactive learning”—including problem-based and active “question and answer” approaches (Tapscott 2009, pp. 121-148).

The arguments behind the generational labels and slogans works in similar ways to the arguments associated with the "knowledge economy." Both sets of claims paint a picture of simplified economic or generational coherence that covers over a polarized and contested social reality. Instead of one class being designated as representative of an entire economy, the net generation myth relies on a stereotype of a particular kind of young student that is substituted for youth as a whole. Technologically competent, and sometimes remarkably gifted people from kindergarten to university are seen as being representative for most or all younger learners, and are associated with ways of knowing and learning that are uniform across the generation. Just as the slogans of the knowledge economy fail to recognize different economic sectors and realities, the slogans used to designate the net generation do not take into account the complexities of generational development and interaction, and of intergenerational educational processes themselves.

To conduct an immanent critique of this second myth, it is useful to begin by very briefly historicizing the notion of a “generation” itself. Curiously, the question of exactly what a generation is, and how it is manifest in social change is curiously absent from the mainstream literature on the digital generation—it is not to be found, for example, in any of the sources cited above. The term “generation” was first discussed at length as sociological category by Karl Mannheim, likely as a reflection of the historical traumas of his native Hungary and later, his adopted homes of Germany and Britain. Mannheim defines the term “generation” rather abstractly as “a particular kind of identity of location, embracing related ‘age groups’ embedded in a historical-social process” (1952, p. 367). It refers, in other words, to the coherence of a group that arises from its particular location in history or time (rather than from a shared skin colour, gender or socio-economic status). Studies have shown that the coherence of a generational group is typically defined in terms of “a collective response to a traumatic event or catastrophe”—such as a war, or possibly the 9/11 attacks (Edmunds & Turner, 2002, p. 12).
Viewed sociologically, a generation is only one of a number of ways of defining social stratification or differentiation; and as already indicated, other types of stratification include class, race and ethnicity. Compared to class, race and gender, the “generation” as a category is generally considered as a relatively weak form differentiation and stratification, and as one that is best viewed together in complex interrelationship with other types of social differentiation and forces of social change (e.g., Edmunds and Turner 2002, pp. 1-23; Kalmijn & Kraaykamp, 2007). For example, a child’s membership in an underclass (often also defined along racial and ethnic lines) will generally be seen as being more significant in his or her social and educational fate than the question of whether she is a member of Generation X or Generation Y. In North American societies, the origin of an individual in a rough inner city neighborhood or on a reserve rather than in a leafy suburb will, sadly, generally say much more about her educational fate than her birth in the era of, say, the eight-track or the mp3.

Further problems are created for the generational paradigm by the overall continuity of “inter-generational processes” – occurring through birth, maturation, ageing and death. There is no point at which maternity wards or mortuaries shut down to mark the end of one generation to await the arrival of the next – and it is from this that difficulty of defining a generational beginning and end-point arises. In this context of social renewal through birth, death, growth and aging, no one group or generation stands alone as a unified and unopposed social actor; moreover, no one cohort unequivocally remains at the beginning or end of an intergenerational process for long. For example, members of the “Net Generation” are entering institutions of education that are now dominated by members of the Generation X and “baby boom” generations. This same Net Generation will soon be coping, as a group, with members of what some have termed Generation Alpha (i.e. their own children), a generation shaped by yet unknown events and technologies. The only way that differentiations are marked in the overall continuity of the processes of birth and death is, as mentioned above, by historical trauma, produced by acts of war, or processes of colonialization (Edmunds & Turner, 2002, p. 12) like national liberation or (in the Canadian experience) residential schooling. In comparison to events like these, the adoption of new media technologies (shown to occur at different rates for different classes, genders and nationalities; e.g., Madden & Rainie, 2003) is not a particularly clear or powerful social event. As the term “stratification” implies, any one group, however loosely defined, is a layer “sandwiched” between a number of others, rather than a lone actor on a more-or-less empty stage.

It is therefore not surprising, then, that empirical research does not back up claims of the mainstream net generation literature outlined earlier. For example, a study (Pedró, 2009) of “new millennium learners” in some of the 30 OECD countries concluded that “students tend to be far more reluctant in [the use of emerging media in education] than the image of the new millennium learner would suggest.” Students may use texting and Facebook on campus and at home, but this does not translate into demand for the use of similar technologies in the classroom. The study also reports that the majority of the students surveyed “do not want technology to bring a radical transformation in teaching and learning, but would like to benefit more from their added convenience... in academic work.” These students, like at least some of their teachers, are inclined to see new media as a way of enhancing what occurs in classrooms or other in established educational settings, rather than as supplanting them.
Reeves and Oh (2008) survey a wide range of studies on generations, technology use and learning styles, and come to a similar but more general conclusion:

Generational differences are weak as a researchable variable in a manner similar to learning styles... The bottom line on generational differences is that educational technology researchers should treat this variable as failing to meet the rigor of definition and measurement required for robust individual differences variables. The gross generalizations based on weak survey research and the speculations of profit-oriented consultants should be treated with extreme caution in a research and development context. (p. 303)

Reeves and Oh’s conclusions about “gross generalizations” and the exercise of “extreme caution” are echoed by other researchers that have looked at this same issue. David Buckingham, a leading researcher in media and literacy, speaks specifically of Tapscott in making the following point about the quality of internet use by net generation users:

Tapscott's approach... ignore[s] what one can only call the banality of much new media use. Recent studies... suggest that most children's everyday uses of the Internet are characterized not by spectacular forms of innovation and creativity, but by relatively mundane forms of information retrieval. (Buckingham, 2006, p. 10)

Underlying the myth of the net generation is a pattern already familiar from the myth of the knowledge economy: The habits and preferences of one, privileged group (in this case, those involved in “spectacular forms of innovation and creativity”) is substituted for an entire social category (all children or youth). And as with the knowledge economy myth, what ends up being distorted are differences within the society more generally, above all, those associated with race, ethnicity and class. As has been already made clear, these forms of stratification have greater discriminatory and predictive power than the relatively weak stratification between generations. They would appear as bold, black lines, running across the relatively soft gradations as one generation blends into another. The net generation myth operates making these intergenerational gradations seem much more obvious and urgent for education than the harsher realities of differences in class, race and ethnicity –created as they are by painful histories of colonization, conflict and inequity.

**Technology drives educational change**

The third and final myth to be considered here is not associated with a single catchphrase or slogan in e-learning but this makes it no less powerful and pervasive. This myth is registered instead in ways of talking about technological and social change. More specifically, it appears in connection with technological *impacts on* society, particularly in statements that present technology as single-handedly achieving change in education or even as “driving” educational change. In its most extreme form, this myth is encapsulated in so-called "laws" of technically-driven progress and change, which are found with surprising frequency in literature promoting and discussing e-learning and other high-tech subjects.

Examples of these laws include Moore's law (the regular doubling of capacity of computer processors; Moore, 1964); Kurzweil's "law of accelerating returns" (positing the exponential nature of technical
innovation; Kurzweil, 2001); or Gladwell’s "tipping point" (a mathematical model of "epidemic" dynamics of change; Gladwell, 2000). According to this myth, technological progress is independent of other social conditions, and it has the power to change professional practices and priorities irrevocably or even, to render them obsolete. As a result, technology – as the word "impact" suggests – can be said to have decidedly "traumatic" repercussions on the individuals and institutions with which it comes into contact (Hilton, 2006; Pannabecker, 1991). During the dot-com era– when “education” was seen as the Internet’s “next killer app" (Chambers, 1999)—people were predicting that it would turn traditional campuses into "relics" (Drucker, as cited in Lenzer & Johnson, 1997), and make the earlier explosion of email “look like a rounding error” (Chambers, 1999). Technology, in other words, is made to appear as the "destiny" of education and even of society as a whole.

As an example, Jukes, McCain and Crockett combine Moore’s law with similarly exponential developments identified by Kurzweil and others to arrive at the conclusion that “we live in exponential times;” and following from this, they insist on the :

So what can be done? First, teachers must adapt to a new paradigm for teaching and learning. They must adopt new behaviors for what, where, when, and how they teach students. They must strive to bring their thinking into the 21st century, keeping what is still valid and important while abandoning that which no longer applies. (2010, n.p.)

According to the authors it is essentially a matter of combined, exponential technological developments, that determines the future of education and the fate of educators: "There will be many winners and losers... the key to being a winner in the emerging digital culture of the 21st century is to make a radical shift in... mindset or paradigm" (Jukes, McCain and Crockett, 2010, n.p). Educators, in other words, are not seen as being particularly active or influential in the determination of the future of their profession: Instead, they can either be a winner or a loser, make a radical shift in mindset or be left behind. “

Technical progress —manifest in terms of processing capability and other developments – is presented as inevitable and autonomous in its effects.

Of course, technology as a force that drives social and educational change is not always expressed in such a direct or portentous manner as it is in the example, above. At the same time implicit understandings of technologies as something that single-handedly and directly cause or force social change are detectable in a great deal of research on innovation. This is illustrated investigations based on Everett Roger’s model of the diffusion of innovations (Rogers, 2003). This model understands these innovations or technologies generally as being diffused or disseminated throughout a population as ready-made artifacts that are absorbed by a largely passive group of users. This generally allows for only two responses: "Adoption" or "resistance" of varying intensity. Rogers uses labels for degrees of adoption or resistance that are rather telling: "innovators" "early adopters" "late majority" and "laggards." The character of these labels leaves little doubt as to how various responses are viewed in this model. In e-learning research, as it happens, the population that is often studied and categorized in this way is comprised of university faculty members (e.g. Bull et al, 2002; Mahony & Wozniak, 2005; Giani, 2010).
An immanent critique of this myth can be undertaken simply by looking to alternative sources of information on technology to the work of scholars in the history and sociology of technology. Research and scholarship in these kinds of studies warn of the trap or fallacy of technological determinism: "the belief that social progress is driven by technological innovation, which in turn follows an 'inevitable' course." (Smith, 1994, p. 38; see also Chandler, 1995). There are, of course, different forms of technological determinism. The understanding of technological change implied in a great deal of e-learning research would fit well under what scholars have called "hard" rather than "soft" determinism, and also would fit under "optimistic" rather than "pessimistic" determinism. In the case of "hard" determinism, as Smith and Marx explain, "agency (the power to effect change) is imputed to the technology itself...with the advance of technology lead[ing] to a situation of inescapable necessity" (Smith & Marx, 1994; xii). As indicated in the example cited above, technology is indeed given the agency of a power or force of change. Technology (in this case, computer and Internet technology in general) is seen as being capable of acting on its own to produce significant social and educational transformation. What makes this determinism optimistic is that the "positive" aspects of this technical change are generally emphasized over "negative" ones. For example, faculty members who do not adopt technologies are seen as "laggards," as refusing the obviously "positive" potential of technology, rather than as being the last or wise few to resist its "negative" or destructive consequences.

The recent history of e-learning itself provides some powerful counter-examples that refute this overriding optimistic, "hard" deterministic bias. One example is provided by the emergence and entrenchment of "learning management systems" such as WebCT or Moodle in traditional educational institutions since the late 1990's. In this case, the rapid emergence of the Internet as a popular medium did not mean that it simply washed over the educational landscape, doing away with existing institutional and business models (as Drucker and others predicted). Instead, through a complex series of developments, interactions and "negotiations," this technology was re-shaped, adapted and appropriated through the development of Web-based software. In many instances, these software systems originated directly from universities themselves, in the form of individual or community projects of faculty and other university developers. These systems, moreover, have been designed and adapted in clear conformance with the interests and management structures of large educational institutions: they are centrally administered, meaning they can be serviced and supported by network or computing services units already in place in these institutions; and they explicitly define "roles" (via system login options) and thereby reinforce traditional functions and identities of university personnel, teachers, students, and administrators. The adaptation of Internet technology, as a result, seems to have had the end effect of reinforcing rather than disrupting many conventional educational practices and functions.

By introducing a vocabulary that makes use of terms such as "adaptation," "negotiation" and "interaction" – rather than casting technology in terms of "impacts," "laws" and "inevitalities" – the relationship between technology and education appears as much more complex. Technology itself is no longer an unstoppable force that inevitably determines the future of society in general and e-learning in particular. Going even further, it is possible to say that when it is viewed as the result of complex, multi-causal processes of social construction and negotiation, technology emerges as something very much
other than the destiny of either education or society as a whole. It becomes, as Andrew Feenberg describes, "an 'ambivalent' process of development" that is "suspended between different possibilities" (Feenberg, 2002, p. 15). "On this view," Feenberg concludes, "technology [itself] is not a destiny but a scene of struggle." (Feenberg, 2002, p. 15).

Conclusion

Critical theory, a methodological orientation familiar in many areas of social research, has clear relevance to e-learning as one example of a field of applied research into ICTs. This relevance has been demonstrated in this paper by applying ideology critique to a number of basic and even self-evident notions and understandings in literature, and that promotes, describes and investigates e-learning. At their most extreme, these notions – of a knowledge economy; of a digital generation; of inevitable, technology-driven change – can be understood in critical-theoretical terms as "myths." The point of critiquing these myths, however, has not been to assail what is essential or axiomatic to e-learning or any other field, but rather, to provide a corrective: to show that economic, technical, cultural and historical conditions central to the use of information and communication technologies are complex and need to be interpreted and investigated in new, different and above all, interdisciplinary ways.

Such an explicitly interdisciplinary approach is indispensable for providing a more realistic and balanced basis or set of starting points for undertaking e-learning and likely other fields as well. Research becomes compromised or even misdirected if it is based on presuppositions that are fallacious and oversimplified. Alternatively, when myths, like those listed above, are clearly identified and their repetition avoided, the realization of alternatives and broadly progressive research designs becomes easier and more natural. For example, recognizing that many contemporary economies are oriented to the provision of service at least as much as to knowledge or information will surely effect how the contribution of ICT projects to the economy are conceptualized in research designs and proposals. Understanding technology as a scene of struggle rather than as a destiny or fait accompli might also help to guide the exploration of metaphors other than "impact" or "dissemination" when inquiring into the relationship between technology and changing institutions and practices.

References


