

# Flexible LEARNING

Saint Paul University

## UNDERSTANDING E-LEARNING TECHNOLOGIES-IN-PRACTICE THROUGH PHILOSOPHIES-IN-PRACTICE

Heather Kanuka  
University of Alberta

*Theory without practice leads to an empty idealism, and action without philosophical reflection leads to mindless activism.*

– Elias & Merriam, 1980, p. 4

### INTRODUCTION:

#### WHY IS UNDERSTANDING OUR PHILOSOPHIES IMPORTANT?

Existing and emerging e-learning technologies are having intense, immediate, and disruptive transformations on education systems (Archer, Garrison & Anderson, 1999); nowhere is the impact felt more than on the practitioners who teach. More specifically, education has moved into a third decade of profound change in how courses and programs are designed and delivered. During this time, many new possibilities have become apparent, but also many new challenges.

With the rise of e-learning technologies in all sectors of education, there has been one most frequently asked and investigated question: Has e-learning delivered on its promises? Leaders in the field of education have argued that e-learning technologies can effectively respond to accelerating global competition (Daniel, 2000), increase the quality of learning experiences (Garrison, 2002), remove situational barriers (Bates, 2005), and be more cost effective (Twigg, 2003). In an effort to provide evidence for the promises forwarded by e-learning advocates, interventions and explorations into the use of e-learning technologies have been conducted. Based on these investigations, commonly cited advantages of e-learning technologies include an ability to provide just-in-time learning; increased access; removal of time, place and situational barriers; cost effectiveness; greater accountability; increased interaction; provision of future employment skills for students; and effective support for lifelong learning.

As e-learning has become more pervasive, however, expressions of uncertainty, concern, and skepticism have also emerged. The growing lists of concerns include commercialization of teaching; lack of face-time between students and teachers; techno-centric models prioritized over face-to-face culture; devaluation of oral discourse/discussion practices; centralization of decision-making and service provision; concerns that complex and deep learning cannot be satisfactorily achieved without real-time classroom experience; increased technological and pedagogical uniformity; surveillance options that violate privacy policies; recontextualization of established cultural practices, such as education as a cultural discourse; and concern about the growing digital divide and downloading of costs to students.

When this kind of schism between opinions occurs, it can be useful to step back, reflect, and consider the nature of the disagreement. If we reflect on our own as well as others' opinions about both technology and education through a philosophical lens, it is possible to become aware that these kinds of differences can be reduced to perspectives on *philosophies-in-practice*. Draper (1993) asserts that an examination of our opinion, or philosophy-in-practice, is more than an academic exercise. Our philosophy determines how we perceive and deal with our preferred teaching methods – which includes how (or if) we choose and use e-learning technologies.

## WHY IS KNOWING OUR PHILOSOPHIES-IN-PRACTICE IMPORTANT?

At present, education at all levels is to a great extent minimally regulated in terms of what will be taught, how it is taught and, in particular, what role e-learning technologies play. Individual teachers, schools, colleges, and/or faculties often determine the content and scope of what they will teach, then choose methods or strategies, instructional materials, and the e-learning technologies they believe will best help the learners to gain new knowledge, skills, and/or attitudes. As such, educators have the freedom as well as the responsibility to set learner expectations and to determine the purpose and outcomes of the learning activities (Zinn, 1990) – which includes a decision on the use of e-learning technology. These decisions are embedded in our philosophical views about both education and technology; underlying these views is our interpretation of the world and our actions within it. As such, knowing our philosophical views is important.

And yet, many educators' philosophies are often unrecognized and rarely expressed, though they may be understood implicitly (Elias & Merriam, 1980). More importantly, educational practices concerned with using and choosing e-learning technologies could be conducted more effectively if basic philosophical differences were understood. Differences over the benefits of e-learning technologies are linked to differences over the ends our educational purposes are to achieve (Kanuka & Kelland, forthcoming). For example, the debate over whether or not we need to prepare our learners for a pervasively networked world revolves around what types of persons we expect our education systems to produce.

When considering the interrelationship of philosophy and the choices we make about e-learning technologies, it is important to be aware that philosophy inspires our activities and gives direction to our practices. Specifically, when we are aware of the philosophies of teaching and technology, we can then articulate our own personal philosophy. Knowing our personal philosophy helps us to understand why we act and think the way we do about using e-learning technologies, as well as why others think and act the way they do about e-learning technologies. Moreover, knowing our own and others' philosophies provides us with the ability to understand the consequences of our technological choices, as well as the effect that our philosophical orientation has on our learners. Further, it can facilitate effective communication with others when we can explain not only what we are doing, as well as why (Draper, 1993; Darkenwald & Merriam, 1982; Zinn, 1990).

The following sections of this chapter describe the philosophical orientations of teaching and technology, and discuss how our views of e-learning technologies are grounded in our philosophy-in-practice. Our beliefs about teaching and technology guide our practice and, as such, understanding our beliefs can result in informed practices where we can articulate not only what we are doing, but why.

## WHAT IS A PHILOSOPHY OF TEACHING AND TECHNOLOGY?

A philosophy of teaching and technology can be defined as a conceptual framework that embodies certain values from which we view the many aspects of education (Zinn, 1990), including the field of e-learning. A philosophy of e-learning technology is necessary because too often educators are concerned with what to do with e-learning technologies without examining sufficiently why they should do it (Draper, 1993; Elias & Merriam, 1980).

Embedded in our opinions on e-learning technologies are views on the (non) neutrality of technology. The debate over technological neutrality revolves around whether or not technologies are neutral and whether or not biases can arise only from the ways in which technologies are used by teachers and students – or whether biases can occur through the technologies themselves. An analogy to contextualize and bring relevance to views on the neutrality of technologies can be gained from the catch phrase, “People kill people, not guns.” A comparable catchphrase in the field of e-learning might be, “Educators reshape education, not technologies.” Many educational technologists agree with Jonassen (1996), who asserts that “carpenters use their tools to build things; the tools do not control the carpenter. Similarly, computers should be used as tools for helping learners build knowledge; they should not control the learner” (p. 4). While Jonassen’s argument sounds solid in its rationale, media theorist Marshall McLuhan (1964) suggests otherwise. Specifically, even though the neutrality of a tool speaks to our common sense with respect to the ways in which tools are used, McLuhan and Fiore (1962) maintain that media can profoundly transform society and the human psyche. McLuhan also made famous the aphorism, “The medium is the message,” giving pause to the assumption of the non-neutrality of technology.

Building on the assumption of the non-neutrality of technologies, Chandler (1996) postulates that media shapes our experiences, and it does so in part through its selectivity. In particular, Chandler asserts that when we interact with media, we act and are acted upon, use and are used. In this respect, we can use the work by Brent (2001) to illustrate the changes caused by technologies when we look at this through the lens of a gestalt perspective, where certain elements of the learning process are brought to the foreground while others are moved to the background. Consistent with McLuhan’s and Brent’s views, Postman (1993) maintains that, “embedded in every tool is an ideological bias, a predisposition to construct the world as one thing rather than another to value one thing over another, to amplify one sense or skill or attitude more loudly than another” (p. 13). Postman and McLuhan hold definitive views about the non-neutrality of technology. Others, such as Ihde (1979) and Dahlberg (2004), adopt moderate views of technological determinism, or a “nonreductionist” orientation. Ihde, for example, suggests that the use of instruments both amplifies and reduces human experiences.

Similar to mainstream philosophies of education (e.g., Zinn, 1990; see also Elias & Merriam, 1980), when we use the purposes of technology as the basis for organizing the philosophical literature, it becomes apparent that there are different and opposing perspectives. Educators who choose and use e-learning technologies should be knowledgeable about the philosophies of teaching, as well as the multidimensionality of technological determination, and be reflexive about the limits of their activities in *both* areas.

## OVERVIEW OF PHILOSOPHICAL ORIENTATIONS

Knowledge of philosophical orientations provides us with insights into the nature of the use of e-learning technologies. A philosophy of teaching and technology is essential for answering e-learning questions, and their relationship to other activities within the education sector. Of course, these kinds of technologically-related concerns have recurred throughout the decades; indeed, some have even persisted over the centuries. The common thread of

persistent technological debates in the field of education is that they have tended to have varying implicit assumptions about the basic nature of an education. It is apropos for those of us concerned with education to at least attempt to address the principal concerns and issues that are currently being put forward; such efforts can help legitimize and give direction to the growing field of e-learning.

The following sections in this chapter outline the differing philosophical orientations for teaching and technology. As you read the philosophies presented, you may want to ask yourself which philosophy you find yourself most in agreement with, especially regarding their aims and values.

## PHILOSOPHIES OF TECHNOLOGY

In regard to e-learning technology, there is a tendency to orientate ourselves to one of three orientations (Dahlberg, 2004). The first position is referred to as *uses determinism*. This view pertains to the instrumental uses of technological artefacts and, correspondingly, the uses effects on technological artefacts and society. The second position is referred to as *technological determinism*. This view focuses on the forms and effects that technological artefacts have on uses and society. The third position is referred to as *social determinism*. This view asserts that social contexts and cultures affect forms and uses of technological artefacts. Following is a broader discussion of each orientation.

### Uses Determinism

In its simplest sense, this position emphasizes technological uses and focuses on the ways in which we use technologies within learning and teaching transactions. In this approach, technologies are perceived as neutral tools and are simply devices that extend our capacities. As users, we determine the effects of technological artefacts. Scholars commonly associated with this orientation include Fiske (1987), Harrison and Stephen (1999), Katz and Rice (2002), Sudweeks, McLaughlin and Rafaeli (1998), Garramone, Harris and Anderson (1986), Ebersole (2000), and Welchman (1997).

In educational technology, we see this view expressed by Jonassen (1996) and Clark (1994). As noted in the introduction, Jonassen asserts that “carpenters use their tools to build things; the tools do not control the carpenter. Similarly, computers should be used as tools for helping learners build knowledge; they should not control the learner” (p. 4). This view is consistent with the seminal writings of Clark (1983; 1985), who argues that our uses of instructional strategies are the active ingredient in effective learning, not the technology. In his writings, Clark claims, in part, that technologies are “mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition” (1983, p. 445). Such views assert that the technological artefacts we use for educational purposes (e.g., course management systems) are neutral tools, able to serve the aims and objectives of agents (e.g., educators) employing them.

This perspective is certainly not new, emerging as a response to the pessimism of the Frankfurt School. Indeed, today the majority of e-learning technologists would likely state that this is their view of the role of e-learning technology within the learning process. This view is appealing – especially in North America – because it asserts that, as individuals, we have control and autonomy over the technology (Morley 1989). Dahlberg (2004) observes that this should be of little surprise, given that American communications studies has been significantly influenced by the liberal pluralist *uses and gratification* model that developed in response to *effects* traditions.

While appealing in many respects, uses determinism can result in a number of contradictions and problems when educators hold this perspective in a singular fashion (Dahlberg, 2004). In particular, viewing e-learning

technology as a neutral tool assumes that there is a technological fix for an educational problem. This instrumentalist line of thinking assumes that technologies exist without social or political origins, and that users and users are the causal agents in the production of social action (Lacroix & Tremblay, 1997) – often celebrating unconstrained consumer sovereignty, and resulting in instrumentalism and/or structuralism (Golding & Murdock, 2000). The problem with instrumentalism is that there is an inclination to place emphasis upon the intentionality of agents, with an unbalanced focus on the interactions between the actors and the technologies. As a result, educators tend to narrowly focus on the role of agents and disregard the broader social structures and/or technological artefacts' effects on the learning outcomes, leading to explanations that overemphasize the power and autonomy of actors. The belief that individual actors have complete control over the effects of a technological artefact is a misguided and naïve assumption. "Such an assumption overlooks the structuring of actions by technological systems and neglects the social 'embeddedness' of these systems and their users" (Dahlberg, 2004).

### Social Determinism

In this perspective, educators are concerned with the integration of technological artefacts within social systems and cultural contexts. This perspective emphasizes the way our uses of technologies are affected by the social structures and the social construction of technological artefacts. Educators holding this view are concerned about the ways that social and technological uses shape the form and content of the learning experiences. Scholars commonly associated with this orientation include Golding and Murdock (1997), Mosco (1996), Garnham (1990), Woolgar (1991a; 1991b; 1996; 2002), and Schiller (1999).

Many e-learning futurists and pundits fall within this perspective, such as Larry Ellison (chair and CEO of Oracle Corporation), Peter Drucker (author of *The Effective Executive and Management Challenges for the 21st Century*; recipient of the Presidential Medal of Freedom from President George W. Bush; and featured on the front cover of *Forbes Magazine*), and Jaron Lanier (virtual reality pioneer). All of these suggest a looming breach of monopoly for providers of education should they not respond to accelerating globalization and increasing competition. Typically, the solution presented is a move to technologically innovative and consumer-oriented education. Peter Drucker, in an interview with *Forbes Magazine* (1997), claims that social changes will result in the physical presence of universities ceasing to exist within ten years. One might even imagine a Darwinian process emerging, with some institutions consuming their competitors in hostile takeovers.

These views rest upon the way technology is socially embedded and constituted. In particular, social choices shape the form and content of technological artefacts (Dahlberg, 2004). As with uses determinism, however, social determinism has logistical issues that are difficult to resolve. Specifically, this orientation can lead to flawed understandings of educational technology, if developed without reference to user agency or material limits (Dahlberg). The line of reasoning in this orientation that technologies embody social choice – negates a multifaceted understanding of the place of agency in technological development. Many of the pundits and futurists cited above have an inaccurate view of the power of social context and its ability to impact education. Social contexts do not simply manipulate education systems at will. In our everyday lives, there is a dynamic mutual shaping between the social, technology, and users' environments.

### Technological Determinism

Within this orientation, technologies are viewed as causal agents determining our uses and having a pivotal role in social change. Scholars most commonly associated with this orientation include Dubrovsky, Kiesler and Sethna (1991), Sproull and Kiesler (1986), Argyle (1996), Spears and Lea (1994), Marcuse (1941), Habermas

(1970), Bell (1973), Lyotard (1984), Baudrillard (1983), Castells (1999), Gates (1995), Pool (1983), Toffler and Toffler (1994), Heidegger (1977), Postman (1993), and Marx (1997).

The label technological determinism has tended to have a negative connotation that educational technologists who hold this view regard technology as a distracting and potentially even harmful component of education systems. The origin of technological determinism is connected to a Marxist class analysis, which views technology as an instrument of dominance by the advantaged class over others. Within the field of education, this historical view led to a belief that technology could be a means towards the end of oppressing students – with *Technics and Civilization* (Mumford, 1934) as one of the first pieces of literature to make this analysis. By the 1960s, Mumford was joined by other critics – such as Landgon Winner (1977), Albert Borgmann (1984), and Don Ihde (1979) – responding to the changing political climate of the day. During this period, Marcuse (1964) and Foucault (1977) were also influential critics of the role of technological determinism and the formation of modern hegemonies (Feenberg, 1999).

More recently, some educators such as David Noble have been labelled as technological determinists. Noble and colleagues (Noble, 1991; Noble, Shneiderman, Herman, Agre, & Denning, 1998) have written extensively on the relationships between distance-delivered e-learning and de-professionalization of the academy. These scholars are concerned about the erosion of academic freedom, and thus they are aggressive critics arguing that the expansion of distance-delivered e-learning as a leading-edge movement to commercialize education will work to de-professionalize faculty members and erode academic freedom (e.g., Noble, 1998). Other prominent scholars who have on occasion fallen into this category include Erich Fromm (1968), Marshall McLuhan (1962), Neil Postman (1993), Hubert Dreyfus (2001), and Jean Baudrillard (1983). These scholars question modern technologies and many condemn technology for disseminating an onslaught of incoherent and fragmented trivialities to the world at the expense of engagement, reflectivity, and depth. They also argue that modern technologies and growing neo-liberalism are creating a rising capitalistic climate that includes political-economic interests such as commodification, commercialization, and corporatization of education.

The assumption underpinning these views is that technology determines our uses and impacts society – in a negative way. Although not often given the label of technological determinist, scholars who view technology as influencing our education systems in positive ways also hold the same assumption that technology determines our uses and impacts society, but in a beneficial way. In the area of e-learning, for example, Garrison and Anderson (2003) assert that educational technologies can transform the learning experiences in positive ways, resulting in increasing the quality of learning experiences.

Other positive views presented in the literature include the opinion that e-learning communication tools facilitate the development of argument formation capabilities, increased written communication skills complex problem-solving abilities, and opportunities for reflective deliberation (Abrami & Bures, 1996; Garrison, Anderson, & Archer, 2001; Hawkes, 2001; Winkelmann, 1995). The rationale underpinning these beliefs rests on the assumption that the technologies (e.g., asynchronous text-based Internet tools which have a time lag when communicating) provide the inherent potential to effectively facilitate higher levels of learning. For example, Lapadat (2002) argues that with asynchronous text-based Internet technology, learners have the means to compose their ideas and thoughts into a written form of communication. This, according to Garrison and Anderson, provides learners with the ability to critically reflect on their views, which is necessary for higher-ordered learning. In regard to educational systems, Archer, Garrison, and Anderson (1999) have written about disruptive technologies, arguing that technologies are a catalyst of change, resulting in the need for educators and institutions to adapt and/or transform. The assumption here is that the effects of technical change are inevitable and unquestioned.

As these examples illustrate, both advocates and opponents of e-learning believe that e-learning technologies determine the uses and the agents. In less bi-polar positions, this orientation also asserts that the effect of new media (e.g., social software) has influenced post-modern ideas. Poster (1997), for example, puts forth the notion that the Internet has instantiated new forms of interaction and power relations between users, resulting in significant social impacts. Nguyen and Alexander (1996) assert further that the Internet has produced new realities in our everyday lives. Technological determinism is also consistent with much of the existing technology theory, perhaps most notably, McLuhan's (1964) "the medium is the message" slogan, as well as the idea of the world now being a global village. These views are representative of the cultural products of mass media and agents of socialization and political indoctrination, and correspond with the social impact of technology literature that emphasizes the transformations caused by technologies acting on society.

Theorists of post-industrialism and post-modernity also view technology as a causal agent, having a central role in social change (Dahlberg, 2004). Lyotard (1984) and Baudrillard (1983) likewise argue that technology is instrumental in the development of the post-modern condition. Within the field of education, de Castell, Bryson, and Jenson (2002) express concerns that e-learning technologies result in yet another form of cultural colonization, resulting from curricular development designed to mimic the cognitive styles of recognized experts. An understanding of the impact of technology on educational systems is important for educators to know and recognize. As with the other technological orientations, however, an overemphasis on the impact of technology on the learning process can lead to problems when there is a lack of recognition of the social and user embeddedness of technology. Without question, there is a significant effect of e-learning technology on modern education, including, as Chandler (1996) notes, the numerous unanticipated consequences – which should not be underestimated. Likewise, Winner (1977) asserts that technological artefacts may embody affirmation, but may also become a betrayal. There is little doubt that education is increasingly being encompassed by e-learning technologies and that they increasingly shape the way we think and learn. Nevertheless, this impact is not as independent of human control as the techno-utopian, techno-cynic, techno-zealot, and techno-structuralism theorists indicate (Boshier & Onn, 2000). Accounts from such theorists either reify reductive consequences or claim too much for what is increasingly a shift in the growing use of e-learning technology in education.

This one-dimensional view of technology suffers similar logistical problems with the uses- and social-determinist orientations. Educators positioning themselves from a one-dimensional view of the impact of technology perceive the properties of a particular technology as having the ability to predetermine educational outcomes. Little, if any, attention is given to the effects of educational, social, and historical forces that have shaped both educational systems and educational technologies.

## PHILOSOPHIES OF TEACHING

The following section highlights the philosophical orientations or frameworks that are most often used by educators in today's society. It is based on the writings of Elias and Merriam (1980), Zinn (1990), Draper (1993), and Brameld (1969). At the end of the descriptions for each teaching orientation is a description of the philosophy of technology most closely associated with it.

### Liberal/Perennial

This orientation is the oldest and most enduring philosophy of education. The earliest efforts of education in the Western world were developed under the influence of this philosophy. The primary aims of educators holding this

orientation are twofold: (1) to search for truth, and (2) to develop good and moral people. As such, an educated person should possess these components: rational, intellectual, and evolving wisdom; moral values; a spiritual or religious dimension; and an aesthetic sense. Its historical origins are derived from the classical Greek philosophers Socrates, Plato, and Aristotle. Some contemporary philosophers who espouse this viewpoint include Mortimer Adler (1937), Robert Hutchins (1953; 1968), Jacques Maritain (1943), and Mark Van Doren (1943).

Instructional methods used in this position lend themselves to the facilitation of rigorous intellectual training that begins with knowledge of grammar and rhetoric; extends to the natural sciences, history, and literature; and ends with a study of logic and philosophy. Students are encouraged to question all assumptions – which is in keeping with the search for truth. The person who “knows the truth” will also “do the truth.” The lecture method is recognized as an efficient instructional strategy when well organized and followed with dialogue. Through dialogue, students clarify the real meaning of concepts and can thus build syntheses of knowledge. Intuition and inner contemplation are also encouraged.

In this view, the teaching focus is primarily on the content of education with an emphasis on the art of investigation, criticism, and communication, through an intimate acquaintance with the Great Books (e.g., Plato, Aristotle, Aurelius, Augustine, Bacon, Descartes, Milton, Marx), philosophy, and religion. The humanities are believed to be superior to science. The teacher has a prominent role in dissemination of the content and the student is a receptacle of this information. An education system following this orientation aims to create leaders and responsible citizens. Though information and knowledge are necessary, it is only in the possession of wisdom that one truly becomes educated. The learning process moves from information to knowledge to wisdom.

Critics of the liberal orientation have argued that this form of education does not lend itself much to statements, analyses, and evaluations; has a class and elitist bias; and does not address vocational education and life-related subjects. In addition, knowledge of past civilization and culture does not itself liberate persons.

### Role of Technology

Aligning most closely with technological determinism, the liberal views on demanding intellectual training would not normally involve the use of technology. For example, automated courses (quizzes, exams) with modularized units, tutorials and/or simulations, in and of themselves, cannot achieve the aim of a liberal education. As the ultimate aim and essence of education is in the development of character, a standardized curriculum typically associated with online courses and economies of scale is viewed as robbing the student of an intellectual experience. While some existing social software (e.g., synchronous audio, Internet-based tools) might be viewed somewhat more positively by educators of this orientation, the current widespread use of textual communication technologies would be in conflict with the spirit of the aims and objectives of this orientation, and with the focus on rigorous dialogic encounters.

The position that e-learning can be a flexible and convenient alternative serving the needs of the institutions' clients (students) would also be problematic for educators of the liberal orientation. Indeed, liberal educators believe that learning should not be convenient and students should not be viewed as clients or customers. Rather, students should submit themselves to the rigours of intellectual development and be stretched intellectually as far as they can go. Convenience and flexibility, in ways that meet the needs of the learners, would be at odds with this orientation. In a general sense, e-learning technology is viewed by educators closely associated with the liberal orientation as interfering with their aims and objectives.

### Progressive

The aim of the progressive orientation is personal growth, maintenance, and promotion of a better society. The preferred methods of instruction include the experimental, problem-solving, and situation approaches to learning.



This includes the organization of curriculum around problems and situations which relate to the experiences of the students. The focus of the learning activities is always toward movement of democratic cooperation and personal enlightenment. The chief exponent of pragmatism and progressive thought, especially as it relates to education, is John Dewey (1910; 1916; 1938) and William James (1909). Elements of progressive thought are found in the writings of all major theorists in the field of education, including Malcolm Knowles (1970), Cyril Houle (1972), Eduard Lindeman (1956), and Paul Bergevin (1967).

Education itself is viewed as both practical and pragmatic; utilitarian educators of this orientation strive to maintain the standards of competence, knowledge, wisdom, and skill. Accordingly, a good society requires these standards. Educators also see themselves as having a role in social reform and social reconstruction. Specifically, education should be aimed at improving the individual's life in society; improving individuals through education leads to a better society. Students and society cannot be separated, as the student's interests, needs, problems, and ambitions are products of their environment.

The teacher/student relationship is best characterized as a partnership. Learning is something that students do for themselves. Education involves experience, which is reflected and acted upon by the student. The result is knowledge that is inseparable from ever-changing experiences. Learning also involves liberating the learner for the potential improvement of society and culture. In particular, learning is not enough; sooner or later, students must act as a consequence of their learning. The teacher's role is to organize, stimulate, instigate, and evaluate the highly complex process of education. This can be effectively achieved by being a helper, consultant, and/or encourager. When the teacher provides a setting that is conducive to this form of learning, the teacher also becomes a learner.

The main criticism of the progressive orientation is the tendency to place too much influence on the power of education to bring about social change and to replace the fixity of ideas with the fixity of the problems. Another criticism has been that, in their view, the student should be placed at the centre of the learning process, failing to give sufficient attention to the role of the teacher and to the importance of the subject matter.

### Role of Technology

Aligning most closely with uses determinism, progressives view certain educational technologies as being well suited to the learning process. For example, using the conferencing options in course management systems (e.g., *WebCT*®, *Blackboard*®, *Lotus Notes*®), learning activities can effectively be designed as an interactive partnership between and among the teacher and students. Perhaps more important is the ability of asynchronous communication technologies to give students equal opportunities to contribute. When facilitated effectively by the teacher, this can result in a democratic learning environment for all students. Further, given that the teacher's role is to organize, stimulate, instigate, and evaluate the highly complex process of education, as well as to be a helper, consultant, and/or encourager, e-learning technologies can be very effective at facilitating this kind of environment because they effectively facilitate a learner-centred environment.

The ultimate goal of the behaviourist orientation is to bring about observable changes in behaviour. Methods of instruction begin with stated learning objectives, accompanied by the inclusion of rewards and punishments toward and away from the stated behavioural objectives. Examples of well-known methods include mastery learning, personalized systems of instruction, individually guided instruction, and individually prescribed instruction. The focus of the learning is on the content, with a subject-centred approach. Early behaviourists include Edward Thorndike (1932) and John Watson (1914), with the most prominent behaviourist philosophy originating from B. F. Skinner (1938). A more contemporary behaviourist is Ralph Tyler (1949), who is well known for the introduction of needs assessments in curriculum and instruction.

Behaviourists tend to view most of societies' problems arising from the behaviour of people living in them. The solution to creating a better society is to control human behaviour. Behaviourists believe that the purpose of education is to change the behaviour of people so they can work with each other to design and build a society that minimizes suffering and maximizes the chances of survival. The role of the teacher is to design an environment that elicits desired behaviour toward meeting these goals and to extinguish behaviour that is not desirable. The teacher is a contingency manager or an environmental controller. The students' role is active rather than passive, and it is essential that students act, so that their behaviour can be reinforced. As such, responsibility lies primarily with the student. According to behaviourists, students have learned something if there is a change in behaviour and if their response occurs again under similar circumstances. Learning how to learn is also an important skill, needed if one is to adapt successfully to a changing environment.

There have been many criticisms of the behaviourist orientation. Perhaps the most important criticism revolves around the stated behavioural objectives that predetermine the end product of a learning experience. This activity has been attacked for not accounting for other kinds of learning, such as incidental learning; dehumanising students and their learning; lacking in concern for the student; inhibiting creativity; and, fragmenting the curriculum into bits and pieces while overlooking the whole.

### Role of Technology

Aligning most closely with technological determinism, the majority of behaviourists believe that the use of e-learning technologies, in all forms, results in effective and efficient learning. There are many positive transformations that occur through the use of technology, with the *sine quo non* being computer-based tutorials and simulations. Standardized course management systems (e.g., *WebCT®*, *Blackboard®*, *Moodle*) and the integrated use of learning objects into the learning process can also benefit educational institutions in terms of providing efficient and effective learning.

Moreover, the use of course management systems can regulate teacher activities. As such, the teaching can be controlled to student assessment and grading administration. Course management tools can track the students' activities and provide immediate feedback via the assessment tools. It is possible, then, to track exactly what the students have learned through observable changes in behaviour. Overall, behaviourists tend to view e-learning technologies as more reliable, accurate, faster, and cost-effective than humans. Social interaction can be expensive, and when the learning is content-centred, interaction is generally not an important function within the learning events. E-learning courses that focus on the content and are presented in a modularized format, with stated learning objectives and end-of-unit assessment tools to provide positive or negative feedback, are an effective and efficient way to teach students.

### Humanist

The primary aim of the humanist orientation is to support individual growth and self-actualization. Key constructs emphasized in this approach are freedom and autonomy, trust, active cooperation and participation, and self-directed learning. The philosophical roots of this orientation are found in such writers as Martin Heidegger (1977), Jean-Paul Sartre (1949), and Albert Camus (1940; 1942; 1951). The Third Force psychologists who have been equally responsible for the development of this approach include Abraham Maslow (1976), Carl Rogers (1967), Malcolm Knowles (1970), and Erich Fromm (1968).

Humanists use instructional methods such as group dynamics, group relations training, group processes, sensitivity workshops, encounter groups, values clarification workshops, transactional analysis, human potential workshops, and self-directed learning to achieve their aims. Group activity is the favoured technique, but

experimentation and discovery methods are also encouraged. Decisions made by the teacher about curriculum are viewed as interfering with individual students' ability to identify their own learning needs. The focus on the learning activities is always on the individual student's growth and development rather than the content, and on affective rather than cognitive aspects of education. This focus, in turn, assists in the development of responsible selfhood; fostering persons who are open to change and continuous learning; and the striving for the self-actualization of fully-functioning individuals. As such, the whole focus of education is on the individual learner rather than a body of information.

The role of the teacher is that of facilitator, helper, and partner in the learning process. The teacher does not simply provide information; he or she must create the conditions within which learning can take place. The teacher should facilitate the process of the students to be self-directed, by serving as a resource person and by encouraging students to set their own goals. The responsibility for learning therefore rests with the student. Students are free to learn what and how they want. The act of learning is a personal activity that involves intrinsic motivation, self-concept, perception, and self-evaluation. Indeed, according to humanists, self-evaluation is the only meaningful test of whether learning has taken place.

As with the other philosophical orientations, there have been numerous criticisms of the humanist orientation. For example, at times self-directed learning can be impossible or undesirable. It can also be difficult to conduct discussion groups when one considers time constraints, organizational expectations, and group size composed of many diverse learning environments. Perhaps most importantly, this orientation lacks administrative accountability in terms of what is going to be taught, what is actually taught, and what has been learned.

### Role of Technology

Aligning themselves most closely with uses determinism, humanists typically would agree that e-learning technologies can, under certain circumstances, serve an important role in so far as providers of the learning activities can provide flexibility, convenience, and meet individual student needs with just-in-time learning. Specifically, uses of technology can play a critical role in providing flexible and open access to the growing needs of individual students.

For the humanists, learning is viewed as a highly personal endeavour and, as such, intrinsic motivation, self-concept, self-perception self-evaluation, and discovery are important learning and thinking skills. Many e-learning technologies, especially social software, can provide learners with opportunities to facilitate their learning needs. Further, online classrooms make it difficult, if not impossible, for the role of the teacher to be anything but a facilitator, or a guide on the side. It should be noted that some humanists have objected to arbitrary decisions by educational institutions and/or instructors about the kinds and uses of technologies. These arbitrary decisions are viewed by most humanists as a violation of students' abilities to identify their own learning needs, which includes their choices about which technologies to use or not use. Few humanists, however, would disagree with the opinion that new group communication tools can play an important role in facilitating access for students to participate in group discussions. Group relations are an extremely important component in facilitating the learning process, and under certain circumstances, many humanists would argue that online discussions can be effective, perhaps even more effective than face-to-face discussions, due to their ability to meet the diversity of student needs.

### Radical

The overarching aim of the radical perspective is to invoke change in the political, economic, and social order in society via the intersection of education and political action. Radical educators of the past include George Counts

(1932), Theodore Brameld (1969), Jonathan Kozol (1972), John Holt (1967), Paul Goodman (1994), and Ivan Illich (1979). Contemporary prominent educators of this philosophic position include Paulo Freire (1973) and Jack Mezirow (1991).

Preferred instructional methods are dialogic encounters that lead to praxis. These instructional methods include problem posing and problem identification, through dialogue based on respect, communication, and solidarity. Collective dialogue, ideal speech, and critical questioning in a risk-free environment should be offered in place of traditional lecture and dissemination of information. Dialogic and problem-posing encounters will involve students engaged in questioning the basic values, structure, and practices of society.

Many radicals view traditional lecturing as offending the freedom and autonomy of the student. Indeed, these practices are viewed as a form of violence, because imposing facts and values submerges the consciousness of the student, perpetuates the evils of an oppressive society, dehumanizes, and stifles individual freedom. Education is viewed as value-laden and never neutral, because it includes the transmission and reification of attitudes and development of character. As such, the role of the teacher is to raise students' consciousness of the social and political contradictions in their culture. Radicals view their role as a catalyst to increasing the learners' objective reality or to eliciting distorted assumptions. The teacher is also a learner with equal status, but the teacher will have expert knowledge. Information, however, must be imparted in a dialogic manner with the student. In order for action to be authentic, participants must be free to create the curriculum along with the teacher. Students are viewed as unfinished and, as such, are free and autonomous learners.

Through these activities, students become enablers of radical social change. Radicals perceive education as being closely connected with our social, political, and economic understanding of cultures, and with the development of methods to bring people to an awareness of responsible social action. Learning, then, must include the development of insight into the state of the students' oppression, achieved only through critical reflection. This kind of learning can lead to action, which may significantly transform aspects of one's life.

The main criticism of the radical orientation is that the methods used to achieve perspective transformation are not doable in most educational environments. Mandatory grading in most educational systems, for example, diminishes the prospect of a risk-free environment. Another difficulty with this orientation is that knowledge is viewed as power, and power is seen as something political. Thus, when the teacher provides information, the teacher will then be exercising power and control over the student. The premise, then, that education can be neutral and non-value-laden with a knowledgeable teacher, becomes a paradox.

### Role of Technology

Radicals align themselves most closely with social determinism. The biggest problem associated with the use of e-learning for radicals is not so much the technologies, per se, as the fact that most educational institutions use technologies that are owned by large corporations. Commercialized products, such as *WebCT*®, *Blackboard*®, *Lotus Notes*®, and so on, are viewed as enforcing a corporate communication paradigm onto the learning process. For example, a risk-free and trusting environment is not achievable with corporate technologies that have surveillance features. Alternatively, open-source technologies (e.g., *Moodle*) would not be problematic for most radical educators.

### Analytical

The primary aim of the analytical orientation is the development of rationality, which is assisted by the fearless transmission of educationally worthwhile knowledge (e.g., truth that is morally, socially, and politically neutral). Philosophers of education in this traditional view include Israel Scheffler (1960), R. S. Peters (1967), and Thomas Green (1971).

Guided and directed by the teacher, dialogue through class discussion is considered the ideal instructional method. It is important that the dialogue include communication of information that is educationally significant. Specifically, analytical educators focus on content that is worthwhile, while emphasizing the need for clarifying concepts, arguments, and policy statements. The result is to bring about deepened awareness, in meaningful touch with reality; this is accomplished through the provision of worthwhile knowledge. Education is never complete and lifelong education is a necessity for full human development.

Educators from the analytical orientation see the need for teachers to identify what the students do not know and then to determine their aims and objectives. The primary role of teachers is to make choices about the things that are educationally worthwhile. Teachers, then, are essential for introducing learners to knowledge beyond themselves; learners are subordinate to the teachers. Analyticals believe that students need to temporarily give up their freedom and subject themselves to being guided, criticized, and tested according to the standards of a discipline.

Analyticals also believe that society and education should not be linked to each other. The problem inherent in linking educational aims to social values becomes particularly acute in a multicultural or pluralistic society where there are differences of opinion as to what ends are most desirable. Based on established scientific truths, education should involve the fearless transmission of neutral knowledge, guided by the liberal studies. There is, however, a cognitive element and a need for the understanding of principles. Specifically, learning is cognitively connected with other areas of learning so that each area is understood in relation to other areas, and what is learned should be usable.

Many critics of this philosophical orientation raise the troubling question of whether any programmatic decision can be neutral or value-free. Taking a neutral position on social questions, for example, is itself a contradiction.

### Role of Technology

Aligning most closely with uses determinism, analytical educators view e-learning technologies as serving the learning process well under certain circumstances. For example, lectures can be downloaded to web pages, and follow-up dialogue can be facilitated, effectively moderated, and directed by the teacher, using group communication tools.

## KNOWING YOUR TEACHING AND TECHNOLOGY PHILOSOPHIES IN PRACTICE: AVOIDING MINDLESS ACTIVISM

Reflecting on and becoming aware of our philosophical orientations is important; it provides a basis for how we choose and use e-learning technologies. Education effects change, whether that change is the ability to engage in rational thought, personal growth, or to bring about political and social change (Zinn, 1990). The desired changes are based on what we believe should happen through education. This, in turn, will be reflected in how we choose and use e-learning technologies.

When we are aware of our philosophical orientation, it is then possible to make informed decisions about choosing and using e-learning technology. Without knowing our philosophical orientation, other strategies are used (Zinn, 1990). Often swept up by unbridled – but uninformed – enthusiasm by technological advocates, many decisions by educators are based on following the latest trend. Unfortunately, these strategies often lead to incongruence and inconsistency in action between and among instructors, administrators, and students, and the

ensuing disagreements that revolve around the means rather than the ends of education. Moreover, when there is incongruence between beliefs and actions, the promises of what e-learning technologies can provide will never be delivered. Unless we can systematically identify what we value in education, we cannot justify the choices we make with e-learning technologies, or deliver the promises. For these reasons, it is important to take time out from our *doing* and ask *why* it is important. “Thoughtful practitioners know not only what they do, but why they are to do it. Experience combined with reflection leads to purposeful and informed action” (Darkenwalk & Merriam, 1982, p. 37)

## REFERENCES

- Abrami, P. C., & Bures, E. M. (1996). Computer-supported collaborative learning and distance education. *American Journal of Distance Education*, 10(2), 37–42.
- Adler, M. (1937). *The revolution to education*. Chicago: University of Chicago Press.
- Archer, W., Garrison, R., & Anderson, T. (1999). Adopting disruptive technologies in traditional universities: Continuing education as an incubator for innovation. *Canadian Journal of University Continuing Education*, 25(1), 13–30.
- Argyle, K. (1996). Life after death. In R. Shields (Ed.), *Cultures of Internet: Virtual spaces, real histories, living bodies* (pp. 58–69). London: Sage.
- Bates, A. W. (2005). *Technology, e-learning and distance education* (2nd ed). New York: Routledge Falmer Studies in Distance Education.
- Baudrillard, J. (1983). *In the shadow of the silent majorities*. New York: Semiotext(e).
- Bell, D. (1973). *The coming of post-industrial society: A venture in social forecasting*. New York: Basic Books.
- Bergevin, P. (1967). *A philosophy of adult education*. New York: Seabury.
- Borgman, A. (1984). *Technology and the character of contemporary life*. Chicago: University of Chicago Press.
- Boshier, R., & Mun Onn, C. (2000). Discursive constructions of web learning and education. *Journal Distance of Distance Education*, 15(2). Retrieved September 27, 2007, from <http://cade.athabascau.ca/vol15.2/boshieretal.html>
- Brameld, T. (1969). *Ends and means in education*. Westport, CT: Greenwood.
- Brent, D. (2001). *Teaching as performance in the electronic classroom*. Retrieved September 27, 2007 from [http://www.quasar.ualberta.ca/cpin/cpinfolder/papers/Doug\\_Brent.htm](http://www.quasar.ualberta.ca/cpin/cpinfolder/papers/Doug_Brent.htm)

Camus, A. (1940). *The myth of Sisyphus*. Harmondsworth: Penguin. Camus, A. (1942). *The stranger*. London: Vintage Books.

Camus, A. (1951). *The rebel*. Harmondsworth: Penguin.

Castells, M. (1999). *The information age: Economy, society and culture* (Vol. I, II and III). Cambridge, MA: Blackwell.

Chandler, D. (1996, February). Engagement with media: Shaping and being shaped. *Computer-Mediated Communication Magazine*. Retrieved September 27, 2007 from <http://users.aber.ac.uk/dgc/determ.html>

Clark, R. E. (1983). Reconsidering research on learning from media. *Review of Educational Research*, 53(4), 445–459.

Clark, R. E. (1985). Confounding in educational computing research. *Journal of Educational Computing Research*, 1(2), 445–460.

Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development*, 42(2), 21–30.

Counts, G. (1932). *Dare the school build a new social order*. New York: John Day.

Dahlberg, L. (2004). Internet research tracings: Towards non-reductionist methodology. *Journal of Computer Mediated Communication*, 7(1). Retrieved September 27, 2007 from <http://jcmc.indiana.edu/vol7/issue1/dahlberg.html>

Daniel, J. (2000, July 18). The university of the future and the future of universities. Keynote address from the Improving University Learning and Teaching 25th International Conference. Retrieved September 27, 2007, from <http://www.open.ac.uk/johndanielspeeches/FrankfurtJuly2000.htm>

Darkenwald, G., & Merriam, S. (1982). *Adult education: Foundations of practice*. Cambridge: Harper & Row.

de Castell, S., Bryson, S., & Jenson, J. (2002). Object lessons: Towards an educational theory of technology. *First Monday*, 7(1). Retrieved September 27, 2007 at [http://www.firstmonday.org/issues/issue7\\_1/castell/](http://www.firstmonday.org/issues/issue7_1/castell/)

Dewey, J. (1910). *How we think*. Chicago: University of Chicago Press. Dewey, J. (1916). *Democracy and education*. New York: Macmillan. Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Draper, J. A. (1993). Valuing what we do as practitioners. In T. Barer-Stein and J. A. Draper (Eds.), *The craft of teaching adults* (pp. 55–67). Toronto, ON: Culture Concepts.

Dreyfus, H. (2001). *On the Internet: Thinking in action*. New York: Routledge.

Drucker, P. (1997). Interview. *Forbes*, March 1997.

- Dubrovsky, V., Kiesler, S., & Sethna, B. (1991). The equalization phenomena: Status effects in computer-mediated and face-to-face decision-making groups. *Human-Computer Interaction*, 6(2), 119–146.
- Ebersole, S. (2000). Uses and gratifications of the web among students. *Journal of Computer-Mediated Communication*, 6(1). Retrieved September 27, 2007 from <http://www.ascusc.org/jcmc/vol6/issue1/ebersole.html>
- Elias, J. L., & Merriam, S. (1980). *Philosophical foundations of adult education*. Malabar, FL: Robert E. Krieger.
- Feenberg, A. (1999). *Questioning technology*. New York: Routledge. Fiske, J. (1987). *Television culture*. London: Routledge
- Foucault, M. (1977). *Discipline and punish*. A. Sheridan (Trans.). New York: Pantheon.
- Freire, P. (1973). *Education for critical consciousness*. New York: Seabury. Fromm, E. (1968). *The revolution of hope, toward a humanized technology*. New York: Harper & Row.
- Garnham, N. (1990). *Capitalism and communication: Global culture and the economics of information*. London: Sage.
- Garramone, G. M., Harris, A. C., & Anderson, R. (1986). Uses of political computer bulletin boards. *Journal of Broadcasting & Electronic Media*, 30(3), 325–339.
- Garrison, D. R. (2002). Cognitive presence for effective online learning: The role of reflective inquiry, self-directed learning and metacognition. Invited paper presented to the Sloan Consortium Asynchronous Learning Network Invitational Workshop, Lake George, NY, September. Retrieved December 26, 2005, from [communitiesofinquiry.com/documents/SLOAN%20CP%20Chapter%202003.doc](http://communitiesofinquiry.com/documents/SLOAN%20CP%20Chapter%202003.doc)
- Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st Century: A framework for research and practice*. London: Routledge Falmer. Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7–23.
- Gates, B. (1995). *The road ahead*. New York: Viking.
- Golding, P., & Murdock, G. (Eds.) (1997). *The political economy of the media (Vol. I and II)*. Cheltenham, UK: Edward Elger.
- Golding, P., & Murdock, G. (2000). Culture, communication, and political economy. In J. Curran & M. Gurevitch (Eds.), *Mass media and society* (3rd ed., pp. 71–92). London: Edward Arnold.
- Goodman, P. (1994). *Crazy hope and finite experience: Final essays of Paul*



Goodman. Taylor Stoehr (Ed.). San Francisco: Jossey-Bass.

Green, T. F. (1971). *The activities of teaching*. New York: McGraw-Hill. Habermas, J. (1970). *Toward a rational society: Student protest, science, and politics*. Boston: Beacon.

Harrison, T. M., & Stephen, T. (1999). Researching and creating community networks. In S. Jones (Ed.), *Doing internet research: Critical issues and methods for examining the Net* (pp. 221–241). Thousand Oaks, CA: Sage.

Hawkes, M. (2001). Variables of interest in exploring the reflective outcomes of network-based communication. *Journal of Research on Computing in Education*, 33(3), 299–315.

Heidegger, M. (1977). *The question concerning technology*. David Krell (Trans.). New York: Harper & Row.

Holt, J. (1967). *How children learn*. New York: Pitman.

Houle, C. (1972). *The design of education*. San Francisco: Jossey-Bass. Hutchins, R. (1953). *The conflict in education in a democratic society*. New York: Harper & Row.

Hutchins, R. (1968). *The higher learning in America*. New Haven: Yale University Press.

Ihde, D. (1979). *Technics and praxis*. London: D. Reil. Illich, I. (1979). *Deschooling society*. New York: Harper & Row.

James, W. (1909). *The meaning of truth: A sequel to Pragmatism*. New York: Appleton.

Jonassen, D. H. (1996). *Computers in the classroom: Mindtools for critical thinking*. Englewood Cliffs, NJ: Prentice Hall.

Kanuka, H., & Kelland, J. (in press). A deliberative inquiry with experts in e-learning: Contentions in need of further research.

Katz, J. E., & Rice, R. E. (2002). *Social consequences of Internet use: Access, involvement, and interaction*. Cambridge, MA: MIT Press.

Knowles, M. (1970). *The modern practice of adult education*. New York: Association Press.

Kozol, J. (1972). *Free schools*. Boston: Houghton Mifflin.

Lacroix, J. G., & Tremblay, G. (1997). The 'Information Society' and cultural industries theory. *Current Sociology*, 45(4), 1–153.

- Lapadat, J. C. (2002). Written interaction: A key component in online learning. *Journal of Computer Mediated Communication*, 7(4). Retrieved April 8, 2004, from <http://www.ascusc.org/jcmc/vol7/issue4/lapadat.html>
- Lindeman, E. (1956). *The democratic man: Selected writings of Eduard Lindeman*. Boston: Beacon.
- Lyotard, J.-F. (1984). *The postmodern condition: A report on knowledge*. Manchester: Manchester University Press.
- Marcuse, H. (1941). Some implications of modern technology. *Studies in Philosophy and Social Science*, 9, 414–39.
- Marcuse, H. (1964). *One-dimensional man*. Boston: Beacon.
- Maritain, J. (1943). *Education at the crossroads*. New Haven: Yale University Press.
- Marx, L. (1997). Technology: The emergence of a hazardous concept. *Social Research*, 64(3), 965–988.
- Maslow, A. (1976). Education and peak experience. In C. D. Schlosser (Ed.), *The person in education: A humanistic approach*. New York: Macmillan.
- McLuhan, M. (1964). *Understanding media: The extensions of man*. New York: McGraw-Hill.
- McLuhan, M., & Fiore, Q. (1962). *The medium is the message*. New York: Bantam.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.
- Morley, D. (1989). Changing paradigms in audience studies. In E. Seiter, H. Borchers, G. Kreutzner & E. M. Warth (Eds.), *Remote control: Television, audiences, and cultural power* (pp. 16–43). New York: Routledge.
- Mosco, V. (1996). *The political economy of communication*. London: Sage.
- Mumford, L. (1934). *Technics and civilization*. New York: Harcourt, Brace & Company.
- Nguyen, D. T., & Alexander, J. (1996). The coming of cyberspacetime and the end of the polity. In R. Shields (Ed.), *Cultures of Internet: Virtual spaces. Real histories, living bodies* (pp. 99–124). London: Sage.
- Noble, D. (1991). *The classroom arsenal: Military research, information technology and public education*. New York: Falmer.
- Noble, D. (1998). Digital diploma mills: The automation of higher education. *First Monday*, 3(1). Retrieved September 23, 2007 from [http://www.firstmonday.org/issues/issue3\\_1/noble/](http://www.firstmonday.org/issues/issue3_1/noble/)

- Noble, D., Shneiderman, B., Herman, R., Agre, P., & Denning, P. J. (1998). Technology in education: The fight for the future. *Educom Review*, 33(3). Retrieved on July 26, 2005, from <http://www.educause.edu/pub/er/review/reviewArticles/33322.html>
- Peters, R. S. (1967). What is an educational process? In R. S. Peters (Ed.), *The concept of education*. Boston: Routledge & Kegan Paul.
- Pool, I. D. S. (1983). *Technologies of freedom*. Cambridge, MA: Harvard University Press.
- Poster, M. (1997). Cyberdemocracy: Internet and the public sphere. In D. Porter (Ed.), *Internet culture* (pp. 201–217). New York: Routledge.
- Postman, N. (1993). *Technopoly: The surrender of culture to technology*. New York: Vintage Books.
- Rogers, C. R. (1967). The process of the basic encounter group. In J. F. T. Bugental (Ed.), *Challenges of humanistic psychology*. New York: McGraw-Hill.
- Sartre, J. P. (1949). *Nausea*. Lloyd Alexander (Trans.). London: Purnell & Sons.
- Scheffler, I. (1960). *The language of education*. Springfield, IL: Charles Thomas.
- Schiller, D. (1999). *Digital capitalism: Networking the global market system*. Cambridge, MA: MIT Press.
- Skinner, B. F. (1938). *The behaviour of organisms*. Cambridge, MA: B. F. Skinner Foundation.
- Spears, R., & Lea, M. (1994). Panacea or panopticon? The hidden power in computer-mediated communication. *Communication Research*, 21(4), 160–176.
- Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communications. *Management Science*, 32, 1492–1512.
- Sudweeks, F., McLaughlin, M., & Rafaeli, S. (Eds.) (1998). *Network and netplay: Virtual groups in the Internet*. Cambridge, MA: MIT.
- Thorndike, E. (1932). *The fundamentals of learning*. New York: Teachers College, Columbia University.
- Toffler, A., & Toffler, H. (1994). *Creating a new civilization: The politics of the third wave*. Atlanta: Turner Pub.

- Twigg, C.A. (2003). Improving learning and reducing costs: New models for online learning. *EDUCAUSE Review*, 38(5), 29–38.
- Tyler, R. (1949). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.
- Van Doren, M. (1943). *Liberal education*. Boston: Beacon.
- Watson, J. B. (1914). *Behavior: An introduction to comparative psychology*. New York: Norton
- Welchman, A. (1997). Funking up the cyborgs. *Theory, Culture & Society*, 14(4), 155–162.
- Winkelmann, C. L. (1995). Electronic literacy, critical pedagogy, and collaboration: A case for cyborg writing. *Computers and the Humanities*, 29(6), 431–448.
- Winner, L. (1977). *Autonomous Technology: Technics-out-of-control as a theme in political thought*. Cambridge, MA: MIT Press.
- Woolgar, S. (1991a). Configuring the user: The case of usability trials. In J. Law (Ed.), *A sociology of monsters: Essays on power, technology and domination* (pp. 58–97). London: Routledge.
- Woolgar, S. (1991b). The turn of technology in social studies of science. *Science, Technology, & Human Values*, 16(1), 20–50.
- Woolgar, S. (1996). Technologies as cultural artefacts. In W. H. Dutton (Ed.), *Information and communications technologies: Visions and realities* (pp. 87–101). Oxford: Oxford University Press.
- Woolgar, S. (Ed.) (2002). *Virtual society? Technology, cyberbole, reality*. Oxford: Oxford University Press.
- Zinn, L. M. (1990). Identifying your philosophical orientation. In M. Galbraith (Ed.), *Adult Learning Methods* (pp. 39–77). Malabar, FL: Krieger.

#### ABOUT THE AUTHOR

At time of writing, Heather Kanuka (heather.kanuka@ualberta.ca) was a Canada Research Chair and associate professor in the Centre for Distance Education at Athabasca University. Dr. Kanuka is currently academic director of the University Teaching Services unit at the University of Alberta, Edmonton, Canada. Dr. Kanuka's research interests are in faculty development, higher education, and the effects of mediated learning.

