19 Key Essays on
How Internet is Changing our Lives

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The Internet and Education

Introduction

In many ways, it is difficult to discuss any aspect of contemporary society without considering the Internet. Many people's lives are saturated so thoroughly with digital technology that the once obvious distinction between either being *online* or *offline* now fails to do justice to a situation where the Internet is implicitly *always on*. Indeed, it is often observed that younger generations are unable to talk about *the Internet* as a discrete entity. Instead, online practices have been part of young people's lives since birth and, much like oxygen, water, or electricity, are assumed to be a basic condition of modern life. As Donald Tapscott (2009, 20) put it, "to them, technology is like the air." Thus, in many ways, talking about *the Internet* and education simply means talking about contemporary *education*. The Internet is already an integral element of education in (over)developed nations, and we can be certain that its worldwide educational significance will continue to increase throughout this decade.

That said, the educational impact of the Internet is not straightforward. At a rudimentary level, it is important to remember that well over half the world's population has no direct experience of using *the Internet* at all. While this is likely to change with the global expansion of mobile telephony, the issue of unequal access to the most enabling and empowering forms of Internet use remains a major concern. Moreover—as the continued dominance of *traditional* forms of classroom instruction and paper-and-pencil examinations suggest—the educational changes being experienced in the Internet age are complex and often compromised. In addressing the topic of "the Internet and education" we therefore need to proceed with caution. As such, this chapter will consider the following questions:

- What are the potential implications of the Internet for education and learning?

- What dominant forms of Internet-based education have emerged over the past 20 years?

- How does the educational potential of the Internet relate to the realities of its use?

- Most importantly, how should we understand the potential gains and losses of what is being advanced?

The Internet as an Educational Tool

For many commentators, the Internet has always been an inherently educational tool. Indeed, many people would argue that the main characteristics of the Internet align closely with the core concerns of education. For instance, both the Internet *and* education are concerned with information exchange, communication, and the creation of knowledge.

> The participatory, communal nature of many social Internet applications and activities is aligned closely with the fundamental qualities of how humans learn, not least the practices of creating, sharing, collaborating, and critiquing.

Thus, in light of the Internet's capacity to allow these activities to take place on a vast and almost instantaneous scale, the educational implications of the Internet are understandably often described in grand terms. Take, for example, this recent pronouncement from Jeb Bush:

> *The Internet isn't just a powerful tool for communication. It's arguably the most potent force for learning and innovation since the printing press. And it's at the center of what is possibly America's mightiest struggle and greatest opportunity: How to reimagine education for a transformative era.*
>
> (Bush and Dawson 2013)

Beyond such hyperbole, the implications of the Internet for education and learning can be understood in at least four distinct ways. First, is the potential of the Internet to offer individual learners increased freedom from

the physical limitations of the *real world*. This is often expressed in terms of reducing constraints of place, space, time, and geography, with individuals able to access high-quality learning opportunities and educational provision regardless of local circumstances. The Internet is therefore portrayed as allowing education to take place on an *any time, any place, any pace* basis. Many commentators extend these *freedoms* into a transcendence of social and material disadvantage, with the Internet perceived as an inherently democratizing medium. The ability to support *freer* and *fairer* educational interactions and experiences is seen to reflect the Internet's underpinning qualities as "a radically democratic zone of infinite connectivity" (Murphy 2012, 122).

Secondly, the Internet is seen to support a *new culture of learning*—i.e., learning that is based around *bottom-up* principles of collective exploration, play, and innovation rather than *top-down* individualized instruction (Thomas and Seely-Brown 2011). The Internet allows learning to take place on a *many-to-many* rather than *one-to-many* basis, thereby supporting *socio-constructivist* modes of learning and cognitive development that are profoundly social and cultural in nature. Many educators would consider learners to benefit from the socially rich environments that the Internet can support (see Luckin 2010). For example, it is often argued that the Internet offers individuals enhanced access to sources of knowledge and expertise that exist outside of their immediate environment. In this sense, there is now considerable interest in the ability of the Internet to support powerful forms of *situated learning* and digitally dispersed *communities of practice*. The Internet is therefore seen as a powerful tool in supporting learning through *authentic* activities and interactions between people and extended social environments.

Thirdly, the capacity of the Internet to support a mass *connectivity* between people and information is felt to have radically altered the relationship between individuals and knowledge. It is sometimes argued that the Internet supports forms of knowledge creation and knowledge consumption that differ greatly from the epistemological presumptions of formal schooling and mass instruction. The networked relationships that Internet users have with online information have prompted wholesale reassessments of the nature of learning. Some educationalists are now beginning to advance ideas of *fluid intelligence* and *connectivism*—reflecting the belief that learning via the Internet is contingent on the ability to access and

use distributed information on a *just-in-time* basis. From this perspective, *learning* is understood as the ability to connect to specialized information nodes and sources as and when required. Thus being *knowledgeable* relates to the ability to nurture and maintain these connections (see Chatti, Jarke, and Quix 2010). As George Siemens (2004) puts it, learning can therefore be conceived in terms of the "capacity to know more" via the Internet rather than relating to the individual accumulation of prior knowledge in terms of "what is currently known."

Fourthly, the Internet is seen to have dramatically *personalized* the ways in which people learn—thereby making education a far more individually determined process than was previously the case. The Internet is associated with an enhanced social autonomy and control, offering individuals increased choice over the nature and form of what they learn, as well as where, when, and how they learn it. Education is therefore a wholly controllable aspect of one's personal life, with the Internet facilitating a *digital juggling* of educational engagement alongside daily activities and other commitments (Subrahmanyam and Šmahel 2011). Indeed, Internet users are often celebrated as benefiting from an enhanced capacity to self-organize and *curate* educational engagement for themselves, rather than relying on the norms and expectations of an education *system*.

The Educational Implications of the Internet

All these various shifts and realignments clearly constitute a fundamental challenge to the *traditional* forms of educational provision and practice that were established throughout the nineteenth and twentieth centuries, especially institutionalized modes of *formal* schooling and university education. For many commentators, therefore, the Internet contradicts the monopoly of state education systems and the vested interests of the professions that work within them. In all of the ways just outlined, the Internet would certainly seem to test established educational boundaries between *experts* and *novices*, the production and consumption of knowledge, as well as the timing and location of learning. In terms of how education is provided, the Internet is associated with a range of radically different learning practices and altered social relations.

The Internet has certainly prompted ongoing debate and concern within the educational community. On one hand, many educationalists are busying themselves with rethinking and reimagining the notion of *the school* and *the university* in ways that respond to the demands of the Internet age. There have been various proposals over the past decade for the development of educational institutions that are better aligned with the characteristics of Internet-adept learners and online knowledge. As Collins and Halverson (2009, 129) put it, the task of reinventing schools and universities for the Internet age involves not only "rethinking what is important to learn" but also "rethinking learning." This has seen modes of schooling being developed that are built around the communal creation (rather than individual consumption) of knowledge, in an attempt to imbue learning with a sense of play, expression, reflection, and exploration. The past ten years has seen a rash of ideas from enthusiastic educators proposing the development of new pedagogies and curricula built around social interaction, exploration, *gaming*, and *making*. All of these proposals for *school 2.0* reflect what Whitby (2013, 9–11) describes as *new models* of education provision based around "openness to learning and masterful tech-savvy."

However, in contrast to these *re-schooling* proposals has been a countermovement to align the Internet with more radical forms of educational deinstitutionalization. These *de-schooling* arguments have proven popular with groups outside of the traditional *education establishment*, framing the Internet as capable of usurping the need for educational institutions altogether. Key concepts here include self-determination, self-organization, self-regulation, and (in a neat twist on the notion of *do-it-yourself*) the idea of *do-it-ourselves*. All these ideas align the Internet with a general rejection of institutionalized education—especially what has long been critiqued as the obsolete *banking model* of accumulating *knowledge content*. Instead, Internet-based education is conceived along lines of open discussion, open debate, radical questioning, continuous experimentation, and the sharing of knowledge.

As with other aspects of digital activity, education is therefore imagined as something that is now open to reprogramming, modification, and hacking to better suit one's individual needs.

As Dale Stephens (2013, 9) reasons:

> *The systems and institutions that we see around us—of schools, college, and work—are being systematically dismantled.... If you want to learn the skills required to navigate the world—the hustle, networking, and creativity—you're going to have to hack your own education.*

These are all highly contestable but highly seductive propositions. Indeed, whether one agrees with them or not, these arguments all highlight the fundamental challenge of the Internet to what was experienced throughout the past one hundred years or so as the dominant mode of education. It is therefore understandable that the Internet is now being discussed in terms of inevitable educational change, transformation, and the general *disruption* of twentieth-century models of education provision and practice. As the noted technology commentator Jeff Jarvis (2009, 210) concluded in an acclaimed overview of the Internet's societal significance, "education is one of the institutions most deserving of disruption—and with the greatest opportunities to come of it." Bold statements such as these are now being made with sufficient frequency and conviction that talk of an impending *digital disruption* of education is now rarely contested. Many people, therefore, see the prospect of the Internet completely reinventing education not as a matter of *if*, but as a matter of *when*.

Prominent Forms of Internet-Based Education

In the face of such forceful predictions of what *will* happen, it is perhaps sensible to take a step back and consider the realities of what has already happened with the Internet and education. As was suggested at the beginning of this chapter, amidst these grand claims of transformation and disruption, it is important to ask how the educational potential of the Internet is *actually* being realized in practice. In this sense, we should acknowledge that the Internet has been long used for educational purposes, and a number of prominent models of Internet-based education have emerged over the past 20 years. Perhaps the most established of these are various forms of what has come to be known as *e-learning*—ranging from online courses through to virtual classrooms and even virtual schools. Many

early forms of e-learning involved the predominantly one-way delivery of learning content, thereby replicating traditional *correspondence* forms of distance education. These programs (which continue to the present day) tend to rely on online content management systems, albeit supported by some form of interactivity in the form of e-mail, bulletin boards, and other communications systems. Alongside these forms of content delivery is the continued development of so-called virtual classrooms—usually spatial representations of classrooms or lecture theaters that can be *inhabited* by learners and teachers. Often these virtual spaces are designed to support synchronous forms of *live* instruction and feedback, with learners able to listen to lectures and view videos and visual presentations while also interacting with other learners via text and voice. Other asynchronous forms of virtual classroom exist in the form of digital spaces where resources can be accessed and shared—such as audio recordings and text transcripts of lectures, supplementary readings, and discussion forums. These forms of e-learning have continued to be developed since the 1990s, with entire *cyber schools* and online universities now well-established features of educational systems around the world.

While these examples of *e-learning* tend to replicate the basic structure and procedures of *bricks-and-mortar* schools and universities, a variety of other models of Internet-supported education have emerged over the past 20 years. One of the most familiar forms of Internet-based education is the collective *open* creation of information and knowledge, as exemplified by the online encyclopedia Wikipedia. Despite ongoing debates over its accuracy and coverage, the educational significance of Wikipedia is considerable. As well as being a vast information resource, the ability of users to contribute and refine content is seen to make *wiki* tools such as Wikipedia a significant educational tool. The belief now persists amongst many educators that mass user-driven applications such as Wikipedia allow individuals to engage in learning activities that are more personally meaningful and more publically significant than was ever possible before. As John Willinsky (2009, xiii) reasons:

> *Today a student who makes the slightest correction to a Wikipedia article is contributing more to the state of public knowledge, in a matter of minutes, than I was able to do over the course of my entire grade school education, such as it was.*

These characteristics of wiki tools correspond with the wider *Open Educational Resource* movement which is concerned with making professionally developed educational materials available online for no cost. In this manner, it is reckoned that content from almost 80 percent of courses at the Massachusetts Institute of Technology are available on this free-to-use basis. Similar commitments can be found in institutions ranging from world-class universities such as Yale and Oxford to local community colleges. In all these cases, course materials such as seminar notes, podcasts, and videos of lectures are shared online with a worldwide population of learners, most of whom could otherwise not attend. Crucially (as with Wikipedia), the emphasis of Open Educational Resources is not merely permitting individuals to use provided materials, but encouraging the alteration and amendment of these resources as required. For example, the UK Open University's extensive OpenLearn project provides free online access to all of the institution's curriculum materials with an invitation for individual users to adapt these resources as they wish.

Other forms of online content sharing involve the open distribution of educational content that has been created by individuals as well as institutions. For example, the YouTube EDU service offers access to millions of educational videos produced by individual educators and learners. Similarly, Apple Computers' collection of educational media—the so-called iTunes U—is designed to allow learners to circumvent traditional educational lectures and classes in favor of on-demand free mobile learning (Çelik, Toptaş, and Karaca 2012). Describing itself as "possibly the world's greatest collection of free educational media available to students, teachers, and lifelong learners," iTunes U offers free access to hundreds of thousands of educational audio and video podcast files. Most recently, there has been considerable praise for the Khan Academy's online provision of thousands of bespoke educational videos alongside interactive quizzes and assessments covering a range of subject areas and topics. The aim of Khan Academy is to support individuals to learn at their own pace and to revisit learning content on a repeated basis. This so-called flipped classroom model is intended to allow individuals to engage with instructional elements of learning *before* entering a formal classroom. Face-to-face classroom time can be then be devoted to the practical application of the knowledge through problem solving, discovery work, project-based learning, and experiments (Khan 2012).

Another notable *open* example of Internet-based education has been the development of *MOOCs* (Massively Open Online Courses) over the past five years or so. Now, most notably through successful large-scale ventures such as Coursera and Ed-X, MOOCs involve the online delivery of courses on a free-at-the-point-of-contact basis to mass audiences. At its heart, the MOOC model is based on the idea of individuals being encouraged to learn through their own choice of online tools—what has been termed *personal learning networks*—the collective results of which can be aggregated by the course coordinators and shared with other learners. This focus on individually directed discovery learning has proved especially appropriate to college-level education. Now it is possible for individuals of all ages to participate in mass online courses run by professors from the likes of Stanford, MIT, and Harvard universities in subjects ranging from a Yale elective in Roman architecture to a Harvard course in the fundamentals of neuroscience.

Another radical application of the Internet to support self-directed, non-institutional learning are initiatives such as the *hole-in-the-wall* and *School in the Cloud* initiatives. These programs are built around an ethos of *minimally invasive education* where children and young people can access digital technology at any time, and teach themselves how to use computers and the Internet on an individually paced basis. The guiding ethos for the original hole-in-the-wall program was to locate Internet access in what Arora (2010, 691) characterizes as "out-of-the-way, out-of-the-mind locations" rather than in formal settings such as schools or universities. Indeed, the program's credo of minimally invasive education is an avowedly non-institutionalized one, with children expected to engage with the Internet as an educative tool "free of charge and free of any supervision" (Mitra 2010). This approach is seen to be especially applicable to locations such as slum communities in India and Cambodia where Internet access is otherwise lacking. The recent elaboration of the initiative into the School in the Cloud marks an attempt to use online communication tools to allow older community members in high-income countries to act as mentors and *friendly but knowledgeable* mediators to young autonomous learners in lower-income communities. The provision of such access and support is therefore seen to underpin what the project team term "self-organized learning environments" and "self-activated learning"—thus providing an alternative "for those denied formal schooling" in low-income countries (Arora 2010, 700).

These programs, projects, and initiatives are indicative of the variety of ways in which education and the Internet have coalesced over the past 20 years. Yet perhaps the most significant forms of Internet-based education are the completely *informal* instances of learning that occur in the course of everyday Internet use. In this sense the Internet's implicit support of various forms of *informal learning* could be seen as its most substantial educational impact (see Ünlüsoy et al. 2014). As the cultural anthropologist Mimi Ito has described, there are various different genres of everyday Internet-based practice that can be said to involve elements of learning (see Ito et al. 2009). At a basic level is the popular practice of using the Internet to simply *hang out* with others. Often these forms of *hanging out* can spill over into more focused instances of what Ito terms *messing around*—i.e., activities that are interest-driven and more centered on peer sociability, often involving fortuitous searching, experimentation, and playing with resources. This messing around can then sometimes lead to the more intense commitment of what Ito has described as *geeking out*. These are bouts of concentrated and intense participation within defined communities of like-minded and similarly interested individuals driven by common and often specialized interests. In supporting all these forms of *learning*, everyday use of the Internet can be seen as an inherently educational activity.

The Reality of the Internet and Education

These examples—and many more like them—are now seen as proof of the Internet's growing contribution to what it means to learn and be educated in the twenty-first century. Undoubtedly, developments such as MOOCs, flipped classrooms, and self-organized learning could well turn out to be educational *game changers* (Oblinger 2012). Yet the history of educational technology over the past one hundred years or so warns us that change is rarely as instantaneous *or* as totalizing as many people would like to believe. Indeed, the history of *modern* educational technologies (starting with Thomas Edison's championing of educational filmstrips in the 1910s) has usually been characterized by sets of complex mutually shaping relationships between education and technology (see Cuban 1986). In other words, *new* technologies rarely—if ever—have a direct one-way *impact* or

predictable *effect* on education. Rather, established cultures and traditions of education also have a profound reciprocal influence on technologies. As the historian Larry Cuban (1993, 185) observed succinctly of the remarkable resilience of schools to the waves of successive technological developments throughout the 1980s and 1990s, "computer meets classroom—classroom wins." In asking how the Internet is shaping education in the 2010s, we therefore need to also ask the corresponding question of how education is shaping the Internet.

From this perspective, it is not surprising to see the most successful forms of Internet-based education and *e-learning* being those that reflect and even replicate *pre-Internet* forms of education such as classrooms, lectures, and books. It is also not surprising to see the long-established *grammar* of formal education and educational institutions having a strong bearing on emerging forms of Internet-based education (Tyack and Cuban 1995). Take, for instance, the persistence of familiar practices such as dividing knowledge into distinct subject areas, using graded individual assessments, or relying on *expert* teachers. While understandable, these continuities certainly belie claims of radical transformation and disruption of the educational status quo. Thus in contrast to the revolutionary zeal of some commentators, it could be observed that the Internet is having most *impact* on education where it is *not* causing radically new patterns of participation or practice. For instance, rather than extending educational opportunities to those who previously were excluded, the recent rise of the MOOC in countries such as the U.S. and UK appears primarily to be supporting well-resourced, highly motivated, and already well-educated individuals to engage in more education (thereby replicating a trend referred to by some social commentators as the *Matthew Effect*). This is not to say that MOOCs are an insignificant form of education—however, it does suggest that their main *impact* is that of increasing rather than widening educational participation. Indeed, this view does imply that some of the more *radical* claims of social transformation and change that surround MOOCs (and other forms of Internet-based education) require careful consideration.

This leaves any attempts to predict the likely influence of the Internet on future forms of education on uncertain ground. Of course, it is unwise to adapt an overtly cynical view that there is nothing *new* about Internet-based education at all—i.e., that the educational effects of the Internet are

simply a case of *old wine in new bottles*. Yet it is equally unwise to presume that any of the examples given so far in the chapter necessarily herald a fundamental shift in education. The Internet is certainly associated with educational changes—yet these changes are complex, contradictory, convoluted and decidedly *messy*.

In this respect, perhaps the most significant issues that need to be considered about the Internet and education are sociological, rather than technical, in nature.

In this sense, the Internet prompts a range of ideological questions (rather than purely technical answers) about the nature of education in the near future. Thus, as this chapter draws to a close we should move away from the optimistic speculation that pervades most educational discussions of the Internet. Instead, there are a number of important but less often acknowledged social, cultural, and political implications that also merit attention:

I) The Internet and the increased individualization of education

First, then, is the way in which Internet-based education promotes an implicit individualization of practice and action. The Internet is celebrated by many educationalists as increasing the responsibility of individuals in terms of making choices with regards to education, as well as dealing with the consequences of their choice. All the forms of Internet education outlined in this chapter demand increased levels of self-dependence on the part of the individual, with educational success dependent primarily on the individual's ability to self-direct their ongoing engagement with learning through various preferred means. Of course, this is usually assumed to work in favor of the individual and to the detriment of formal institutions. Yet the idea of the self-responsibilized, self-determining learner is based upon an unrealistic assumption that all individuals have a capacity to act in an agentic, empowered fashion throughout the course of their day-to-day lives. In Bauman's (2001) terms, the successful online learner is someone able to act as an empowered individual *de facto* rather than an individual *de jure* (i.e., someone who simply has individualism *done to* them). Of course, only a privileged minority of people are able to act in a largely empowered

fashion. As such this individualization of action leads to education becoming an area of increased risk as well as opportunity.

These issues raise a number of important questions. For instance, just how equal are individuals in being able to make the educational *choices* that the Internet actually offers? How are the apparent educational freedoms of the Internet resulting in enhanced *unfreedoms* (such as the intensification and extension of educational *work* into domestic settings)? To what extent are *personalized* forms of Internet education simply facilitating the *mass customization* of homogenous educational services and content? What is the nature of the collective forms of Internet-based education? How do *communities* of learners established through the Internet differ in terms of social diversity, obligation, or solidarity? Is the Internet undermining or even eroding notions of education as a public good?

II) The Internet and the growth of data-driven education

Another significant issue related to the increased educational significance of the Internet is the ways in which online data and information are now defining, as well as describing, social life. The Internet has certainly extended the significance of databases, data mining, analytics, and algorithms, with organizations and institutions functioning increasingly through the ongoing collection, aggregation, and (re)analysis of data. Crucially, the Internet allows this *data work* to take place on a mass, aggregated scale. We are now seen to be living in an era of *Big Data* where computerized systems are making available "massive quantities of information produced by and about people, things, and their interactions" (Boyd and Crawford 2012, 662).

The collection and analysis of online data is now a key aspect of how actions are structured and decisions are made in many areas of education. Now, for example, masses of online data are being generated, collected, and collated as a result of the Internet-based activities that take place within educational institutions—ranging from *in-house* monitoring of system conditions to the *public* collection of data at local, state, and federal levels. These data are used for a variety of purposes—including internal course administration, target setting, performance management, and student tracking. Similar processes and practices exist in terms of use of data *across* educational systems—from

student databases to performance *league tables*. There are, of course, many potential advantages to the heightened significance of online data. There has been much recent enthusiasm for the potential of *learning analytics*—i.e., "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs" (Siemens et al. 2011, 4). Similarly, there is growing discussion of *educational data mining* and *academic analytics*. All of these uses of digital data are seen to lead to more efficient and transparent educational processes, as well as supporting individuals to self-monitor and *self-diagnose* their learning (Eynon 2013).

Yet, there is a clear need for caution amidst these potential advantages—not least how the increased prevalence of online data in education is implicated in the shaping of what people can and cannot do. For example, how are individuals and their learning being represented by data collected online? How does the Internet support the connection, aggregation, and use of these data in ways not before possible? To what extent are individuals' educational engagements now being determined by *data profiles*? How are these online data being used in forms of *predictive surveillance* where educators and educational institutions use data relating to past performance and behavior to inform expectations of future behaviors? What aspects of educational engagement are *not* represented in the online data being collected and analyzed?

III) The Internet and the increased commercialization and privatization of education

Thirdly, is the need to recognize the role of commercial and private actors in the growth of Internet-based education. Indeed, the role of the private sector is integral to many of the forms of Internet-based education described in this chapter. For example, it is estimated that the global education/technology market is worth upwards of $7 trillion, with burgeoning levels of private capital investment in online education. A range of multinational commercial interests such as Pearson, Cengage, and McGraw-Hill are now involved heavily in the business of e-learning and online provision of teaching and training—competing with countless smaller commercial concerns and a range of nonprofit organizations. Clearly Internet-based education marks a distinct move away from a *planned economy* model where

education provision is largely the preserve of state-run, public-sector institutions (see Picciano and Spring 2013).

Of course, the increased involvement of commercial interests in online education could be seen to have many potential benefits. The private sector is able to focus considerable technological resources and expertise on educational issues. It is often assumed that commercially provided education is more responsive to the demands of its *customers*—be it the immediate preferences of learners or the longer-term workforce requirements of business and industry. Moreover, as Chubb and Moe (2012) reason, improvement can arise from market competition between private and public education providers: "in time, [for-profit institutions] may do amazing things with computerized instruction—imagine equivalents of Apple or Microsoft, with the right incentives to work in higher education—and they may give elite nonprofits some healthy competition in providing innovative, high-quality content." Indeed, the appeal of many of the forms of Internet-based education described in this chapter is predicated upon bringing the innovation of the private sector to bear on the inefficiencies of public education. As Sebastian Thrun (the computer scientist credited with the popularization of the MOOC concept) argued recently: "Education is broken. Face it. It is so broken at so many ends, it requires a little bit of Silicon Valley magic" (Wolfson 2013).

Yet the possibilities for commercial innovation and *magic* notwithstanding, there are a number of reasons to challenge the growing influence of private interests in shaping education agendas in these ways. For example, how committed are IT producers and vendors to the public good of educational technology above and beyond matters of profit and market share? Given that education is an integral element in determining the life chances of the most vulnerable members of society, how appropriate is a Silicon Valley, venture-capitalist mindset of high-risk *start-ups* with expected high rates of failure? What are the moral and ethical implications of reshaping education along the lines of market forces and commercial values? Why should education correspond automatically with the needs of the digital economy?

IV) The Internet and the changing values of education

Finally—and perhaps less tangibly—there is also a sense that the Internet might be altering the psychological, emotional, and spiritual bases of

education. For example, many of the forms of online education discussed in this chapter imply an increased expansion of education into unfamiliar areas of society and social life—leading to an *always-on* state of potential educational engagement. Indeed, the *anytime, anyplace* nature of online education clearly involves the expansion of education and learning into domestic, work, and community settings where education and learning might previously have not been prominent. There are clear parallels here with what Basil Bernstein (2001) identified as the "total pedagogization of society"—i.e., a modern society that ensures that pedagogy is integrated into all possible spheres of life. This raises questions of what is perhaps lost when one is able to engage with education at all times of the day and in all contexts? Is there something to be said for being able to disconnect from the pressures of education? Is learning best suited to some contexts and circumstances than others?

Many of the forms of online education described in this chapter could also be said to frame learning (often inadvertently) as a competitive endeavor. Thus in contrast to allowing individuals to learn harmoniously alongside others, the Internet could be seen as placing individuals in "personal formative cycles, occupied in unison within individual feedback-action loops. They learn to become industrious self-improvers, accepting and implementing external goals" (Allen 2011, 378). Thus while a sense of achievement at the expense of others may not be immediately apparent, the Internet could be seen as a means of humanizing, disguising, and intensifying the competitive connotations of learning. Continuing this line of thinking, the partial, segmented, task-orientated, fragmented, and discontinuous nature of online education could perhaps even be seen as a form of *spiritual alienation*—i.e., alienation at the level of meaning, where *conditions of good work* become detached from the *conditions of good character* (Sennett 2012).

All these points also relate to the correspondences between the Internet and the altered emotional aspects of educational engagement. In particular, many of the forms of Internet-based education described earlier in this chapter (such as the virtual school or the MOOC) could be said to involve learning being experienced on less immediate, less intimate, and perhaps more instrumental grounds. These points were explored in Jonathan Wolff's (2013) recent reflections on what might be lost when a lecture takes place

online as opposed to in a face-to-face lecture theater. While these diminishments are often difficult to pinpoint, Wolff suggested qualities such as the immediacy, the serendipity, and the *real-ness of the live experience* of learning alongside other people. Certainly, the remote, virtual sense of learning online is qualitatively different to the embodied sense of face-to-face learning—both in advantageous and disadvantageous ways.

Conclusions

Whether one agrees with any of these latter arguments or not, it is clear that the topic of "the Internet and education" needs to be approached in a circumspect manner. The predominantly optimistic rhetoric of transformation and change that currently surrounds the Internet and education distracts from a number of significant conflicts and tensions that need to be better acknowledged and addressed. This is not to say that we should adopt a wholly antagonistic *or* wholly pessimistic stance. Indeed, many of the *issues* just outlined should not be assumed automatically to be cause for concern. There are, after all, many people who will be advantaged by more individualized, elitist, competitive, market-driven, omnipresent, and de-emotionalized forms of educational engagement. The Internet clearly works for the millions of people who are learning online at this very moment.

Yet while it may well be that the Internet is helping *some* individuals to engage with education in more convenient, engaging, and useful ways, we would do well to acknowledge that this is unlikely to be the case for all. Any Internet-led changes in education are accompanied by a variety of unintended consequences, *second-order effects*, and unforeseen implications. Perhaps the most important point to consider is the well-worn tendency of digital technology to reinforce existing patterns of educational engagement—helping already engaged individuals to participate further, but doing little to widen participation or reengage those who are previously disengaged. In particular, any discussion of the educational *potential* of the Internet needs to remain mindful of the limited usefulness of a *technical-fix* approach to understanding contemporary education. The Internet should not be seen as a ready *solution* to apparent inefficiencies of *twentieth-century* education institutions or practices—it will not lead automatically

to more engaged or motivated learners, more highly skilled workforces, or rising levels of national intelligence and innovation. Instead, it is likely that many of the *problems* of contemporary education are primarily social and cultural in nature, and therefore require social and cultural responses.

As such, while there is plenty of scope for the increased use of the Internet within education, any claims for *change* and *improvement* should be seen as contentious and debatable matters, rather than inevitable trends that educators have no choice but to adapt to. To reiterate a key theme that has emerged throughout our discussion, underlying all of the issues raised in this chapter are questions of what sort of future education one believes in. As such, the role of the Internet in *improving*, *transforming*, *or even disrupting* education is a deeply complex and ideologically loaded matter that goes well beyond technical issues of how to personalize the delivery of educational content, or support the production and consumption of online content. The future of education may well involve increased use of the Internet—but will not be determined by it.

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