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The Online Education Controversy and the Future of the University

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Abstract The neo-liberal reform of the university has had a huge impact on higher education and promises still more changes in the future. Many of these changes have had a negative impact on academic careers, values, and the educational experience. Educational technology plays an important role in the defense of neo-liberal reform, less through actual accomplishment than as a rhetorical justification for supposed "progress." This paper outlines the main claims and consequences of this rhetorical strategy and its actual effects on the university to date.

Keywords Educational values · Educational technology · Automation · Deprofessionalization · Neo-liberalism · Computer conferencing

> Those who don't know history are doomed to repeat it.
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> —Edmund Burke

1 Introduction: Neo-liberal Reform

The expansion of higher education in the 1950s and 1960s was experienced by those in the universities as a golden age. Huge new resources were pumped into the systems for research and facilities as the baby boomers entered college and governments looked to science for the foundations of national power. But golden ages do not last forever. By the

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1980s new trends were beginning to emerge that we can now call a "neo-liberal" reform movement. It has five components.

First, corporate funding for research is increasingly substituted for government funding. This trend is officially interpreted as improving the integration of the university to society. However, the notion that "society" consists essentially in business enterprise damages both science and education, biasing research toward short term profits, subverting academic integrity and diminishing respect for the humanities and social sciences.

Second, teaching is deprofessionalized through the increasing substitution of less qualified temporary teachers for tenure track faculty. This trend reduces costs at the expense of graduate students and young faculty who can no longer expect the kind of academic careers their teachers enjoy.

Third, students are required to pay an increasing share of the costs of their education. This trend has culminated in the United States with a total student debt of 1.2 trillion dollars as I write this in 2014.

Fourth, the universities are bureaucratized as corporate-style management takes over an increasing share of faculty power. This trend has dangerous implications for the future of the universities. It leads to huge salary increases for upper administration far out of line with other academic salaries. Bureaucrats increasingly intrude in areas where they lack the faculty's expertise. Cases of administrative profiteering and corruption proliferate around pensions and sports and must be covered up to protect the reputation of the universities.

There is a fifth component that has so far remained largely aspirational although it is by far the most visible and "hyped" aspect of the reform movement. If this fifth component could be effectively realized, it would truly transform the institutions beyond recognition. This is the automation of educational delivery, promised by one generation after another of educational technologists and their business allies. It is important to evaluate this ambitious project carefully as it tends to stand in for the neo-liberal program as a whole, legitimating with the alibi of "progress" what are in fact questionable economic changes. This trend is countered to some extent by innovative uses of technology by faculty attempting to develop new educational forms within the framework of traditional academic values.

In this paper I will focus on this fifth aspect of the changing profile of our academic institutions. It nicely illustrates the theme of this special issue, "The Art of Living with Technology." As I will argue in what follows, two paths of educational technology diverge. Each path promises changes but of very different kinds. One path employs technology to achieve economic goals. It demands new academic values and practices. In this case the university community is called not to live with technology but to adapt to it. The other path integrates technology to something like academic life as we know it. The process of integration preserves as much as it changes. It exemplifies the art of "living with…." It is this art which we must pursue if technology is to enhance rather than degrade our lives.[1]

2 The Automation Agenda

The phrase "educational technology" is ambiguous. It usually refers to technologies employed by educators. But it can also mean technologies that do the educating. In this latter sense "educational technology" appeals to some of those who administer educational

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[1] For more on this notion of divergent paths of development, see Feenberg (2012).

institutions and their allies in education departments, technology companies and government.

Here is a comment by William Brody, the former President of my old university:

> If you went to a Johns Hopkins class circa 1900, and you went today, probably the only difference would be today we have PowerPoint. It would look exactly the same. If you went into an automobile plant in 1900 and today, you wouldn't recognize that you were in the same place. Almost every other aspect of society has employed technology to reduce the labor content needed to produce a unit of service. The labor content of a car is dramatically lower today than it was 50 years ago or 100 years ago…. At some point higher education is going to price itself out of the market…. [unless] you figure out how to deliver the educational content in a different way…. One thing about education and information is it costs a lot to develop and deliver the first copy of it, but subsequent copies are less expensive. So you can distribute the same material to different audiences. You can develop a course in Shakespeare for undergraduates, which is delivered in a low student-to-faculty ratio with all the interaction you want. But you could then develop the same course to give to larger audiences for an evening course (in Krieger 2008).

The refrain is familiar. The Ivy League and Oxbridge will continue to offer students the personal contact with professors that we all enjoyed when we were in college. But future students will not be so lucky. They may have to settle for an automated tutorial delivered over the Internet, with videos of "star" professors taking the place of lectures and "interactive" tests taking the place of classroom discussion. Perhaps underpaid "tutors" will continue to lead online discussions in some programs, but the old model of the university as a place of collegial intellectual life is doomed to go the way of the steam car and telegraph.

Brody explains the economics of all this in the cited passage. Education is a performance and like other performing arts, its labor costs are high since each "show" costs as much as the last. In fact faculty salaries represent about half the cost of higher education. The promise of technology is the transformation of education into a decreasing cost item, like CDs or pencils. Initial investment in courses may be high, but the nth copy will be nearly free. Economies of scale will save mass education from bankruptcy.

But will it still be education many professors and students ask? Brody himself reveals the problem later in his discussion. He points out that we have no clear measure of productivity in education, so we have no easy way to know what to preserve and what to give up in technologizing it. This is different from the manufacture of automobiles. Henry Ford had no problem identifying and counting the product at the end of his assembly line. But how can one compare a personalized education based on human interaction with an automated product?

One can of course test for the delivery of contents, but that is a contentious definition of educational output, not least because of arguments over what those contents might be: facts, theories, intellectual traditions, learning strategies, critical awareness? No similar quarrels troubled Henry Ford. He once said you can buy my cars in any color as long as it's black: no frills and no ambiguities. The basic reason his customers wanted a car was clear and simple: to get from here to there, and this Ford supplied as well or better than his competitors.

3 Distance Education

I was shocked to read Brody's remarks in the Johns Hopkins Magazine, especially since I was involved in the invention of the very technology to which he implicitly appeals. The first online education program was developed at the Western Behavioral Sciences Institute (WBSI) in La Jolla, California in 1982.[2] The Internet was still closed to the public at that time and computer communication practically unknown outside computer companies and university research departments.

Distance education back then depended on the mail, not computers. Students received packets of materials by post and sent in tests to anonymous graders. There was no contact with live teachers or other students. Online education had the advantage in our original version of adding human interaction to this system. We used a proprietary network to access a computer conferencing program that resembled current web forums. Faculty from major universities was interested in teaching in this experimental program. Readings were still distributed by mail, but online discussions generated voluminous transcripts. Although today it is routine, this communicative application of computer networks came as a surprise to both educators and computer specialists. For a time it was quite famous. We even featured on the cover of *Fortune*.[3]

From our early experiences we learned lessons that are still valid today. Text-based online discussion is an inexpensive and effective pedagogical format that requires no special equipment and little training. We showed that effective learning can take place through interactive on-line education. Not always, of course—what pedagogy succeeds every time?—but often enough for us to form an ideal of good practice. Using forum software, faculty in many universities have for years now brought the excitement of classroom discussion to an electronic setting.

Of course such on-line discussions are not the same as face-to-face interactions. There are losses, but there are also gains. Without face-to-face contact, gestures and eye contact are lacking, but individuals learned how to compensate and new forms of interaction are invented. In successful applications, small classes are the rule: 20 is a good maximum. From an educational standpoint, there is little doubt that well prepared teachers under good conditions can be effective at sustaining a true equivalent of classroom interaction.

4 From CAI to Digital Diploma Mills

Brody's remarks reflect a different view of the Internet's potential contribution to education. He is interested in automation rather than interaction. This is an old project with a long history of failure. Early attempts to substitute radio and television broadcasts for live face-to-face instruction failed to satisfy most students. In the 1950s computers were brought in to get rid of teachers using what was called Computer Aided Instruction, or CAI. Despite many experiments with different designs, CAI was also unable to offer a convincing substitute for live face-to-face instruction. At the end of the 1990s, many college presidents believed that the new multimedia features of the Internet could do the job. This sudden enthusiasm for educational technology responded to a budget crisis. The Internet promised a cheap alternative to traditional education. Lectures by "star"

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[2] For an account of the development of this program, see Hamilton and Feenberg (2012).

[3] *Fortune Magazine*, March 7, 1983.

professors could be delivered to students' computers and tests and grading handled through the system. Perhaps distance education could be substituted for expensive classrooms with the new technology. So history repeats itself….

Although they used the same words as we had at WBSI, computer companies and college administrators had something very different in mind. The meaning of the term "online education" had changed to conform to different demands, not adding the human touch to distance education but removing it from the classroom. Where we had added communication to a traditional distance learning system that lacked it, the new advocates of online education hoped to automate education on the Internet, eliminating the existing interaction in the classroom.

This comparison opens the technical question of the design of computer systems in education. Some humanist scholars blame the computer as such for the problems.[4] If that is true, design is unimportant. But if the computer is innocent, at least of the charge of dehumanization, then everything depends on how the systems are put together. Automation is one possible design agenda. We explored a different one at WBSI. I will discuss variations on that alternative in my conclusion.

Given the existence of these alternatives, the issue of educational technology must be framed in a broad social and political context; it is not just a technical issue. The design of educational technology reflects the meaning of education in society. It will affect management career patterns, standards, and quality. The resolution of these issues and the evolution of educational technology go hand in hand.

Although many faculty see no way to reconcile traditional academic values with the changes made possible by the new technology, we cannot simply dismiss technology as some are inclined to do. Since the early 1980s, more and more of our social life has gone on in cyberspace. This is true even of the humanistic critics of technology. David Noble's famous essay entitled "Digital Diploma Mills" (1998) circulated on the Internet.

Many social interactions that used to be face-to-face are now mediated. For the most part the mediation is written text, which has become a far more flexible instrument than in the past. We are now typing our identities and our relationships. This remarkable change has freed us from time and space constraints while making us dependent on computers, software and the corporations that own online services. Has our social world been colonized by technology and these corporations, or have we imposed our communicative imperatives on the technocratic order of computing? Will the very meaning of education be transformed to suit the limits of automated systems, or will educational technology be developed to serve something like education as we know it?

5 Deskilling

The idea of lowering labor costs through a new division of labor is a child of capitalist manufacturing and especially of the industrial revolution. It was Adam Smith who first promoted it in his classic work *The Wealth of Nations* (1960). He described the increase in productivity in the manufacture of pins through the division of tasks among the workers. His ingenious description of this innovation is commemorated on the British 20 pound note.

But the remarks of Andrew Ure are even more revealing. His book, *The Philosophy of Manufactures*, explained the whole program in 1835. Back in those early days, it was

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[4] See, for example, Lyotard (1984, 13).

easier to speak frankly without fear of exposing the embarrassing truth to alert critics. Listen closely and you will hear the unspoken and no doubt unintended sub-text of Brody's message.

> By the infirmity of human nature it happens, that the more skillful the workman, the more self-willed and intractable he is apt to become, and, of course, the less fit a component of a mechanical system, in which, by occasional irregularities, he may do great damage to the whole. The grand object therefore of the modern manufacturer is, through the union of capital and science, to reduce the task of his work-people to the exercise of vigilance and dexterity (Ure 1835, 18).

Are "self-willed and intractable" professors next in line for technological obsolescence?

The ideal of automated education is no doubt still a minority view, but it has gained sufficient plausibility from advances in computing and the Internet to occupy a considerable space in public discourse. It is still unclear whether it will prevail in the future. The difficulty of automating education and the opposition to removing teachers from the classroom has resulted in an incoherent compromise. Education today is a confused combination of the potentials for automation and communication made possible by the Internet. Technologies introduced to automate are also employed by teachers to realize traditional educational values.

Many teachers organize online discussions, but class sizes vary widely, sometimes attaining ridiculous numbers no teacher could be expected to manage with an interactive pedagogy. In some universities online classes are simply written out or recorded by professors who never meet the students. The phrase "online education" has come to mean many different things, not all of them good. This chaotic implementation of online education is not likely to last but what will follow?

6 The Consequences (So Far)

We have now had about 30 years in which to observe the impact of computer networking on the universities. We can make some preliminary judgements on the basis of this experience. The results so far are not the transformation hoped for by President Brody and those like him who have put their faith in educational technology. What is really happening in higher education after decades of attempts to use computer networking to transform the system and cut costs? In fact, very little has changed. The Internet has been incorporated into the existing system without disruptive consequences except in the case of distance learning which already had a low cost business model. This is largely an effect of a historic change in the very definition of the computer under the impact of user demands for communicative opportunities on the Internet. The Internet and now also mobile telephones have been transformed into instruments of asynchronous written communication. This transformation models usages that are more easily imagined and implemented in education than the automation agenda. Here are some examples.

I will begin with distance learning, since it is where I entered the scene so many years ago. Distance learning is primarily aimed at underserved populations. In poor societies many people live in remote regions and in rich societies more and more working adults need educational credentials. Because these groups do not have access or schedules compatible with regular university programs, they need distance education and benefit from the improvements made possible by computer networking. Universities such as the

Open University in Great Britain, the University of Phoenix in the United States and Athabasca University in Canada specialize in serving these populations. They have all arrived at a virtual classroom model similar to the one pioneered by WBSI. This model relies on small online classes led by a professional teacher–moderator. The qualifications of the instructor are essential to the quality of instruction in this model and generally these institutions have been conscientious about providing qualified tutors.

At Athabasca, for example, tutors with master's or doctor's degrees manage a group of approximately 30 students in online discussions. The Internet offers the possibility of supplementing online discussion with audio, video, and documentary materials. The overall experience is rated highly by students although attrition rates are some 30–35 %.

Programs such as this one compare favourably with crude attempts to milk students for tuitions with distance education courses that offer no high quality professional support. It is not uncommon for universities to post videos and attach them to courses run by teaching assistants who may not even have a master's degree. The "presence" of the professor is purely virtual, that is to say, the professor is really absent. Combining deprofessionalization and automation, these courses are fraudulent substitutes for real education. But just for that reason they are neither popular nor respected and have little chance of displacing the regular curriculum.

The newcomer to distance education is the Massive Online Open Course (MOOC). This model relies on the Internet to bring in tens or even hundreds of thousands of students per class. The course materials are generally not interactive but consist in videos and documents. Since the professor is not available to grade papers, the model employs peer evaluations and where forums are available, they are led by other students, not professional teachers. Thus MOOCS also deprofessionalize and automate although with potentially more interesting results than conventional distance learning.

MOOCs are still celebrated as the next big thing, the ultimate replacement for higher education as we know it. But ambitions have moderated a bit. It is difficult to believe that the often cited 90 % dropout rate is evidence of a transformative educational technology. Even after correction for statistical issues, dropout rates are high and the "courses" suspiciously like peer based reading groups.[5] Nevertheless, many universities are now jumping on the bandwagon, afraid of being left behind by competitors. Once again the hype surrounding educational technology seduces university administrators into large investments in hardware and software in the hope of unlikely future profits.

Nevertheless MOOCs are interesting. Coursera, one of the leading companies engaged in delivering MOOCs, has made software innovations. Its platform facilitates the organization of online and face-to-face study groups. Students living in the same area are put in touch. Coursera has also managed to add limited interaction to videos. Their videos can be equipped with built in quizzes and answers. Innovations such as these may show up in the future in standard Learning Management Systems designed for virtual classes.

There is no reason to deplore the availability of course material on the Internet and the new technology makes improvements in distance education possible. This is the one domain in which significant institutional change has occurred. The high dropout rates from MOOCs are not surprising. There have always been students capable of learning on their own when given access to good materials such as textbooks and educational films. That small minority is now drowned in the mass of students attracted by the hype surrounding

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[5] For information on dropout rates, see https://www.insidehighered.com/news/2013/03/08/researchers-explore-who-taking-moocs-and-why-so-many-drop-out.

MOOCs, but they emerge at the end of the day with credits in hand. Still this is hardly the revolution in higher education promised by the promoters of the technology.

More modest changes have occurred in regular college education. These changes are summed up under the name "blended education." By this is meant traditional college courses supplemented by online resources of some sort.

There has been a lot of administrative pressure on faculty to use the Internet in class. Most faculty now do the minimum by putting a syllabus and readings online. Sometimes notes or videos of lectures are posted as well. These are purely informational uses of the Internet. Less frequently a web forum is opened up for students to hold discussions or ask questions. Blogs or online journals get students involved in writing about their experience with course materials. None of this changes the structure of the university or threatens the professional status of faculty as do other low-tech aspects of the neo-liberal reform.

Younger, more adventurous faculty has taken the experiment with blended education further. Some participate actively in their class web forum. This is especially effective in upper division and graduate courses where the students have more to say and more interesting questions. The "flipped class" turns the large lecture hall class inside out. The professor no longer addresses the whole class from the podium but posts videos of lectures online. The course content is delivered by the Internet while the professor, in the time freed up, attends tutorials and workshops with the students to enhance face-to-face discussion. Again, these experiments leave the institutional structure unchanged. The main innovation appears to be social: instead of using the time freed by the large lecture course for research, the professor is steered toward interaction with students in study sections.

7 Conclusion

In sum, the university today is in transition, but it is unclear toward what future. Its further slow decline under the impact of neo-liberal reforms seems likely. It is far less likely that technology will be the principal motor transforming the institutions. Nor is there any chance that new technology can compensate for the old economic pressures devaluing the academic profession. In any case, it is up to faculty and students to steer educational technology in a direction that enhances rather than degrades higher education. They must resist attempts to change the very meaning of education to accommodate the limited features and capabilities of the available technology and instead pursue the "art of living with technology" creatively. While it is extremely difficult to resist the main trends of neo-liberal reform, technological change is less armored against pressure from below than other strategies. Students and faculty can vote with their feet on technology where they have little control over the use of low paid part time teachers and highly paid administrators. We can only hope that they will use their power to keep the actual process of learning a human rather than a mechanical activity.

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