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No more teachers, no more schools: information technology and the “deschooled” society

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Abstract

Taking the position that technologies are neither neutral nor apolitical, this paper argues that the rapid introduction of information technology into the classroom currently serves the interests of the private sector rather than the public sector. New kinds of work, new kinds of social arrangements, dictated by the global economy, will require mass conditioning on a scale reminiscent of the industrial revolution. A snapshot of evolving work arrangements is presented along with a discussion of the kind of conditioning which would best serve these new arrangements. The concepts of “virtual schooling” and “deschooling” are explored. This paper suggests that, without interventions to save it, public education as a shared social responsibility will become a casualty of the current pressures to deregulate and disconnect economic interests from geography and a democratically defined set of social responsibilities. A global commitment to full employment and local initiatives towards community empowerment are suggested as necessary interventions. © 1998 Elsevier Science Ltd. All rights reserved.

“Do artifacts have politics?” asks Langdon Winner in *Daedalus: Journal of the American Academy of Arts and Science* [1]. In exploring this question he provides examples of how “scientific knowledge, technological invention and corporate profit reinforce each other in deeply entrenched patterns that bear the unmistakable stamp of political and economic power.” He illustrates how the electronic tomato harvester, one of the products of agricultural research which, over many decades, had favoured the interests of large agribusiness concerns, benefited very large growers to the detriment of rural agricultural communities. “By the late 1970s, an estimated 32 thousand jobs in the tomato industry had been eliminated as a direct consequence of mechanization.” The harvesters, he says, were “not merely a symbol of a social order that rewards some while punishing others; [they were] in a true sense an embodiment of that order.”

There are many examples available to show that technological developments are not accidental products of a benevolent and disinterested science. Typically, technologies are first developed to maintain and extend the interests of the powerful. The horse, as an agricultural tool, developed quite independently, and considerably later, than the horse as an instrument of war. The printing press, from the 1500s until the end of the eighteenth century, produced books for the aristocracy, clergy and academics—already wealthy and powerful groups. Its full democratizing effects were not realized until paper made out of wood pulp reduced the cost of books and compulsory education produced a more generally literate society. In New York City, in the 1930s, some bridges were built with low clearances to prohibit the passage of buses. The intention was to keep the poor, often black, from certain parks and residential areas by favouring the use of automobiles over mass transportation. They were monuments to the ability of technology to serve the needs of the haves in society. A recent example of this phenomenon is the Internet, first created by the U.S. Department of Defense as protection from communications breakdown in the event of nuclear attack, now the latest vehicle for the commercial delivery of culture and the faint hope of the middle class seeking protection from economic breakdown in the transition to the “information age.”

Whether in regard to facilitating tomato harvesting or distance education, popular rhetoric equates technological innovation with progress. But it did not equal progress for the displaced tomato harvesters or the poor in New York City. It is, as yet, undetermined whether new developments in information technology will equal progress for middle class America, let alone the already poor and dispossessed. Like the tomato harvesters, information technology brings with it a new social order. Who will be dispossessed and who will be rewarded in this emerging social/economic landscape? As many critical thinkers have pointed out, a balance is struck only for small selected groups in society.

Technology has never been neutral, nor apolitical. New information technologies facilitate the free movement of capital around the world. This paper argues that shared social responsibilities like public education could fall victim to the pressure to deregulate and disconnect work from geography and corporate interests from responsibility to real communities. It also argues that the pressure to integrate information technology into the classroom serves to accommodate economic interests seeking mobility and not necessarily the public interest seeking stability. A community-based, rather than a school-based, model for the introduction of information technology is suggested as a socially responsible alternative. At the global level, employment policies which put technology to the service of mankind rather than the reverse are called for.

1. Communications and education: the backbone of empires

“The press has its evil eye in every house, and its black hand in every appointment in the state, from a president to a postman...” [2] observed Charles Dickens on his trip to America in 1842. He was commenting on the blatant use of newspapers by

American press barons to create and maintain a supportive political and economic power structure. Canadian economist and historian, Harold Innis, has mapped the connections between the rise and fall of empires and communications. He argues that order and stability in empires depends on a balance between the conflicting biases of communications—the time-related bias favouring the religious (in broad terms) organization of society and the space-related bias favouring political organization. An imbalance in these biases leads to monopolies of knowledge and the rise of another media to right the balance. “The dominance of parchment in the West gave a bias towards ecclesiastical organization, which led to the introduction of paper with its bias toward political organization” [3], he explains. “Currently, in the United States, the dominance of the newspaper [has] led to large-scale development of monopolies of communication in terms of space and implied a neglect of time” [3].

Innis saw the introduction of radio as an attempt to restore the balance in communications and interpreted the growth of planning and the socialized state as a reflection of that restoration. The instant world created by electronic communications less than 50 years after his death presents a monopoly of communication on a global scale that does not appear to be headed towards further socialization of the state. Both the state and the socialization programs are struggling for survival in the face of global commercial interests with “time” on their side.

Barnet and Cavanaugh argue, in “Global Dreams”, that the empires of the twenty-first century will be global and controlled through electronic communications—their most strategic resource [4]. The battles for control of these empires are currently being waged through international trade agreements being negotiated at the super-government levels,¹ deregulating and disconnecting communications from the control of nation-states. In the latest and most audacious development, a treaty known as the “Multilateral Agreement on Investment” (MAI) under negotiation behind closed doors at the Paris headquarters of the Organization for Economic Cooperation and Development (OECD) would “grant transnational corporations (TNCs) the unrestricted ‘right’ and ‘freedom’ to buy, sell, and move their operations whenever and wherever they want around the world, unfettered by government intervention or regulation” [5]. The multinational communications and entertainment industries, already colonizing the global mind despite government regulation, have been among the most active promoters of complete deregulation. According to U.S. political analyst Thomas Ferguson, they have been generously ensuring the allegiance of sympathetic politicians. “The best-kept secret of the [November 1996] election is that it was the telecommunications industry that rescued Bill Clinton,” says Ferguson [6].

Innis additionally observed a connection between communications and education. “The application of [steam] power to the communications industries after 1800 hastened the spread of compulsory education and the rise of newspapers...” [7]. The newspaper empires supported compulsory education as the extent of their power and influence was dependent on a generally literate public. Considering the strategic

¹ For example, the World Trade Organization (WTO), the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD), the World Bank.

importance of communications to the empires of the twenty-first century, the current pressures to deliver education electronically, an agenda overwhelmingly supported by the telecommunications and information technology industries, complies with this pattern. As Winner points out, a new social order is emerging through the new technologies. As they have in the past, those who would control empires will certainly try to mould the institutions within those empires to support their own needs.

2. Creating the public

The life of a community, before the industrial revolution, was organized around agricultural activities and cottage industries. Work habits did not suit the needs of factories, which needed workers who could fit into rigid schedules and work patterns.

For all the bone-crushing labor demanded of the agricultural worker or the cottage weaver, the traditional rhythms of exertion and play were a world removed from the behavioural demands of industrial production. Work patterns were irregular, alternating between intense effort and idleness. Most work activities emanated from the home, and the distractions of the family, the taverns, and the social web of the community limited any undivided commitment to work [8],

says Shoshana Zuboff, a noted Harvard social scientist, in her study of technology and the changing nature of work and power. She describes some of the elaborate schemes put in place by the early industrialists “to get the human body to remain in one place, pay attention and perform consistently over a fixed period of time” [8].

Early schools emphasized conditioning. They taught cleanliness, obedience, regularity and industry as much as basic reading and writing. Preparing efficient and effective workers for the factory assembly line was a primary objective. In newspaper reports and fund-raising drives for the Infant, Lancasterian, and Sunday schools (of the early nineteenth century) “what was emphasized time and time again was not what the children learned but their clean and orderly appearance, the precision with which they marched into and out of school and classroom, the readiness with which they obeyed their teachers... the habits of industry, of regularity, and of obedience which they imbibed” [9]. Indeed, over the next 200 years, these conditioning goals were realized, to the point that in the developed world, social and economic lives are lived within them.

But social and economic patterns established over the last 200 years are changing rapidly. All current assumptions about work places, work tools, work schedules, the very nature of employment itself are being challenged. In this climate, it is not surprising that those at the forefront of change have become much more vocal about their expectations for the education system. The Information Technology Association of Canada (ITAC), a lobby group representing 450 telecommunications and computer hardware and software industries, states that “a renewed emphasis in education on mathematics, science and technologies related to computers, telecommunications, lasers, robotics and micro-electronics generally will be essential to the schools of

the future. A new learning paradigm to reflect the need of the future economy is needed” [10].

Promoters of this new learning paradigm have a well-tuned sense of self-interest when demanding a labour pool schooled in the basics of the new information tools as well as new behaviours to support new working relationships.

What we are left with is curricula that seems effective in getting people habituated to dealing with computers: typing on keyboards in response to messages on a screen, working without the physical presence of other humans and thinking in ways that computers (today) require. This is not too different from early public education’s function of socializing students in preparation for factory labor [11]

remarks Howard Besser, who suggests that the current education reform movement continues the patterns established in the middle of the last century, with the demands of the private sector dominating the agenda.

Despite the confident stance of organizations such as ITAC, “the needs of the future economy” are not, as yet, established. Economist Peter Drucker believes that only 30% of workers in the future will be part of the so-called “knowledge worker” class. “The productivity of the non-knowledge services worker will be the social challenge of the knowledge society” he says. Determining what kind of work these people will do and how they will be compensated constitutes more than a social change. “It is a change in the human condition” says Drucker. “What it means—what are the values, the commitments, the problems, of the new society—we do not know. But we do know that much will be different” [12]. Clearly it is not yet time to discard the experience of the last 200 years and retool an entire institution before any clear ideas have emerged about the nature of life and work in the twenty-first century.

Over the last 200 years, public education has become the primary vehicle for the transference of national narratives, of humanistic and of democratic values [13]. “The fundamental goal of education is the development of the intellectual, aesthetic, physical, emotional and ethical capacities of individuals... Education programs must be designed to prepare students to become responsible members of society” [14], says the Canadian Teachers’ Federation. Do these ideals have a place in the new globalized economy? If public education “creates” a public, as Neil Postman has said [13], what do current economic trends say about the kind of public that might be needed to serve this economy?

3. Life in the knowledge age: the obedient man

It will enhance leisure time and enrich culture by expanding the distribution of information. It will help relieve pressures on urban areas by enabling individuals to work from home or remote-site offices. It will relieve pressure on natural resources because increasing numbers of products will be able to take the form of bits rather than of manufactured goods. It will give us more control over our

lives and allow experiences and products to be custom tailored to our interests. Citizens of the information society will enjoy new opportunities for productivity, learning and entertainment. Countries that move boldly and in concert with each other will enjoy economic rewards. Whole new markets will emerge, and myriad new opportunities for employment will be created [15] (p. 250)

says Bill Gates in “The Road Ahead”, predicting a rosy future in the new world evolving around information technology tools.

More serious analysts of world culture shifts express less joyful sentiments.

I have seen the 21st century, and it looks like an obedient era... Having recently returned from a long stint in Asia, I have gained a view of how Canadians will behave in the near future, and it is a view from the grindstone. Led by Asia, we are inching across a new threshold of obeisance in which the goals of personal realization are voluntarily eroded in favour of the bottom-line imperatives of impersonal organizations... In one fleeting century, man has changed from an unpredictable assembly of tribes into a single servitor species governed by the eleventh commandment—honour thy employer. A man is what a man does, and if all he does is work, then he is slave to someone or something. Taxable but reduced in imagination and personal responsibility, he becomes the Obedient Man [16]

says David Kendall, drawing on personal experience with Asian cultures and the extensive work of Stanley Milgram on obedience and control [17].

Kendall argues that globalization and the elimination of tariff barriers have brought somewhat lower prices to all but at an enormous social cost. Death by deep discounting could be the penalty for western societies which allow the virus called “big box marketing” to run rampant in their communities. This virus chokes local economies. It replaces local merchants with warehouse facilities, owned and controlled by multinational corporations. These corporations trade only in goods produced for mass markets, buying centrally, from distant suppliers. Money that would flow into the local economy flows into distant coffers instead. Ed Mayo, in “The New Internationalist”, points out that, in self-reliant local economies, money may change hands up to eight times before it leaks away. “If you eat at McDonald’s, only one quarter of the money you spend stays in the local area” says Mayo [18]. Mega-merchants like Bill Gates unashamedly applaud the trend to disconnect buyers from local sellers and suppliers. He notes that getting rid of the middle man has allowed “mass merchants such as Wal-Mart, Price-Costco, and other companies with particularly efficient consumer-merchandising approaches [to put the pressure] on more traditional stores [to slash prices]. When Wal-Mart moves into a rural area, the merchants in the local towns feel the pinch. Some survive, some do not, but the net economic effect on the region is modest” [15] (p. 254). Destroying local economies can hardly be considered modest. Caught in an economic catch-22, citizens are increasingly forced to feed the very virus which attacks them.

Bill Gates suggests that information technology will equal progress by providing

enhanced leisure time and enriched culture for all. But the reality is that labour legislation won over 100 years of conflict and dispute is being stripped away to accommodate globalization. In Ontario, the right wing conservative government has rescinded legislation prohibiting the use of replacement workers in the event of a strike, is considering lengthening the workweek, eliminating overtime limits and reducing severance pay for laid-off workers. In the U.S., Manpower, Inc. thrives, lending its human bank of job seekers out as casual part-time workers—the fastest growing sector of the labor force. For all the rhetoric about economic growth, the income gap between the rich and the poor is widening around the world [19]. Knowledge workers? Despite the cries of desperate skill shortages coming from business leaders, the reality is that there is an abundant supply of knowledgeable workers around the globe waiting for opportunities to step into hi-tech jobs. “If you are hiring college types, there isn’t a lot of difference in quality across nations... There’s a lot of pent-up talent out there” [20], says a senior vice president for a Dallas-based information technology management company.

But for many, the bottom line is not low paying, casual jobs. The bottom line is no jobs at all. The Industrial Revolution, even in its darkest moments, was labour intensive. Labour, once organized, could exercise power to negotiate improved social and employment conditions. The current revolution, besides providing access to a global pool of workers, rather than a local one (making such organization almost impossible), is shedding workers at an ever-increasing rate. In Canada, in March 1997, Statistics Canada reported that despite the fact industry was operating at 85% of capacity at the end of 1996, 38,000 full-time jobs were lost in February 1997 [21]. The jobless rate for Canadian youth has not been less than 15% since 1990. A new phrase, “jobless growth” has crept into the vernacular. The problems are not unique to North America. Corporations seeking the lowest cost production factors build new factories abroad which are often far more labour efficient than their counterparts in the company’s home country, employing far fewer to produce the same products. In its report, *World Employment 1996/97*, the International Labour Organization calls the global employment situation grim. “Nearly one billion people around the world, approximately 30% of the entire global work force, are unemployed or underemployed in industrialized and developing countries alike” [22] (p. 4). With such a global oversupply of labour, will fear rather than free-thinking dominate the knowledge age? Is the rhetoric of co-operation and partnership really that of obedience?

Recently, Canadian and American students were berated for “losing” to Singapore in an international evaluation exercise known as the Third International Maths and Science Test. “Of course we lost” says Kendall “mathematics and sciences are the currency of capitalism, but Canadian students also study art, literature, languages and physical education. Our curriculum aims at producing well-rounded citizens who can think and act for themselves—the antidote to obedience” [16].

In discussions about educational objectives, humanistic and social objectives have been eclipsed by the clamour to integrate technological tools into the classroom—to retool education as industry has been retooled—to meet the needs of mobile capital

in a mobile economy. The future for public education in this scenario does not look bright.

School's Out

No more pencils, no more books

*No more teachers' dirty looks.*²

Assisted by politicians and promoted by powerful communications and entertainment industries,³ the delivery of education has now become inextricably bound up with a dazzling distraction called the "Information Highway." In January 1994, U.S. vice-president Al Gore challenged business leaders to connect all schools, hospitals and libraries to the Information Highway by the year 2000. But the speech was not about schools, hospitals or libraries. It was about competition between the telephone and cable industries and about the Clinton administration's intentions to "clear from the road the wreckage of outdated regulations and allow a free-flowing traffic of ideas and commerce for the benefit of all Americans" [24]. At the same time, Industry Canada, through its SchoolNet program, launched a similar campaign. Recently the target date was set back to 1998 in a cheeky attempt to "beat" the U.S. to the "finish line."

Electronic connectedness has assumed a leading role in reform agendas around the world. Japan plans to install 900,000 network-equipped PCs in schools by the year 2000; Germany has a three-year "Schools on the network" project; Denmark plans to put all schools on-line by the year 2000; Finland has an "Education, training and research in the information society" strategy; the UK has initiated a "Superhighway in education" plan [25].

The enormous and unsupportable cost to the public purse of using hi-tech tools, which have yet to prove themselves in terms of efficiency or effectiveness, to deliver educational programs are ignored [26]. The rhetoric of cooperation is invoked, while school-business partnerships are encouraged as a funding model. Severe financial cutbacks lead to fewer staff and fewer traditional resources, forcing schools deeper and deeper into the pockets of the private sector. Radio, film, tv and cable were all hailed in the past as tools which would revolutionize education. The folly of these claims was recognized before every classroom was turned into a Disney-sponsored production site. This time, however, when the cure-all claims for new technologies turn out to be nothing but "silicon snake-oil" [27] there may be no classroom to go back to.

Indeed, connecting schools may only be an intermediate step. Some are already happily predicting the deschooling of society altogether. "What's the point of having schools at all? There isn't any" [28] (p. 55) says would-be educational reformer, Lewis Perelman in his book about "removing altogether the increasingly costly bar-

² Children's rhyme usually recited at the beginning of the summer vacation.

³ For an in-depth discussion of U.S. and Canadian politics surrounding the agenda to connect all schools to the internet, please see Ref. [23].

rier schooling poses for economic and social progress” [28] (p. 7)—a barrier, to be sure, for global corporations seeking the most for the least with respect to the various costs associated with production.

Perelman’s demolition version of education reform was not too radical for the U.S. western governors who met in Fall 1995 seeking ways around the barriers presented by “the high costs of traditional educational practices and by outdated institutional and public policies” [29]. The governors set in motion a plan for a market-oriented virtual university which would “better link educational and business opportunities by ensuring that state investments in and use of information technology contribute to a technology-rich environment within which private industry can function and on which it can depend.” In other words, public investment in education should, first and foremost, serve the needs of the private sector. Canadian writer John Ralston Saul notes that this is an increasingly common line of thought. “We have allowed ourselves to be convinced by our own elites that the democratic system is a secondary product of the free market system” [30].

Deinstitutionalizing education is also a goal promoted by various members of the education sector. Linda Harasim, leader of the Canadian government-funded Telelearning Network, which connects 125 researchers in 28 universities, says

The result of our research will be a radically different method of delivering in-class and workplace learning. Its effect will enhance current teaching tools. The crumbling walls associated with traditional bricks-and-mortar institutions will mean flexible learning at home and new access for working Canadians in non-traditional formats [31].

Harasim’s own Telelearning project, an educational product called Virtual-U, is a specially designed classroom interface which will enable tomorrow’s student to choose their own courses, choose their own locations, and choose their own learning styles. Whether such initiatives will ultimately support the public or the private interest is still an open question.

It is interesting to note just how often the idea of deschooling is presented as a good idea in educational literature. A recent article in the NASSP Bulletin (National Association of Secondary School Principals) called “The degathering of society: implications for technology and educator” cheerfully presents an educational technofuture that only a robot could love. Peter Martorella, a professor of curriculum and instruction, maintains that “society has begun to reverse a hallmark demographic trend... from a ‘gathering’ to a ‘degathering’ society... accelerated by the desire for convenience, saving time, and reducing the increasing costs associated with gathering (e.g., those related to travel, buildings, maintenance).” In this “degathered” society, “intelligent tutors”—technological agents who learn along with the student about what needs and resources are required, can modify instruction as required. Teacher training programs will prepare teachers to coordinate the efforts of these educational agents. Individualized instruction will also be available, but presumably through two-way videoconferencing equipment since funds to maintain buildings will have long since been diverted. Nevertheless, the reader is assured that

Educational environments would be secure and nurturing. Violent and disruptive students... will be directed to therapeutic and/or punitive agencies [which] would offer technology-based instructional alternatives as well as counselling.... The challenges and opportunities that degathering offers await us [32].

Waiting in the wings of this degathered society are the software giants linked to multi-media producers and to major entertainment conglomerates creating edutainment on demand for the disintermediated school. Echoing Martorella's "intelligent tutor" idea, Bill Gates says

Computers with social interfaces will figure out how to present information so it is customized for the particular user... A student will ask, perhaps orally, "What caused the American Civil War?" His or her computer will reply... the answer will vary depending on the student... The computer will know what information the student has read or watched and will point out connections... and offer appropriate links [15] (p. 195).

Such services may become available, but they will not be free. A widely read tri-weekly internet newsletter called Edupage reports that

Microsoft will develop and distribute three original software programs featuring Mickey Mouse and other Disney characters. The deal signifies Microsoft's intent to make a major splash in the burgeoning home-computer market. Last week Microsoft announced it will create educational software based on Scholastic Inc.'s popular Magic School Bus books [33].

What is it you want to learn from Microsoft software?

What is it you want your children to learn?

Here it is, right at your fingertips. All you have to do is click [34].

Missing in all of these scenarios which disconnect schooling from a particular place is an honest discussion of how these deinstitutionalized education programs will be financed. Microsoft's vision of plug and play, pay as you go modular education is not a public but a private one. A more honest finish line for this jingle might be "All you have to do is pay."

4. Questions on the social agenda

Even Cinderella's fairy godmother placed limits on how long the magic would last. Before Microsoft's gold coach turns into a pumpkin for society and for education, we must ask ourselves what kind of society we wish to create, what kind of public is needed to support it, and how we can use the resources available to us to realize those ends.

A massive “oversupply” of labour, at the disposal of an unregulated “free market” on a global scale and to be used and discarded like yesterday’s newspapers, can only nurture the psychology of fear Kendall describes as the culture of obedience. Retooling the public education system to provide the just-in-time labour pool needed by this economy is not a supportable strategy in the long run—both in terms of its expense and given that supporting deepening inequalities in society is the antithesis of “public” education.

There are alternatives, however, to this giant step backwards into the dark ages of techno-feudalism. Socially responsible policies with respect to mobile capital must become a priority at the global level. The globalization process currently casting its shadows of unemployment and deepening social stratification around the world could, instead, be the route to lifting the yolk of economic misery burdening so much of the world’s population. “[Globalizing] forces have the potential for spurring higher rates of economic growth and job creation and thus higher levels of well-being and social justice,” says the International Labour Organization’s (ILO) Director-General, Michel Hansenne. But they need to be harnessed by the right mix of social and economic policies. Hansenne continues, “Current levels of unemployment make no economic sense and are neither politically nor socially sustainable” [22] (pp. 3–5). The ILO’s second annual World Employment Report suggests that, while labour-market regulations may need reforming to accommodate the new technological environment, deregulation is not the automatic answer. Rather than justifying the unemployment levels with a “jobless growth” rhetoric, the report urges the renewal of the post-WWII international commitment to full employment. “The resources of the global economy must be put to the service of mankind, not the reverse” [22] (p. 3).

The use of technology to deliver education will serve the interests of the already wealthy and powerful unless the larger questions of social justice in the new globalized economy are addressed. This will require that secret meetings at supergovernment levels, slicing the economic pie for the benefit of twenty-first century empire builders, become public meetings of citizens discussing the kind of society this globalized world should and could support. Until then, the only defense is scepticism and resistance to the technological agenda at the school level and citizen activism at the community level, where discussion about the control and use of new technologies should be a priority. Citizen-based models for the use of technology should be encouraged and promoted. Every public project, says Canadian scientist and social activist Ursula Franklin, should be subjected to the following checklist to determine

whether it: (1) promotes justice; (2) restores reciprocity; (3) confers divisible or indivisible benefits; (4) favours people over machines; (5) whether its strategy maximizes gain or minimizes disaster; (6) whether conservation is favoured over waste; and (7), whether the reversible is favoured over the irreversible [35].

Finally, “if all this is too much to remember... remember that education predates high tech,” says Theodore Roszak. “Find out what Bill Gates wants your school to do. Don’t do that” [36].

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