

The Real World of Technology Re-Visited

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I am re-visiting Franklin's real-world of technology to re-hear the fateful words of an oracle.

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I am a child of automation and liberal education. I grew up in Michigan, and my father lost his job to automation in the late 70s. His unemployment led to the breakdown and impoverishment of our family, and I might not have attended postsecondary if it had not been for a full tuition scholarship to Albion College, a small liberal arts college in mid-Michigan. Automation disrupted my early life, but liberal arts gave me my current life.

These personal experiences comprise, what Franklin calls, my *vernacular reality*. The real in the real world of technology is, for Franklin, the experiences of ordinary people in everyday life. The vernacular reality is the reality of "direct action and immediate experience," and this experiential reality is both "private and personal, but it is also common and political" (p. 36).

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Ursula Franklin was a feminist and an experimental physicist at the University of Toronto when she delivered her CBC Massey Lectures in 1989. 30 years ago, Franklin believed she was observing the end of a major historical period. She put it this way, “I think we live in a time in which the social and political upheaval is as great or greater than it was at the time of the Reformation” (p. 11). She metaphorically defined this new era as the house that technology built.

Technology has built the house in which we all live. The house is continually being extended and remodelled. More and more of human life takes place within its walls, so that today there is hardly any human activity that does not occur within this house. . . Compared to people in earlier times, we rarely have a chance to live outside this house. And the house is still changing; it is still being built as well as demolished. (p. 11).

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September 11, 2001 stands out as the date when this historical period came to a convoluted end, and an even more convoluted historical period began. In real and symbolic terms, one part of the house of technology (characterized by urbanization, heavier-than-air flight, skyscraper engineering, and market

capitalism) was demolished as the overall house continued to grow larger and more ornate.

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The first two decades of the 21st century have been characterized by the rise of Google, Amazon, Microsoft, Facebook, Twitter, and surveillance capitalism. It has also been the age of educational technology, seeing the rise of the learning management system, predictive learning analytics, auto-grading, lock-down browsers and contract cheating. More and more of postsecondary teaching now takes place within the walls of the technological house.

I am going concentrate on the room in the house that I am most familiar with as a doctoral candidate at Athabasca University, an instructor in the U of A's online graduate school of library and information studies, and as an educational developer at Medicine Hat College. The room I will focus on is the room of educational technology.

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In the opening session, Charlie mentioned they chose information systems rather than information technology for the name of their academic program. That is interesting because Franklin defines technology as a system. Franklin defines *technology as practice* as a system that entails “organization, procedures, symbols,

new words, equations, and most of all, a mindset” (p. 12). Hashtag, courseware, computer-based assessment, and polysynchronous delivery are part of an emerging vocabulary, but it is the mindset Franklin most concentrates her attention upon. Technology as practice, for Franklin, is not a way of doing something; technology is not just a tool. Rather, technology cannot be separated from culture, defined as “a set of socially accepted practices and values.” Franklin says technology “includes structures as well as the act of structuring.” And it is the impact of the structuring act of automation that may be neglected if attention is just focused on the structures of automation, such as algorithms and autonomous cars.

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Franklin suggests it is difficult to detect and uncover this structuring mindset because our language is problematic.

Our language itself is poorly suited to describe the complexity of technological interactions, she says. The interconnectedness of many of those processes, the fact that they are so complexly interrelated, defies our normal push-me-pull you, cause-and-consequence metaphors. How does one speak about something that is both fish and water, means as well as end? ...I think it's important to realize that technology defined as *practice* shows us the deep cultural link of technology, and it saves us from thinking that

technology is the icing on the cake. Technology is part of the cake itself (pp. 14-17).

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And Franklin stresses, “one has to keep in mind how much the technology of doing something defines the activity itself, and, by doing so, precludes the emergence of other ways of doing “it”, whatever “it” might be” (p. 17). This is a central part of her thought, and when applied to teaching, technology in education is not something we add onto teaching like additive manufacturing. It is something that unavoidably changes the nature of teaching itself.

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Cathy Davidson, in *The New Education* provides this anecdote for how technology changes the act of teaching. In 1837, when a geometry professor at Yale introduced the radical new technology of the blackboard, his students felt this demeaned their abilities at rote memorization and mental calculation. The students rioted. Yale stuck by the professor. Thirty students were suspended and threatened with expulsion if they did not apologize. Contrite, they eventually returned, and were reinstated to good standing. The chalkboards stayed.

Davidson writes, The Yale students weren't entirely wrong in their anxiety about those chalkboards. What they portended was a new relationship between intellect and industrialization that was about to turn higher education on its head.

The technology redefines the activity itself and the Age of Automation portends a new relationship between human beings and their environment, human beings and one another, and human beings with their machines. Automation will transform the teaching and learning process, and here I am using the word transformation in a neutral sense.

Franklin cautions against the dangers of an overly enthusiastic embrace of the technological mindset by suggesting “many new technologies and their products have entered the public sphere in a cloud of hope, imagination and anticipation” (p. 102) without adequate consideration to how new technologies may reinforce or destroy social structures “in ways that are neither foreseen nor foreseeable.”

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Again, looking just at teaching, Franklin (1990) describes two major types of technology, holistic and prescriptive. Holistic technologies can best be understood as artisanal technologies, where the skilled craftsperson controls the production process from start to finish. Franklin sees teaching as a holistic technology.

All of us who teach know that the magic moment when teaching turns into learning depends on the human setting and the quality and example of the teacher – on factors that relate to a general environment of growth rather than on any design parameters set down externally. If there ever was a growth process, if there ever was a holistic process, a process that cannot be divided into rigid predetermined steps, it is education (Franklin, 1990, p. 29).

Sounds good. Inspirational. But Franklin is wrong, and she knows she is wrong.

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Even though Franklin describes teaching as the best example of a holistic technology, she recognizes that “schools and universities operate according to a production model.” Production is facilitated through a process now being described as unbundling.

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Very simply, unbundling means the process of dis-integrating the processes of educational provision, often using external actors. Randy Bass out of Georgetown is not a fan of unbundling, but he outlines the argument for unbundling. Students who only want targeted opportunities can get access to them without paying excess costs; unbundling suggests students can access courses that

only meet their direct needs and goals, especially for work and career preparation. Student needs can be best met by a market solution where students can purchase low-budget, cafeteria-style education. An unbundled education allows students to take courses from multiple providers. The educational institution can be unbundled; the academic program can be unbundled, and the process of teaching can be unbundled.

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An unbundled education provides students “options to make colleges and universities work for them” (Contact North, 2016, p. 2), and the “widely accepted statements among learning futurists,” according to Ontario’s Contact North, suggest learning will no longer be defined by time or place. Learners will be able to create “learning playlists” that reflect their goals in self-directed, personalized learning experiences where courses become less important than diverse and new forms of credentials.

This unbundling is what Canadian Tony Bates (2015) refers to as the “disaggregation of services” (sec.10.10.3), and this disaggregation of teaching into a prescriptive technology is an important aspect of achieving flexibility and scale, and in doing so, scale is transformed from a measure of size to a measure of merit. Bigger is always better, and it is now possible to disaggregate course development

from delivery, student assessment from delivery, and certification from assessment (Contact North, 2016).

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When a process, such as teaching, moves from being a holistic technology to a production technology, there is a shift in power from the teacher to the administrator. Accompanying this shift in power and control, there is increased focus on designing to minimize disaster. Increased control and decreased risk is what Franklin calls *designs for compliance*, and I think it is possible to see performance-based funding as an aspect of this design for compliance.

Franklin argues that one of the risks when a technology moves from a holistic to prescriptive, is that the technology may stagnate, and further improvements may become cosmetic, marginal, and routinized. Increased control makes creativity and innovation less likely. This, I believe, accurately describes what is happening with the Learning Management System. Last year at the World Conference of Online Learning, I heard the VP of Blackboard say to the audience, “you are paying too much for a repository.” There is no better way to describe the implementation of a technology as cosmetic, marginal and routinized than to describe the LMS as a repository. As Franklin suggests, “the mechanical bride has

become a demanding but essential business partner” – a fitting description for many faculty attitudes towards the LMS.

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But these marginal enhancements occur precisely at the time when technology promises freedom. Technology always promises freedom. I collect articles like this, and rarely a day goes by where an article like these doesn't appear. I quote them because it is a discourse that I am sure will feel familiar to you:

Automation's impact in education will continue to augment the way staff and faculty work and improve how students engage and learn. Manual and repeatable activities have weighed down this system for decades, but they have met their match with automation. Once fully operational, faculty will be able use automation to take the busy work out of their jobs, freeing up time for meaningful student interactions in the classroom.

Sure, it takes a lot of time and money to automate an entire profession. But after the initial development costs, administrators wouldn't need to worry about paying digital teachers. This saved money could then be used to pay for the needed updates to education facilities. Digital teachers wouldn't need days off and would never be late for work. Administrators could upload any

changes to curricula across an entire fleet of AI instructors, and the systems would never make mistakes. If programmed correctly, they also wouldn't show any biases toward students based on gender, race, socio-economic status, personality preference, or other consideration.

Articles such as these would be easy enough to laugh off if they didn't come, occasionally, from places like the World Economic Forum. These constructed realities, these cultural myths, carry their own weight, and these quotes are illustrative of several of Franklin's observations about the real world of technology.

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The first is that Franklin suggests that many technological systems, when examined for context and overall design, are basically anti-people. People are seen as sources of problems (they call in sick, they cost money, and they are biased) while technology is seen as a source of solutions . . . Franklin muses, the notion that maybe technology constitutes a source of problems and grievances and people might be looked upon as a source of solutions has very rarely entered public policy or even public consciousness. (1990, p. 76)

Understanding that technology is an anti-human force falsely promising human liberation, while containing the potential to destroy social structures, is the essence of understanding educational technology as an ideology.

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As Kim and Malroney wrote last week,

The innovation imperative has emerged as one of the dominant narratives in higher education.

The accepted wisdom is that higher education needs to change and that incremental advances will be inadequate to the challenges that we face.

Attend any conference or convening that is related to the educational enterprise of universities, and you will hear about how the traditional system of residential courses built on seat time and the credit hour no longer meets the needs of an increasingly adult and working student population. The conversation will quickly move to unsustainable student debt and the mismatch between employer needs and institutional offerings. (Joyce and Stephen's presentation gave us a taste of that.)

Schools are told that they need to go online, go to scale and unbundle their offerings. The dominant learning innovation playbook contains elements of new delivery mechanisms, new partnerships, and new markets.

What is often left out of the learning innovation narrative is a discussion of the role of the faculty.

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Franklin makes a simple but important observation that “most people live and work under conditions that are not structured for their well-being.”

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That helps us appreciate, I hope, the tremendous privilege of being able to be part of events like this. Most people do not live and work in conditions that are good for their well-being, and this is increasingly true of postsecondary education. In October 2018, Pasma and Shaker offered the first-ever snapshot of how many university faculty appointments are precarious jobs.

Overall, their data suggests that while public funding cuts may have played a role in universities' reliance on contract faculty, austerity alone cannot explain this decision, since rates of contract appointments vary so much between universities in similar circumstances. The trend also does not appear to be a result of changing market demand for certain disciplines, nor, on the whole, the result of personal choices by tenured faculty or contract faculty. Rather, reliance on contract faculty appears to be largely driven by choices made by university administrations, raising questions about the role of universities as employer and educator. The heavy

reliance on contract faculty in Canadian universities is a structural issue, not a temporary approach to hiring.

Pasma and Shaker's data reveals that more than half of all faculty appointments in Canada are short-term, contract appointments. Even without automation, part-time faculty are becoming digital nomads, cognitive capital, and most of them live and work in situations that are not designed for their well-being.

They are also often left out of planning processes.

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Franklin spends considerable time discussing the role of planning as a technology of control. She says, "There are those who plan and those who conform to what was arranged beforehand. It is much more fun to plan, she writes, than it is to be subjected to the plans made by others. The degree of effectiveness of participation by the plannees in long-term planning operations seems to me a true measure of democracy in the real world of technology."

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Keeping this observation in mind, you can perhaps appreciate the beauty and importance of MRU's academic plan. Over the past year, I have read over 50 academic plans. It is a peculiar type of self-imposed torture. Here is the most unique and robust expression of the importance of and involvement of contract

faculty in Canada. What we see in MRU's academic plan is that contract faculty are specifically mentioned as being involved in the planning process. Part-time faculty are critical to achieving the goals and strategies of the academic plan. To accomplish these goals, MRU will create a statement for the principled treatment of contract faculty, provide resources so they can be successful, including "high-quality professional development" and recognition "regardless of contract status." The MRU academic plan is what Franklin would call a redemptive technology, focused on promoting justice and increasing reciprocity, which is part of the shaping of a new social contract that overcomes the present disenfranchisement of people.

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Franklin suggests that technology tends to displace the human and transform the nature of experience. As technology displaces human muscle and human mind and alleviates the shortcomings of being human, the human is not so much enhanced as much as it is minimized. Franklin says,

As more and more of daily life in the real world of technology is conducted via prescriptive technologies, the logic of technology begins to overpower and displace other types of social logic, such as the logic of compassion or the logic of obligation, the logic of ecological survival or the logic of linkages to nature.

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This is not just polemic. A good example of this overpowering displacement is that when, in 2007 the Oxford Junior Dictionary was published — a sharp-eyed reader noticed that around forty common words concerning nature had been dropped. Apparently they were no longer being used enough by children to merit their place in the dictionary. The list of these “lost words” included *acorn, adder, bluebell, dandelion, fern, heron, kingfisher, newt, otter, and willow*. Among the words taking their place were *attachment, blog, broadband, bullet-point, cut-and-paste, and voice-mail*.

Franklin suggests we need to consider machines and devices as cohabitants on this earth, and in Simon Winchester’s *The Perfectionists*, he writes, “The numbers are beyond incredible. There are now more transistors at work on this planet (some 15 quintillion) than there are leaves on all the trees in the world.” This is the overpowering and displacing effect of technology.

Liberal education is also being overpowered and displaced. Throughout this symposium, it has been suggested that automation and liberal education can play nicely with one another. If they can, it will only be to the extent that liberal education serves the logic of technology. If more examples and events like this cannot be accomplished, Franklin warns that the house that technology built will not be anything more than an unlivable techno-dump. Franklin says, “I have long

subscribed to what I call Franklin's earthworm theory of social change. Social change will not come to us like an avalanche down the mountain. Social change will come through seeds growing in well prepared soil – and it is we, like the earthworms, who prepare the soil.” My fellow worms, let us thank MRU and MHC for preparing the soil.