

The University of the 21st Century: the Will to Technology or the Will to Knowledge?

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Abstract

Over the last two decades the boundaries of higher education and the production of knowledge have been challenged and extended on various fronts, notably, the encroachment of corporate partnership within the academy and maintaining pace with rapidly changing technologies. The implementation of technologies is part of a postmodern condition where there is a blending of the most recent computer technologies with conventional knowledge production. Addressing a surprisingly neglected area of research, this article advances three suggestions. First, that in order to understand the relation of technologies to the production of knowledge it is important to examine how academics themselves perceive this relationship. Second, the presuppositions are conceptualized in terms of language games that are reflective of academic culture. Finally, the above points are linked to a larger claim that academics' perceptions reinforce, rather than eclipse or displace, the legitimating and legitimate position of conventional knowledge production.

Keywords: Lyotard, computer technologies, academic culture, policy, knowledge production

There is somehow a notion that technology can improve the quality of education. It really isn't so. I have to say that technology is a tool, and obviously if you're an artist and you have better tools, you might paint better pictures. But giving someone the tools to draw does not make him an artist (Bruno).

A very postmodern moment that finds the University nearing what may be its end (Lyotard xxv)

Introduction

Over the last few decades the boundaries of the production of knowledge have been challenged and extended on various fronts, notably, the encroachment of corporate partnership within the academy and maintaining pace with rapidly changing technologies. Indeed, the reliance on computer technologies (the so-called CMC or ICTs) for the production of knowledge

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has become an integral aspect of the postmodern condition. Jean-Francois Lyotard defined the term “postmodernism” in a 1979 influential account on the state of knowledge to the higher education council of Quebec. In an addendum to the report, entitled *The Postmodern Condition: A Report on Knowledge*, Lyotard answers the question “what is postmodernism” by declaring that the work of a postmodern writer is “not in principle governed by pre-established rules, and ... cannot be judged according to a determining judgment, by applying familiar categories to the text or to the work...” *The Postmodern Condition* asserts a series of connections between technological development and the production of knowledge. In it, Lyotard describes the “postmodern age” as the historical effect of a shift in the status of knowledge, evident since the 1950s, in which science becomes concerned with “such things as undecidables, the limits of precise control... ‘fracta,’ catastrophes, and pragmatic paradoxes” . This means that knowledge is redefined in terms of paralogy and heterogeneity; in other words, of language games (Lyotard 60).

The postmodern condition casts serious doubts about the relevance of the master narratives of modernism. Particularly, the contrasting metanarratives of emancipation and totalization through the creation and dissemination of scientific knowledge. Incredulity towards these metanarratives simultaneously delegitimizes science and leads to the emergence of other forms of legitimation. Specifically, the principle of efficiency and “little narratives”. The former optimizes performance that transforms science in a knowledge industry. The latter reasserts language games that redefine scientific knowledge as discontinuous, paradoxical, and locally determined. According to Lyotard, these principles have resulted in two things: First, demoralized research scientists and forced the university into a subordinate, functional role in the social system (Lyotard xxiv). Second, this situation entails the demise of the professor, because

“a professor is no more competent than memory bank networks in transmitting established knowledge” (Lyotard 53).

In the modern era, conventional higher education in specific physical locations has been the engine for knowledge production and dissemination. In the postmodern era, by contrast, knowledge production and distribution have expanded beyond the boundaries of the university. To such an extent that knowledge has become ubiquitous justifying terming this historical time, somewhat misleadingly, as the ‘knowledge society’ (Delanty 149-153). More importantly, the ubiquity of knowledge is taken to mean that the position of legitimate authority of conventional knowledge production is being challenged and questioned. There are several problems with this interpretation. First, it assumes that all knowledge is created equal, and secondly it is based on an understanding that confuses access to information with knowledge creation directing us towards the issue of control. The assumption is that in ubiquity the university loses control of knowledge and thus loses its legitimating foundation. Although there is no denying the ubiquity of knowledge, the argument advanced in this article is that this does not necessarily indicate that conventional higher education has lost its legitimation function. On the contrary, despite many changes, including technological, its place is being carved ever deeper. To such an extent that the opposite argument could just as reasonably be made: that the diversification of higher education has the corollary effect of producing hierarchical gradients of education. In this case, the ranking of conventional (face-to-face, in a physical institution) higher education as legitimating and legitimized seems assured. In other words, contrary to discourses of displacement and demise, the diverse forms of education made possible by technology and the postmodern ethos have not yet gained legitimation status (note for example, the insistence on traditional publishing sources

as more valuable for promotion and tenure). The argument in this article² is that this can be explained not so much as an issue of control of knowledge but rather of academic culture. Based on the basic premises of existing definitions of academic culture in terms of academic freedom, autonomy and collegiality³; but also departing from these, academic culture is defined as a set of practices that follow from the beliefs in a conception of teaching as facilitating student learning and student learning as conceptual growth, in higher education's primary role as developing critical thinkers and citizens, in the role of academics as knowledge producers and intellectuals, in a conception of knowledge that is constructivist. This definition insinuates language games.

In this paper, I dare to address, not what is the condition of knowledge production four decades later, rather a more modest goal of providing an historical snapshot of how academics have perceived the implementation of university-wide technological changes in their everyday work, at a time when the use of technologies is institutionalized, that is mandated by the institution, in effect requiring all academics (both professors and students) to use computers. Specifically, email and online course platforms. The use of email was mandated as the official way of communicating within institutions, and the licensing of Web CT by the institutions automatically integrates all courses into the platform. In this article, I look at how academics perceive the implementation of these technologies. These perceptions are organized in terms of discourses that explain the adoption of and adaptation to the implementation of technologies. The discourses, in turn, are reflective of academic culture. In the analysis, the discourses on technological use in higher education are seen as language games that, departing from Lyotard's fears, I read as serving to legitimize and strengthen the knowledge produced and transmitted at a

² This article is based on research conducted during my doctoral thesis research. I conducted in-depth interviews during the Fall and Winter semesters of the 2002-2003 academic year at two universities in the city of Montreal, Canada. The quotes in this article were chosen as representative of the points being made by most respondents. Pseudonyms are used to identify respondents.

³ See for example: William Bergquist; Tony Becher, Pierre Bourdieu and William Tierney

conventional higher education institution. Furthermore, the above points are linked to a broader suggestion that academics' language games are part of a larger academic culture that reinforces, rather than eclipses or displaces, the position of authority of conventional knowledge production.

This historical focus on these technologies is of twofold relevance. Not only does it mark the beginning of institutionalization, but these are also the technologies that continue to be the most used in teaching and scholarship having become completely normalized. Despite the availability of a variety of more recent technologies (Wikis, blogs, Twitter, Facebook) they have yet to become normalized. Second, understanding academics' perceptions of earlier technological implementation will inform a deeper understanding of the relationship of technologies to education more generally.

The discourses

Academics advance two discourses that they perceive frame the implementation of technologies in academic work: the institutional and academic discourse. The notion of discourse is used here as a framework not primarily for how academics are conceptualized within technology policies and initiatives but how they conceptualize themselves.

Institutional Discourse: The Will to Technology

The institutional discourse is defined as the perceptions concerning the mandated use of various computer technologies in academic work. In Canada, the use of particular technologies is being mandated by education technology policies and initiatives promoted or implemented at the national, provincial and institutional levels.

At the national level, mirroring changes in the industrial market place the integration of technology in education was aided at a national level by recommendations of the 1997 Information Highway Advisory Council (IHAC) Report, *Preparing Canada for a Digital World* commissioned by Industry Canada. The report reiterated the centrality of lifelong learning to the

Information Highway, focusing on the need for policy research mandated to the Council of Ministers of Education of Canada (CMEC) in cooperation with Industry Canada and the Government of Canada, through its Human Resources Development (HRDC) unit. Cooperation between the government, industry and education regarding technological integration was solidly established in the early nineties with the creation of the industry-lead consortium Canadian Network for the Advancement of Research, Industry and Education (CANARIE). Furthering the cooperation, the Government of Canada, through the HDRC department, created the Office of Learning Technologies (OLT) and its Telelearning Network of Centers of Excellence. The CMEC and Industry Canada have established periodical advisory committees to study and recommend ways to use new technology in higher education and learning. According to respondents, the rhetoric of technologically enabled ‘synergies’ and ‘economies of scale’, although seductive, is driven primarily by economic rather than educational factors.

At the provincial level, the drive towards technological implementation in higher education is further propelled with initiatives. While Canadian Provinces vary in their specific educational technology policies⁴, they share similar definitions of technologically mediated learning. In existing and proposed frameworks for technological integration in universities, online learning refers to both those instances where technologies are used as a complement to face-to-face learning, and where programs or courses are offered completely online. Frameworks also provide definitions of ‘learner-centered’ as focusing on meeting the learning and developmental needs of the learners it serves, and of ‘open’ learning as referring to an instructional system in which the many facets of the learning process are under the control of the individual learner, who decides what and how to study, under tutor

⁴ For a detailed description of the technologically related policies and initiatives in the Canadian provinces see Lewis, Massey and Smith 2001 book *the Tower Under Siege*, particularly Chapter 4, pp.46-88.

guidance.

Federal and provincial policies justify the promotion of technologies as a way to overcome several perceived or actual problems with higher education; notably, budget cuts, public criticism of higher education, and competitiveness from online education.

Respondents point out that what needs to be emphasized is that policies that mandate the use of technologies tend to be driven by economic and political factors within a climate of 'cooperation' between the government, industry and education. Furthermore and significantly, the notion of cooperation, although noble, signals a tendency towards the corporatization of education, which directly speaks to academic culture.

Finally, educational technology policies and initiatives are also being implemented at the institutional level. Enacted by designated units of the central administration of the universities, which in addition to the traditional role of loaning of equipment and the maintenance of facilities in the classrooms and television production centres, a division within these units has been created that deals specifically with computer technologies in education, under the umbrella of 'Learning Technologies'. These divisions are the central institutional facilities for the use of technologies in education and course-ware production, including the Web CT⁵ server, PowerPoint presentations, and more recently the use of blogs, wikis, twits, and social media. The mandate of these divisions is firstly, to make decisions on the use of computers by both professors and students in terms of what a personal computer will contain and how it will be used. Secondly, there are software issues, which involve decisions about institutional wide enterprise systems, and associated provision of support. These divisions report directly to the central administration and are the decision makers in matters concerning technological implementation at the institutions. That this

⁵ For details on this platform see: www.webct.com

centralization of decision-making is a source of contestation for respondents highlights the importance of academic culture.

The administrative units of the Universities studied have purchased the license for the use of the Web CT server as the institutional software or standard platform for 'online learning'. Besides features that relate to teaching: reading materials, making information available, and discussion groups, the Web CT server also allows for the integration of the administrative aspects of academic work, in other words it allows for a high degree of technical convergence. Technical convergence allows for the possibility of tracking the students' marks and sending them to the student information system. Consequently, as student enrolment change when courses are added or dropped, the professors' lists automatically change. This integration of the Web CT server with the student information services is highly propitious to the centralization of decision making. The latest version of Web CT system was adopted, precisely because of its capabilities of convergence between separate information systems. Indeed, the original intent behind creating the server was course management. In other words, the adoption of the server was driven by technical, not pedagogical, concerns, namely that it was the most robust while offering a large number of tools.

The licensing of the platform was followed by policies and initiatives mandating its use. Among them, the submission of grades through the Web CT server; the requirement that professors migrate the course material they currently have on individual course Web pages to the Web CT server; the Academic Laptop Programme (which offers academic staff (tenured, tenure track, faculty lecturers) the opportunity to apply for a research grant in which the purpose is to propose to use Web CT in one of the courses they are teaching, in exchange for a laptop

computer and associated Microsoft software products⁶); free email access from home for continued use of the Web CT server for those who have participated in the programme; and the Exemplary Course Project (ECP) program that “seeks to encourage and recognize excellence in online courses developed within WebCT”⁷; and the creation of ‘wireless zones’ in university libraries. This is clearly intended to encourage the increased use of laptops by students. Lastly, but certainly not least, the universities instituted an email policy, where “email is now recognized as of the official means of communication between the university and the students”⁸. It should be noted that both professors and students were already using email and the web years before these were institutionalized. This indicates two things. One, that academics are not contesting the use of the technologies, *per se*, and two, that what is problematic is the degree of institutionalization and this is an issue of academic culture. Its institutionalization further contributes to the perception of homogenization of academic practices where every professor and student is required to use the institutional email rather than or in addition to, for example, a Hotmail or Gmail account.

The policy for submission of grades on the Web CT server, for example, is more than a technical two-way data transfer. Importantly, it integrates the administrative element of academic work within the teaching element. Participants were clear that this is a tremendous change from conventional teaching, converging two previously distinct facets of academic work; and that this is radically different from the way teaching has been done in the past where it was largely the professors’ prerogative to develop their own teaching in different ways. This leads to technological uniformity, which reduces rather than augments choices of how to do academic work. That respondents perceive homogeneization and lack of choices as contributing to an

⁶ http://www.mcgill.ca/dp-cio/spp/acad_pc_program/

⁷ Email sent out to instructors

⁸ www.mcgill.ca/email-policy/

undesirable degree of institutionalization speaks to issues of autonomy and academic freedom and underline their continued importance in the production of knowledge.

Respondents comments convincingly posit that the policies and initiatives related to technologies precipitate a potentially undesirable process of institutionalization of scholarship that involves the corporatization of education, the centralization of decision making, and the homogenization of academic practices. They point to several assumptions that contribute to this perception. First, the assumption of cooperation between government, business and education leads to the corporatization of education. In this sense, corporatization means that education is reconfigured within a business model, where professors' and students' interests are confounded with market interests in assuming that using technologies is inherently desirable. Second, the centralization of decision making involves the erasure of academic agency in decisions related to technological implementation in academic work. Finally, the assumption of beneficial technological convergence and convenient choices leads to the homogenization of academic practices. Homogenization involves technological uniformity, leading to identical scholarship practices by academics. For respondents, these define a will to technology that undermines the notion of academic freedom.

Academic Discourse: The Will to Knowledge

The term academic discourse brings together two points. First, the role of academics in integrating technologies in their own work, and second, in the role of technologies in the production of knowledge. These are significant because they underline elements of academic culture that continue to be valued and important for conventional education.

Role of Academics in Integrating Technologies in Academic Work

The role of academics in deciding which technologies to use for their work is an issue of

agency. Agency is conceptualized in terms of the extent to which professors and students perceive that they have input into three areas: the adoption of technologies at the level of the institution; in the nature and amount of institutional support provided; and in the perceived degree of choice in integrating technologies in their work.

First, concerning the input in institutional decision making, academics unanimously point out that they have no input into decisions concerning what technologies should be adopted institutionally and what policies and initiatives should be developed regarding academic work. To paraphrase the words of my respondents, there have been no consultations or requests for input from them in matters technological, except when a professor is invited to be on a committee of sub-committee that deals with technologies. The level of institutional involvement in committees, or sub-committees is therefore related to the degree of agency perceived. As José Luis, a professor in Physics , effectively clarifies,

I think that as an 'ordinary' professor I have had very little input into any policy, because I think its being developed without really a great deal of consultation. It seemed like the way the University absolutely had to go, it was a no-brainer: to be at the vanguard, on the bandwagon.

The importance of this perception of lack of input by academics and what is worthy of note is that these perceptions are reflective of the extent to which centralization of decision making is contradictory to academic culture. Melissa, a professor in Education relates this to collegiality. As she claims,

we talk about a university, it is bottom up because all of us in our own ways have expertise and 'they' in this University at least, were once 'us' and many of them go back to being professors after they finish their terms in office of vice-principal or dean. That ought to facilitate the bottom up and top-down sort of meeting in the middle collegial atmosphere. But that has been, for a number of reasons, including technology, and some less apparent reasons, not the case over the last little while.

Second, regarding the perceived level of input into decisions about the support provided by the institution, academics report with dismay and disenchantment that they do not have any input into the policies and initiatives related to technologies adopted by their institution and in decisions about the institutional support required for using those technologies. This is relevant because it indicates that the value of autonomy continues to be important for academic culture. Institutional support for teaching and learning is provided centrally by units that report directly to the Provost or Chief Information Officer at the universities. Some faculties – those that have the financial means independent of the central administration – offer their own services. The central units provide workshops on how to use the technologies, such as email, Word, PowerPoint, the Web and the Web CT server (as well as more recent technologies such as Wikis, Blogs, Twitter). This support is of a technical nature, and professors emphatically claim that the institutional support provided is not only insufficient but inappropriate. The main concern is that there are a limited number of workshops scheduled, and that these are presented in terms of generalities and without discipline specific context, which is of limited use for many professors who equate the delivery of the workshops with reading an instructional manual. In addition to preferring a localized, discipline specific approach to the provision of support, respondents claim that, in order for technologies to become a useful resource, students and professors need to be educated about better pedagogical practices with the technology.

Insisting that professors are not required to use the specific technologies adopted by the University, Bruno, the director of central unit that makes decisions about what technologies to adopt institution-wide, claims that “faculty are perfectly free to do whatever as long as it fits with the university wide systems”. Regarding the Web CT server, he contends that “it’s not compulsory, there is nothing to say that you can’t use a competing product”. However, he adds

that “there is no support for anything other than Web CT support. The only policy is that [the University] will not support multiple platforms”. On one hand, adopting independent technologies means that the institution will not provide support for those technologies. On the other hand, the institutional support provided reduces the technological choices in terms of teaching and administration. The drive towards uniformity for managerial purposes constrains the pedagogical variation. At the same time, uniformity is understood as necessary because the institutions cannot provide the support for multiple platforms, as they must be able to compete in terms of efficiency with other institutions. The idea of efficiency is clearly measured in economic rather than educational terms, and economic efficiency is driving the decisions being made. The provision of exclusive support for technologies that are adopted by the institution fuels the tendency towards both the corporatization of education and homogenization of academic work, that academic culture is uncomfortable with.

Respondents point out that this is puzzling situation where there is a contradiction inherent in the administration’s mandated use of certain technologies, on one hand, and the limited provision of support, on the other hand. Respondents report that they have developed ways of compensating for the lack of technological support by noting a common, yet understated, practice. Rather than relying on institutional support professors have succumbed to a common practice of buying the technological equipment and software they require with funds from their research grants. Melissas’s comments exemplify the perceptions associated with this practice,

I don’t see the university being very supportive of our use of technology, certainly not a variety of technology. This laptop program is the only computer I have had that was paid for by the university, I don’t know how it is in other faculties, but in our faculty all computers I have I bought out of my research grants and I resent that very much, that I would use my research grant money to support the

university's function.

This common practice of subsidizing technologies used in teaching, which is an institutional function, with funds from research grants, which are provided by agencies outside the universities, is a source of high resentment towards the administration by all professors.

Finally, given that there is no input into the technologies adopted or the support provided for using them, it follows that there is the perception that the level of choice about the specific technologies used is reduced. There is little choice to use email, for example for communication among and between academics. The words of Isabel, a professor in Communication Studies, clearly represent this point, "there is no choice on using email, it is gruelling and it has been an interesting process to try to set certain boundaries where you say 'ok 24 hours is not a bad response time'. I don't have a choice on email and I don't want one either, I think it is a useful practice". Although useful, parameters have to be specified in terms of the extent of its use. Predating the universities' wide email policy, professors have developed their own email policies⁹. Similarly with other technologies. Melissa's example is elucidative, "I have no choice in the technologies I use. I give you a personal example. I am a Mac fan and I had to switch to IBM and clones because of [new integrated computer system: student services, financial services, etc.]¹⁰, which you can't do from Mac". These comments point to the lack of competitive products available, where one particular company's products (software and hardware) completely replaces competitors (such as the use of Microsoft word as replaced other word processing software). This reduction of choices strengthens the tendency towards the corporatization of education whereby academics' choices are reduced to particular commercialized products. Academics also have no choice but to use computer based

⁹ See for example: www.cim.mcgill.ca/~jer.welcome.html

¹⁰ Student information service

technologies as paper versions of documents and forms are being replaced. Specifically, research funding agencies¹¹ applications as well as abstract submission and registration for conferences is done online. This does not augment choices rather it merely substitutes hard copies for online versions, confirming the homogenization of academic practices.

Related to the lack of choice, respondents make another relevant point. That, technological integration has resulted in a steady increase in the amount of tasks that academics have to perform. There is a stark disconnection between the promulgation of technologies as leading to increased choices and the fact that the choices available are actually reduced to more clerical tasks. Respondents report that there has been a subtle but steady downloading of tasks to the user, which entails a clericalization of the academic. As Isaac, a professor in Communication Studies observes,

a good example is the marks, it use to be that you write down the marks, give them to the secretary, now you have to type them in and since they are on your computer why not just submit them yourself. One by one all these changes make sense, but why not fill in the R.A. forms for my students as well? So we spend a lot of time doing that. In essence there has been a clericalization, if you like, turning professors into clerks.

Respondents make a clear distinction between using the technologies to accomplish the pedagogically related functions and the downloading of administrative tasks onto faculty. While the former is less likely to be contested, the acceptance of the latter is more problematic. Most professors do not problematize policies that are directly connected to pedagogy, such as submitting grades on the Web CT server, but those initiatives that are related to a mind set of downloading administration. Representing the point, Isabel contends that this is especially problematic when it takes away from scholarship,

¹¹ Such as the Social Sciences and Humanities Research Council (SSHRC) and the Fonds Québécois de la recherche sur la société et la culture (FQRSC).

I have a problem with it because: a) it puts administrative staff out of work, that is something to think about, but also b) I think that each faculty member having to learn all of this on their own versus having one person in the department who knows it well does not strike me as necessarily cost or error wise efficient, and it is a huge amount of work and work of a different nature than I am interested in doing as it takes time away from students and research.

The clericalization of the academic is related to shifting notions of temporality. The time required to use and learn the technologies, the relentless quickening of pace in answering emails, as well as the time academics spend time doing clerical work, modifies the structure of academic work leading to a saturation point where there is less time available for the actual activities involved in the creation of knowledge.

Related to the lack of choice is the issue of pressure. Some academics, while disconcerted with the monolithic scale of technological integration that neglects to consider departmental differences, do not feel under personal pressure, indicating that they use technologies for their own sake. However, the ready acceptance of ‘having to be on email’, for example, clearly diminishes agency and is indicative of technological practices becoming normalized. While many professors and students use the many technologies for its own sake, most perceive the policies and initiatives not as incentives but as “bribes” that contribute to an environment of pressure.

The significance of the perception of uncomfortable levels of corporatization, homogeneity, and clericalization, related to technological implementation is an important source of contestation and speaks to elements of academic culture, particularly notions of academic autonomy and freedom.

Role of Technologies in the Production of Knowledge

The issue of the role of technologies in the production of knowledge (teaching and scholarship) is important both in itself and because it relates to the issue just examined, that of

the role of the academic in integrating technologies in their work. Professors highlight that while technology has had a tremendous role to play in the exchange of information and for increasingly more powerful data processing, there are limitations to the use of technologies in the production of knowledge. José Luis relates the role of technologies to the role of higher education itself and its teaching and learning function. Referring to the use of the Web CT server he contends: “I would not want students to merely follow my classes on Web CT, partly because, as cliché as it is, universities are more than that. Part of the experience is to come to the class and hang out, it is as much about socializing, and students learn from each other also, not just from me”. António, a professor in Engineering, remarks that the role of course management online platforms is to facilitate the provision of course content, “for content delivery and lower level learning objectives they’re useful. For higher levels of learning you still need to have the face-to-face, the instructor meeting with the students”. Similarly, Elias, an instructor and a graduate student in Education, cautions that “if a professor can be replaced by a video tape, or a computer software he probably should not be teaching”, implying that a class should be responsive to the student dynamic, and that the value of a conventional class cannot be underestimated or replaced by computer software.

With perspicuity, João, a Masters student in Communication Studies, articulates the integration of new technologies in higher education, particularly in teaching and learning, in terms of a precipitation of “the manufacture of learning by pre-approved text rather than human dialogue” and he expresses the preoccupation that “superficiality and speed will replace depth”. Similarly, José Manuel, a doctoral student in Communication Studies, questions whether technological integration ultimately diminishes the value of the human. “Are we driving ourselves into the realm of obsolete? If the technology itself becomes the education, we are

destined to be drones. That is not why higher education exists”. The issue of the replacement of the human with machines is undeniably a concern in relation to higher education where the purpose is the development of the human mind. Interestingly, Bruno acknowledges in relation to teaching that it takes experience and reflection to become a good teacher with the minimum of technologies,

I think, as part of the whole matter of teaching, that we still need the emphasis to be on what makes a good teacher and how do we convey an enthusiasm for the subject. A lot of technology has to do with the nuts and bolts of transmitting the facts and the data and talking about them, but what it doesn't get at is the professor who just conveys to students their own enthusiasm for the subject - you know you take courses where you say 'I want to be an Anthropologist'.

This quote from a member of the administration underlines that despite the prevalence of a technocratic institutional discourse mandating the uses of technologies, there are also tensions within it. Namely, there is an awareness, admittedly less manifested, that when it comes to the production of knowledge the role that technologies can play remain facilitative at best and marginal at worst. José Luis makes a similar point, highlighting a faculty perspective, “I would summarize by insisting that technology is always the tail of the dog and must not be allowed to control the process of teaching and learning which is the animal we are all interested in”

The academic discourse raises questions about the relation between market and institutional imperatives and the production of knowledge, when it comes to the adoption of technologies. While the use of technologies is useful and productive in many areas – exchange and access to information - the perception of an erasure of agency in decision making indicates that autonomy and academic freedom continue to be valued elements of academic culture. Additionally, it demonstrates a will to knowledge where the articulation of the role of technologies as merely facilitative suggests that the production of knowledge is a more creative rather than merely a transmission process.

The language games of knowledge

Lyotard diagnoses the way in which knowledge is produced under the conditions of postmodernism in terms of discontinuity, plurality, paralogy (logically unjustified conclusions). If science depends on asking “how do you know what you know?” - a question which requires that the speaker demonstrate his methodological apparatus- then the next logical step is to ask “now that you have demonstrated your apparatus, how do you know that it is the right apparatus?”¹² The language game moves from a demand for empirical evidence to a demand for epistemological evidence. It is the demand for epistemological evidence which leads to the complexification of the process of the administration of proof which opens the door to questioning the use of technologies in the production of knowledge. How do we know that any type of knowledge production is the right one?

According to Lyotard, the principle of efficiency describes knowledge after the loss of legitimacy of the essential narratives of modernity and furthermore knowledge itself is a plurality of language games that are locally determined and unpredictable. The usefulness of the “games” metaphor is that it emphasizes the competitive character that the term evokes. Given the diversification of education and the ubiquity of knowledge, competition and efficiency are factors that play a significant role in the implementation of technologies in higher education institutions, given the diversification of education and the ubiquity of knowledge. In addition, the metaphor nicely suits the constructivist view of knowledge production in view of the principle of legitimation. There is no final knowledge, there are only interpretations that are denotative descriptions of society and that create new ways of legitimizing. As Patrick McKinlay has pointed out, Lyotard criticizes Jurgen Habermas for attempting to circumscribe the task of

¹² I would like to acknowledge the importance of several discussions I had with Paul Attallah in synthesizing this point.

legitimation with the principle of consensus. Postmodernity is about acknowledging lack of criteria. This being the case, and here I depart from Lyotard's assessment of the conditions of knowledge production in postmodernity, the criteria established for knowledge production in conventional teaching are just as legitimate as its competition (online). If the task is to decide what knowledge is, then based on respondents' perceptions regarding technological implementation in academic work, conventional knowledge production is clearly competing. While there are a diversity of ways of receiving and delivering education (with varying degrees of legitimacy and accreditation) conventional education continues to be relevant and maintains its place as an indubitable form of knowledge production.

Respondents' comments suggest that this position of authority is not only maintained but reinforced. Particularly evidenced in the perception that technologies tend to be more appropriate for transmission than for constructivist modes of thinking and educating. In the former model, communication is reduced to its transmission function and information is equated with knowledge, whereas the latter model emphasizes education within the development of critical thinking for the continual creation of knowledge. The perception that many aspects in the design and implementation of new technologies are based on a transmission of information model, as well as the accentuation of the prominence of face-to-face and verbal interaction, offers a challenge to the discourse of displacement.

Undoubtedly, there is an undesirable process of institutionalization of scholarship characterized by the corporatization of education, the centralization of decision making and service provision, and the homogenization of academic practices. Furthermore, this results in a situation where there is a lack of academic agency concerning the adoption and implementation of technologies in scholarship practices; in the increased technological and pedagogical

uniformity that is being imposed, in the self-subsidization of technologies for academic work, and in the clericalization of the profession. However, this is not emblematic of displacement, but rather I read it as a reiteration of conventional elements of academic culture, specially autonomy and academic freedom, and collegiality. Moreover, although practices with new technologies are promoted in desirable, enhancing and capacious terms, respondents perceptions about the technologies indicates that this needs to be distinguished from extreme interpretations such as the anthropomorphization of technologies, where individuals use ‘smart’ boards and deliver lectures in ‘intelligent’ classrooms¹³; with the automatic implication that using these technologies enhances performance. Such anthropomorphization reduces intelligence to technologically dependent capacities.

The academic discourse exposes the need to distinguish between an institutional apparatus that defines knowledge production in terms of its association with technological transmission of information (this is not, in fact, a very modern objective!) and an academic culture that actually views knowledge in much more creative and irreducible terms (this is more in line with the postmodern turn). Isaac’s remarks are a fitting example of the attention directed towards this point by respondents,

a few years ago, it looked like everyone was moving towards online education, now universities are competing for prestige and people realize that the best universities are the ones that have full time professors with a good research career who are well paid, rather than a technician, or tutor, who has a course on a server somewhere.

What is compelling about respondent’s comments is the clear indication that conventional knowledge production remains relevant as a form of legitimation, and a language game,

¹³ For details on the “Intelligent Classroom” see <http://www.cim.mcgill.ca/~jer/research/ecalss>

where the connection between knowledge and technologies defines a will to knowledge in creative rather than transmissionist terms that better resonate with the culture of academics.

Conclusion

The conditions of freedom of thought are in danger of being destroyed by science, technology and the mechanization of knowledge, and with them, Western civilization (Innis 190)

The last decade has witnessed the development of impressive communication and information technology portfolios in many higher education institutions across North America and Europe. It was Innis' contention that the task of intellectuals is to sustain historical and philosophical work, and of the university to make it possible. "Education is the basis of the state and its ultimate aim and essence is the training of character" (203). This education, however, was in jeopardy with the introduction of mass media. According to Innis, not only was the student in danger of being robbed of the intellectual experience that would adequately prepare him or her to make the decisions of a free individual, but what was being substituted reinforced all the negative characteristics of the newspaper and radio; yet the University of the Air did not eclipse conventional universities, just as television did not revolutionize education. Not all towers are under siege and neither are all universities for sale. I have examined in this article the academics' perceptions about the implementation of computer technologies and their perceptions would unquestionably ease Lyotard's preoccupation with the demise of the university and Innis' contrivances about the future of civilization.

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