

Technology innovators and structures of indifference in higher education

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The revolutionary discourses of information technology have created 'flexibility' and 'going online' as the dominant policy discourses in higher education in Australia and internationally over the past decade. Policy discourses are not typically 'critical' and as such are 'silent' regarding problematic areas of universities' business, for example the often deeply embedded pedagogical conservatism of academic groups. This paper argues that 'flexibility' and 'going online' as dominant discourses in higher education are ideological. The paper suggests that the praxis and agency of critical academics as technology innovators are threatened by such ideological discourses. The paper draws on recent doctoral research to argue that critical teachers as technology innovators face considerable personal and professional 'costs' when they engage in innovative practice in the context of the prevailing managerialism of the contemporary academy.

Introduction

Technical rationality is a dominant social discourse that sees debates about technology restricted to the manner in which it serves rightist social, economic and political agendas. In other words contemporary social and political debates regarding technology are accepted only in so far as they examine its contribution to economic growth, national competitiveness and prosperity; other critiques are marginalised (see for example Feenberg 1991, 2000a, 2000b; Franklin 1990; Green 1994; Hutton 1995; Hutton & Giddens 2001a; Postman 1993; Pusey 1991; Rosznak 1986; Schiller 1989; Stallabras 1995; Wajcman 1994; Winner 1986). Related discourses of information technologies are entrenched in the political and economic ideology of rightist politics that have also informed policy discourses in higher education—they claim to be revolutionary, they can be conceived as ideological, and their infiltration into all forms of life reflects the demands of the market. Subsequently, in the context of higher education, information technologies might be conceived as Pusey's (1991 p. 173) 'pervading scientism' and '... promiscuous instrumentalism' (p. 233). In this setting it becomes challenging, to pursue rigorous critique and to engage in related forms of critical pedagogy.

Becoming critical and pursuing critique in higher education is enacted within the dialectic of agency and structure. Engaging with pedagogy as critical intent creates a praxis oriented form of critical pedagogy¹. Critical academics as technology innovators are creative, risk-taking agents often compelled to 'work against the grain' (Simon 1992) within the structures of the academy that from a pedagogical perspective, remain largely conservative. This paper makes the claim that the concepts

¹ *Praxis* encapsulates the dialectical relationship between theory and practice in action. It embraces Habermasian and Freirian concepts of determined, emancipatory politically embedded action. As Kemmis (1988, p. 141) articulated it, praxis is the product of reflection, 'informed, committed action, and the most eloquent and socially significant form of human action'.

of 'flexibility' and 'going online' in higher education, which are dependent on discourses of information technology, are ideological. The paper will argue that the praxis and agencies of critical academics as technology innovators are threatened by such ideological discourses in that there are considerable personal and professional 'costs' for critical teachers who are technology innovators. In order to support such an undertaking, the paper first briefly analyses contemporary sociological understandings of technology as an ideological socio-cultural construct. It then draws on recent doctoral research² to explore the way in which technology innovators engage as social agents within what I characterise as 'structures of indifference'³ in the contemporary academy where academic agencies of innovation are paradoxically reified and marginalised in ways that creates them as 'absent presences' (Kemmis 1989, p. 33).

The ideology of information technologies

The rhetoric of technological revolutions would have us succumb to the received view of their inherent goodness and political neutrality, but according to Winner (1986, p. 40), '... no part of modern technology can be judged neutral a priori'. A brief review of the historical rhetoric of technology and technological advances demonstrates that it was either damned as the devil; '... where technological society is condemned to authoritarian management, mindless work, and equally mindless consumption' (Feenberg 1991, p. 3) or hailed as a saviour; where '... optimists carelessly believe that all technology is inherently liberating' (Winner 1986, p. 50). As Postman (1993) and Winner (1986) suggest it has become neither; what it has become is ideological. Technologies are essentially forms of life; they have come to alter patterns of social behaviour and to generate entirely new ones (Feenberg 1991; Habermas 1970; Postman 1993; Stallabras 1995; Winner 1986). Other social critics such as Aronowitz (1988) and Postman (1993) have drawn on the work of Marcuse (1966, p. 1) who saw technology creating a society characterised by '... comfortable, smooth, reasonable, democratic unfreedom'.

Much of the social criticism of technology recognises its cultural pervasiveness, that it simply 'is'— however, what serious social critics demand is a deeper, more reflexive public scrutiny of technology. In contemporary society we have instead a consistently ahistorical viewpoint of what it [the computer revolution] means politically, socially, economically and culturally (Winner 1986). Stallabras (1995, p.10) supports Winner's view and puts forward the thesis that '... fundamental questions about the direction which the new technology is being taken are rarely asked'. In a discussion of the contribution that technology has made to global economic growth Lundgren cites Usher who stated that:

Broadly speaking, technology is an important part of the central core in the evolutionary process. It is an essential aspect of the accumulation of knowledge and the development of skills. It does not exhaust the field of the development of the mind but it is a characteristic segment of the whole. . . In its own right, and as an aspect of the general process of innovation, technology has powerful claims on our attention (Usher in Lundgren 1995, p. 32).

Importantly these 'powerful claims on our attention' have not always been the critical kind. Rather, the rapid growth of technological change has created the situation where, as Winner puts it, '... because technological objects and processes have a promiscuous utility, they are taken to be fundamentally neutral as regards their moral standing' (Winner, 1986, p. 7). He goes on to claim that technocrats and other

² Where the paper draws on the narratives that contributed to the doctoral research, the references are in quotes and identified by a first-name pseudonym (Barbara, Ewan, Martin, Tom, Tony and Bridget).

³ After Sennett (2001).

designers of technology are ‘. . . seldom interested in the significance of their work on the overall structure of society or justice’ (p. 49).

The discourses of information technologies then, are ‘revolutionary’ and have rapidly become part of contemporary discourses in higher education. Evans and Nation (1993a, pp. 198-199) in the context of open and distance education acknowledged that technologies are not just the tools of educators but ‘. . . they are the knowledge, values and practices that constitute the development and use of those tools’. This paper is therefore based on the premise that in the confines of late modernity⁴ (after Giddens in Evans 1995) the debates about information technology are restricted to the manner in which it serves social, economic and political agendas. In other words contemporary social and political debates regarding information technology are accepted only in so far as they examine its contribution to economic growth, national competitiveness and prosperity.

Critical pedagogy and technology innovators

According to several key critical researchers, the critical project in education risks becoming ‘trivialised’ (Elliott, Lather & Walker, 1992) by its critics and a socially critical analysis of technology risks ‘. . . [retreating] into a blasé, depoliticised scholasticism’ (Winner, 1993, p. 450). The evidence that culture has surrendered to technology (Rosznak, 1986; Schiller, 1989; Postman 1993) coupled with the implications for educational theory and research of ‘. . . the uncritical way in which the inherited ideology of contemporary society is now accepted and understood’ (Carr, 1995, p. 120), offered support for a critical exploration of the relationships between information technologies and critical pedagogy in the doctoral work which informs this paper.

Scholarly, critical approaches to teaching are drawn from the iterative internalised relationship that develops between practice, research, and the lived experience of ‘going on’ in everyday life. Teaching in this setting is conceived as ‘contextual rather than causative with regard to learning’ (Green, 1998, p. 178). Arguably, this creates the transformational change and intellectual growth that arises out of the capacity for reflexivity. The theoretical concept of critical pedagogy as it is lived in practice can be conceived usefully as a form of ‘critical intent’ deeply connected to one’s biography and lived experience; less dogmatic and indeed less ideological than the theoretical literature paints it. In this conception of critical pedagogy as ‘critical intent’, academics as critical pedagogues are creative risk-takers in their approaches to their teaching and their engagement within the structures of higher education. They are agents of innovative practice as early adopters of technology (Rogers, 1995) and their scholarly practice is personal, political and unique.

As creative critical scholars, technology innovators are ‘constantly surprised and constantly looking for new ways of looking at a given problem’ (Janesick, 2001, p. 531). Yet, where research output, resource limitations, vocationally oriented student outcomes and pandemic quality agendas drive the ‘business’ of schools and faculties (Coaldrake & Stedman, 1999; Marginson & Considine, 2000; Evans & Nation, 2000; Marginson, 1993, 1999, 2000; Readings, 1995; Slaughter & Leslie, 1997; Sizer, 2001; Weil, 1999), risk-taking, critically-informed pedagogical behaviours in such highly bureaucratic and process orientated environments have attendant costs. Academics engaging in Simon’s (1992) ‘teaching against the grain’ are also ‘making trouble’ (Ellsworth, 1997) and are what Weil (1999, p. 4) has called ‘boundary crossers who

⁴ A major feature of late modernity in Giddens’ conceptualisation is the ‘...nature and extent to which communications and transportation technologies have contributed to the globalising of social activities’ (Evans 1995, p. 172)

risk traditional careers through engagement in borderland activities such as new forms of participative and transdisciplinary research' and as I argue, new forms of pedagogy and critique as technology innovators. Critical academics are engaged in scholarships of praxis. They have created life narratives of teaching that eschew mediocrity and reveal deeply internalised commitments to the intellectual work of pedagogy. As social agents within the structures of the contemporary academy they often compete against institutional constraints that in many ways militate against their work and their beliefs about the value and authenticity of their work. The following section of the paper draws on life-history narratives of recent doctoral work to support these claims.

Despite the institutional rhetoric of flexibility as a 'good' and online technology as a 'saviour' that, so it is claimed will create institutional success by any measure, disengagement for critical academics is founded on a conception of themselves as 'marginalised' in the settings of what they perceive as 'institutional indifference' to the realities of practice. Given the preceding discussion of technology as ideology, forms of disengagement in the lives of critical teachers can also be seen as a response to the structural tensions that ideologies of technology create for critical teachers in that a 'form of productive cognitive dissonance has gone missing: [that is], interaction with others in the environment so that difficulties, differences and dissonance can be renegotiated' as Sennett (2001, p. 188) argues.

As Martin explained:

I'm fed up with being seen as the person who's driving this [technology developments in his School] and being loathed for it, so I'm just going to shut up. One of the professors called my use of technology in my teaching as 'cameo'. He meant that he wanted a whole school approach and he didn't want mavericks like me going off and doing my own thing. I happen to see this as a core part of the teaching that I do and if I want to do that, I'm going to do it, so sod you [the professor].

Barbara reflected:

I wish sometimes I were not in the vanguard, because it's lonely, the opportunities for meaningful discussion limited, and the chances of technology-frustration over minor matters appallingly high.

Tom commented that:

If I think something is worth doing, I find a way to do it, regardless of the official line. I have to admit to finding it harder and harder to get motivated enough any more to be subversive.

These comments reflect a sense of dissonance⁵. Tom's reference to 'being subversive' was in the context of trying to do what he believed was appropriate for his teaching practice rather than what the institution wanted him to do. It was Tom's view that what the institution wanted him to do in relation to the evolution of online technologies in teaching⁶ was not only impractical, but clearly indicated that University Executive had no real understanding of new technologies, nor how they might be applied in teaching enhancement or learning improvement. He is sceptical of the institution's capacity to be innovative and has little time for its rhetoric. He demonstrated this by explaining that while his School is 'seen and often promoted as open and/or flexible'; it runs its off-campus programs as an extension of its on-campus activity:

⁵ While the interviews of the doctoral research were conducted over an eighteen-month period, aside from the conversations about their early lives, the discussions rarely took a linear path. It is worth noting that these comments were made towards the end of the interview series and after the protagonists had been engaged in using technology in their teaching at University A for at least three years. It was also a time at University A when several flexible online learning initiatives had begun.

⁶ He is referring here to one of the Executive's 'ephemeral' and ill-defined dictates that 'all units would be online' by the end of a particular academic year.

the semesters are the same, the materials are the same, the assessment is the same, and all the deadlines are virtually identical, apart from a two-day allowance for off-campus students to post their assignments. Students have limited choice. All major characteristics of the course are fixed. Flexibility resides in the mode of study and the variety of educational media employed. It is *not about flexibility for the learner or their learning* (my italics).

While the narratives here isolate frustrations with technology (both with the ‘official line’, and with being at the forefront) the added demands that being ‘obsessed with the possibilities of this kind of work’ means to their daily lives as academics, compounds their sense of frustration over technology matters.

Marginson (2000, p. 40) reporting on a major study of university management in Australia, conceded that:

...the academic profession needs radical strengthening in the material sense. It is stretched across more functions than before, and at the same time many academics are subject to a form of work intensification that has negative effects on the quality of research and scholarship.

In the context of this paper this is manifested in the way in which the self-identities of critical academics change to accommodate the often-overwhelming demands of having become Goffman’s (1961, p. 143) *blurs*—engaged in complex performances as academics, teachers, researchers, scholars and educational technologists in the chaotic, dynamic and volatile environment of the contemporary academy.

As Barbara explains:

The thing that I find most fracturing is the, unpredictable nature of the multiplicity of demands. I can work for days on end and have nothing at all to show for it where I feel I’ve achieved very little really. I don’t think that’s good and I think that the standard kind of numbers of students that we’re trying to deal with and the ways in which we have to teach them is difficult. Once there was never a reference that I wrote that I didn’t know the kids inside out and I’d know them back to front. You knew your students really well. That’s not possible any longer. I have them now for four weeks at a time. The standard load in my School is one hundred and twelve students a semester; imagine learning a hundred and twelve students’ names a semester! I’d have ten or twelve research students to look after; it’s a big load, it’s a huge load. I just don’t feel that there are spaces in my brain where reflection can happen; it’s just mush a lot of the time and you’re just running from one demand to another.

The burdens of the ‘fracturing’ of academic work for these critical teachers then are also compounded by their ‘innovativeness’ as early adopters of technology. Barbara articulated this in terms that reflected considerable distress:

I feel that I’ve got my nose against a brick wall a lot of the time. If there were someone here who was doing something similar it would be so much easier. I’ve been the kind of person who has been rapturous about what I do but I’m quickly coming to the point of just tiredness and of feeling that it’s not worth the gamble.

Barbara’s belief that her involvement in innovative pedagogy was a ‘gamble’ creates the perception that creative pedagogical risk taking is marginal and unimportant. For Barbara, her pedagogical interests were creating difficulties for her in relation to the institutional demands for her to be ‘researching’. It was implied institutionally that much of her work was ‘too pedagogically focussed’. She believed that this was an interesting comment in that the institutional rhetoric attempts to support the arguments that ‘teaching is enriched by research; but that teaching can contaminate research’. The research indicated that this kind of institutional demeanour is not uncommon.

Martin too felt distressed and rather betrayed by the lack of collegiality among his peers in his School:

I have spent an enormous amount of time and effort developing reasonably high skills in web technologies over the past two years. During that time I have had a fair amount of criticism from other staff and little or no support. Decisions are being made all over the University with little or no understanding of the technicalities involved or the processes in

making them work. The demand now is for interactive dynamic websites that take account of the user's configuration, that connect to databases that work as applications rather than static pages. Sadly this is not realised by University decision makers.

Ewan explained that:

The University frequently presents the innovation (especially to the outside world) as evidence to justify its image of itself as innovative within this field (a partial fiction in which we readily collude). For me it's interesting because distance education finds itself suddenly taken seriously by those who have previously dismissed it. In the push to flexible delivery, expediency and efficiency is to the fore and educational ideology pushed to the background.

In their non-teaching roles Tony and Bridget's disenchantment at this time related to the fact that they were facing the considerable strain of a major departmental restructure. For Tony this was the third in his six years at University A. Both felt that the restructure was poorly conceived, that the proposal reflected management's incapacity to confront the demands of the new technologies in ways that would position University A as a leader. Tony felt that they were 'going back to square one' and Bridget stated that:

I don't believe that they [the University Executive and senior managers] understand their rhetoric nor understand the implications of it. I don't believe they understand that in order to create that kind of university [innovative, flexible] you have to have certain conditions and you have to resource things in certain ways and it seems to me that they're not very good at putting the resources where it would really make a difference. I don't know what they use half the resources in [central administration] for but I'd imagine that there's a lot of empire building going on in that administrative area that is not germane to the improvement of teaching and learning. We know that because we know that Information Technology Services, which should have its infrastructure well and truly streamlined, is still spluttering. There seems to be I think too little understanding at executive level of the life of an academic in a Faculty right now.

Indeed, there is the perception among technology innovators that 'executive is very uncritical of the pedagogies that they imagine are ideally delivered by technology. They seem to think that lectures available electronically are the end of the road and the high point of academic achievement'. Moreover, that 'executive doesn't understand the technology nor its potential so how can they make any decisions about it?'

How then did these critical teachers come to be disenchanted and how did they move to disengagement? What features of their lives as social agents in the academy and the structures within which they work, created the kind of dissatisfaction that the narratives reported here reflect?

Early adopters and the creative scholarship of teaching

Sennett's (2001) ideas have appeal as a means of explaining the relationships that exist between agency and the structures of the contemporary academy. The fracturing of academic work creates uncertainty and as Sennett (1998, p. 27) suggests, what is '...peculiar about uncertainty today is that it exists without any looming historical disaster; instead it is woven into the everyday practices of capitalism. *Instability is meant to be normal*' (my italics). Moreover, he suggests that 'detachment and superficial cooperativeness are better armour for dealing with current realities that behaviour based on values of loyalty and service (Sennett 2001, p. 28). Giddens (1991, p. 168) has discussed these kinds of issues as the 'sequestration of experience' where the 'frontiers' of sequestered experience are:

...faultlines, full of tensions and poorly mastered forces; or, to shift the metaphor, they are battlegrounds, sometimes of a directly social character, but often within the psychological field of the self.

Giddens discusses the expansion of surveillance as the 'main medium of the control of social activity by social means' (p. 149). Further, he explains that the:

...sequestration of experience is in some part the contrived outcome of a culture in which moral and aesthetic domains are held to be dissolved by the expansion of technical knowledge.

In essence then the sequestration of experience for Giddens creates 'fragility' in the framework of ontological security. For critical teachers as technology innovators, it may be that the dissonance they experience as social agents, reflects developing 'existential crises' as routines that they expect to maintain their day-to-day lives are 'radically disrupted' (p. 167).

Rogers (1995) is widely recognised as the leading scholar in the field of innovation and innovation diffusion. In the first chapter of his best-known work *Diffusion of Innovations*, he quotes Machiavelli:

There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things...Whenever his enemies have the ability to attack the innovator they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and his party alike are vulnerable (Hughes 1995, p. 1).

Machiavelli's description of the risk and potential costs of innovation remain relevant. However, as Rogers (1995, p. 1) argues, the institutional or structural complexities of culture, politics, and social life as well as the agency of individuals heavily influence the way innovations are perceived, the rate at which they are adopted and the way in which they diffuse through an institution or a socio-cultural group. While diffusion of innovations is not the key concern of this paper, Rogers' empirical work and his extensive and comprehensive review of the multifarious scholarship of innovation contributes to our understanding of the lived experience of innovative critical teachers, their engagement with new technologies as early adopters and the personal and professional costs of such engagement.

Rogers (1995) equates innovation with communication of new ideas across a social system. The dynamism of innovation and diffusion creates 'a kind of social change defined as the process by which alteration occurs in the structure and function of a social system' (p. 9). He goes on:

An innovation is an idea, a practice or object that is perceived as new by an individual or other unit of adoption. It matters little so far as human behavior is concerned whether or not an idea is objectively new as measured by the lapse of time since its use or discovery. The perceived newness of the idea for an individual determines his or her reaction to it. If the idea seems new to the individual it is an innovation (Rogers 1995, p. 11).

Moreover, Rogers (1995, p.12) concedes that most innovation in the modern world is about technological innovation where he describes a technology 'as a design for instrumental action that reduces uncertainty in the cause-effect relationships involved in achieving desired outcomes'.

He goes on to argue that a:

...technological innovation creates one kind of uncertainty (about its expected consequences) in the mind of potential adopters, as well as representing an opportunity for reduced uncertainty in another sense (reduced by the information base of the technology). The latter type of potential uncertainty reduction (from the information embodied in the technological innovation itself) represents the possible efficacy of the innovation in solving an individual's perceived problem: this advantage provides the motivation that impels an individual to exert effort in order to learn about an innovation (Rogers 1995, p. 14).

For Rogers (1995 p. 18) the diffusion of innovations is 'a social process' because empirical data suggest that 'most individuals do not evaluate an innovation on the basis of scientific studies' rather they 'depend on a subjective evaluation of an innovation that is conveyed to them from other individuals like themselves'. This occurs as part of the process of coming to technology which critical academics articulate.

Martin explained:

I can't remember what it was that started my interest in online technologies. I started to be aware of the Internet before I came to University A in 1995 and in fact, when I was in Europe, I looked up the University A home page but there wasn't one. There was a guy at my old University using it but he was never very forthcoming with information. I'd also started to subscribe to bulletin boards and email lists in [my discipline]. Eventually I downloaded a free web server, which I installed on my computer, and I just started playing with it. In 1996 I developed my first website because I thought it would be great to put some of my unit information up there for my students. Really it was a lot of playing and talking to another guy here who was also playing. The 'playing' euphemism I use is literally just that. But playing in a structured way that seemed to marry my desire to explore new possibilities with perceived benefit to my teaching practice. I think that there is a certain guilt associated with spending time 'playing' during one's professional work time. I also think that it is related to a lack of self-belief that comes in some people who are entirely self-taught like myself. This happened doubly to me as an amateur pedagogue and an amateur technologist—it's easy then to describe myself as a fraud!

Barbara found it difficult to articulate when she 'came to technology'. She recollected that she and her husband bought a CD-ROM for their daughter after they had bought a CD-ROM capable computer. She confessed that 'my daughter was about six and I had more fun with it than she did!' Barbara recognised that in the early stages she 'didn't really know what technology would allow me to do' and she recognised that that was a 'huge limitation' especially as she 'wasn't using the web very much'. After the initial foray with the first CD-ROM:

We got other ones like encyclopaedias that were a bit more interactive. I really appreciated the ability to have text and image together and to be able to use them side by side so you could generate interactivity and visual representations—that's the thing that is hard to do in a large class, and impossible to do with distance students. I remember too one of the people working on our team was a chap called Bill. Bill was a historian who had done his PhD on China and Japan and Victorian representations and he was teaching history through images. He asked me to help him do some analytical questions for a small project. He was building himself some sort of archive of historical photos of Australia. So that's what I did with Bill and that's what really set me going in the first place. Now I am enamoured of it because of what it can deliver rather than for itself. I guess I'm also nervous in terms of what I'm doing; [in her School] I'm clearing the path alone.

Tony had used technology for teaching before he came to Australia. He saw himself as 'fortunate' because at College B where he was teaching prior to his first appointment in Australia, he and his colleagues were committed to a 'resource-based approach' to their teaching as a curriculum framework. He was familiar with the use of video for teaching and had used some multimedia. He believed that:

...this type of flexible approach to learning could provide a framework in which students could more independently pursue learning goals. I came to University A in the early 1990s to a volatile area that was being restructured and began working in a new School whose Head was visionary. They were already using some computer-assisted learning. I also started a Master of Arts and that was very illuminating for me because with my background as a scientist, I found that the MA really enlarged my vision of the importance of the humanities. One day a few years after I completed the MA, I met Anthony, who supervised my thesis, in the corridor. We would normally have social chats whenever we met and on this particular day he started talking about how he wanted to make the MA more innovative. That started us sitting down to plan how the MA could be improved and what technology might offer us to improve it.

While the critical academics whose work informs this paper are by virtue of their commitment to critique, pedagogical risk takers, I argue that their approach to and engagement with new technologies confirms the risk taking nature of innovative pedagogy. For these academics, technology is perceived as a potential opportunity to improve and extend their practice, a powerful addition to their existing repertoires of pedagogical expertise. The previous excerpts reveal this and moreover situate the practice of innovators in the 'social' and in the problematic complexities of teaching and the desire to innovate to improve practice.

The creativity and risk-taking of ‘early adopters’

Rogers (1995, p. 132) states that the identification of a problem usually generates the innovation-development process. Moreover, he demonstrates that the generation of problems that initiate innovation are not only political and social but also often serendipitous and that *‘much innovation occurs when people talk, when information is exchanged about needs and wants versus possible technological solutions’* (my italics) (p. 137). Here we see this articulated clearly as these teachers recollect the settings of their initial interests. Their interests in technology are embedded in their histories and importantly, these interests remain essentially pedagogical.

Early adopters can be identified by particular personality traits that Roger’s (1995) claims mark them as different, as ‘other’ in sociological terms, and in this context, they are innovators outside the normative and conservative mainstream of pedagogies and pedagogues in higher education. Innovativeness and what characterises innovativeness is the demonstrable ‘overt behavioural change’ (p. 252) that arises out of engagements with innovations in practice. Rogers (1995) work is empirically based. In discussing the characteristics of early adopters, Rogers (1995, pp. 253-257) draws on the influential work in the 1960s of Deutschmann and Fals Borda, who investigated the diffusion of farm innovations in Saucio, a Columbian village in the Andes. In this village illiteracy and poverty were endemic, however, over thirty years, two of six innovations studied (chemical fertilizers and spray guns for insecticides and fungicides) had diffused to reach almost 100% adoption. Moreover, ‘two other innovations diffused in the ten years prior to 1962, with both reaching 75% adoption’. In an important step for diffusion research, Deutschmann and Fals Borda ‘combined all six innovations into a composite measure of innovativeness’ (p. 254). Subsequently, they compared their findings with a study by Rogers that looked at innovativeness in Ohio farmers (Rogers 1961, cited in Rogers 1995, p.255).

The result of this work has marked the criterion for adopter categorisation as ‘innovativeness’, which according to Rogers (1995, p. 261) is the ‘degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system’. The adopter categories that Roger’s (1995) identifies are the ‘most widely used in diffusion research today’: the categories are innovators, early adopters, early majority, late majority, and laggards. These categories are of interest for they enable me to position critical teachers as technology innovators in Roger’s (1995) early adopter category. Diffusion research reported by Rogers is generally concerned with technological innovation across social systems. In the contexts addressed by this paper, innovation can be categorised as a willingness to investigate new technologies for critical teaching improvement and pedagogical innovation.

As a professional practitioner in his field, Tom believed that his mature age entry to academia and his practical experience was highly influential to his teaching. However, he ‘has always been a computer nut’ and ‘computers are a stock-in-trade in my profession’. Tom used the Internet before he came to University A in the mid 1990s, largely for newsgroups and bulletin boards that he used to seek solutions to problems of practice:

I always thought that was quite amazing that overnight I would send off some lovingly crafted schematics of a problem I was having at work and have ten people from around the world answer me. I thought this was very powerful, that I could access all this international brainpower as well as other static resources. It seemed natural to me that my students should use it. I developed some rudimentary pages so students could contact me but it was very one-way. As well as sometimes being a limiting factor, being new to teaching does have one distinct advantage, I do not feel constrained by accepted practices and conventions, and have been active in trying out ‘new’ things. I always take the view that it is easier to ask for forgiveness, than to ask permission!

Importantly, for Ewan his ‘interest in technology is about multi-media’ and it ‘hasn’t just jumped off the page’. It is deeply rooted in his personal ‘mists of history’: in his long background and interest in innovative and critical teaching and research and what he has called ‘visual sociology’. His interests in visual representation in teaching and research have grown from his undergraduate experiences. They are also embedded in his history as a classroom researcher and are deeply related to his personal interest and enjoyment of documentary film and other cultural forms of representation.

At University A, he produced with colleagues a videotape for one of the programs he taught in the early 1980s. The idea for this fell out of conversations with colleagues but was cemented rather serendipitously from a conference trip to Europe where he and a colleague spent many hours travelling together and the ‘conversations in the car made a lot of our ideas about changing teaching fall into place’:

When we came back, we knew what we had to do for the video but the structure of the thing was very much like what you would do if you were producing a CD-ROM. It was a bit like we saw the possibilities before it happened, that we made the video but we were really waiting for the CD-ROM technology. I must say that we didn’t realise it was going to happen quite so quickly. I think the first cohort of students to use the video was in 1986 or 1987. Putting together that video was probably the crucial thing and we were doing it because we were trying to change the way in which teaching and learning were done. At University A especially with its distance education approaches, pedagogy was over simplified to ‘here’s six things to read now write an essay’. We did it partly because we liked it and found it interesting, but we also thought that if you are doing that standard text-based type distance education what that means for most school teachers [his student cohort at the time] is that it pulls them away from the things that are most important to them, engaging in the action of the classroom.

For Ewan the rapid development of CD-ROM technology created the opportunity to engage in more ‘conversations’ and ‘a group of us with various media interests started meeting to work out how to use the video material for a CD-ROM’.

Bridget’s self-identity as a technology innovator is bound to her experiences of working closely with a group of innovators. She sees herself ‘as a product of the culture I have worked in over the past six years’ where:

...compared to my Faculty-based colleagues I feel privileged to be working in this environment where innovation in pedagogy and technology is central. I also worked with a vibrant academic culture in the Faculty of Education before I left. There I was very au fait with the more traditional technologies that University A as a distance education provider has used especially audiotapes, videotapes and telephone tutorials. Interestingly though it was not technology that was the driver. Our philosophical and ethical beliefs about the ‘teacher as researcher’ totally drove our pedagogies. With the advent of the new technologies at the time I left the Faculty [to take up an appointment in a central academic unit], I started to see more work that was going on across the University and it seemed to me that there was too much interest in transmission models of teaching as the way to use new technologies—it was plain to me though that the new technologies offered opportunities to do more than that.

Like her colleagues who participated in this research, Bridget’s interest in technology is directly concerned with her interest in improving pedagogy to ‘enthuse students about maths by teaching creatively’. She believed strongly that if forms of technology enabled her to do that then she was a willing collaborator with it to improve her student’s experiences of learning. This approach is not out of step with the kinds of intuitive and theoretical constructs that informed her practices when she moved to the central unit concerned with working with academic colleagues across the University to identify pedagogical problems and to improve practices. The practice orientation of engagements with technology is clear in these narratives; pedagogical practice issues create opportunities for creative problem posing and problem solving.

In their wide-ranging study of problem finding in Art, Getzels and Csikszentmihalyi (1976) explored the way in which artists become creative. They concluded that the evolution of creativity is bound up in the way in which artists come to formulate

problems and the way in which they solve them. In the context of the arguments of this thesis, their concluding chapter is salutary. In it they argue:

The ability [to formulate problems] is not based on quantitative superiority in memory, reasoning or conventional cognitive capacities. The ability to formulate problems seems to be a faculty of a different order. It entails a process more in touch with the deeper layers of being than reason alone usually is: it is far more holistic in that it encompasses the person's total experiential state. The process is goal directed but it often pursues goals beneath the threshold of awareness. It seeks out similarities between external objects and internal states; it uses symbolic means to express formless feelings, thereby disclosing that which would otherwise go unperceived, articulating what would otherwise remain unarticulated. *Problem finding may well be at the origin of creative vision* (my italics) (Getzels and Csikszentmihalyi 1976, p. 248).

If critical pedagogy is conceived as a creative scholarship of praxis it bears some resemblance to the way in which creative artists engage with the acts of problem finding and how they come to innovation. Creative scholars as self-actualising persons, 'aware of unformulated problems potentially present in the conflicts of their own experience, [and] unlike machines they devise their own programs and work on discovered problems' (Getzels & Csikszentmihalyi 1976, p. 250). Rogers (1995) also highlights facets of the kind of 'holistic experiential state' of creative problem posing described by Getzels and Csikszentmihalyi (1976) above as a characteristic of 'early adopters' of innovations.

Critical academics as early adopters of technology, 'look like' Getzels & Csikszentmihalyi's (1976, p. 183) creative problem-posing artists. They:

...approach their work with personal commitment yet without stereotyped problems in mind, not only produce drawings that are rated more original and of greater aesthetic value, but persist in art longer. It would seem that problem finding is an integral part of a person's cognitive style: it is a reliable characteristic. A problem finding orientation seems necessary for creative work.

It is 'the diversity and complexity of the intangible social, emotional, and intellectual experiences that produce existential tensions which artists translate into tangible creative problems' (p. 244). Getzels & Csikszentmihalyi (1976, p. 247) conclude that 'a creative problem cannot be fully visualised in the "mind's eye"; it must be discovered in the interaction with the elements that constitute it'. Indeed it can be claimed that 'interaction with the elements that constitute it' in the context of critical teachers as early adopters of technology might equate to the intellectual, cognitive and emotional engagement with practice that so characterises the way in which they have 'become teachers'. While this is qualitatively interesting in the context of this paper, Rogers (1995, p. 273) argues that 'personality variables associated with innovativeness have not yet reached full research attention, in part because of difficulties in measuring personality dimensions in field interviews'. For Rogers (1995, p. 272), early adopters are not different from late adopters in age, they are more empathetic and interestingly, he describes this as the ability to 'project himself or herself into the role of another person', that is to be authentic and reflexive (Giddens 1991). Early adopters exhibit favourable attitudes to change, they are better able to cope with risks and uncertainty than later adopters, and have a better ability to deal with abstractions. They are more 'cosmopolite' where their interpersonal networks are more likely to be outside rather than within their system and they seek information about innovations more actively than later adopters. Rogers (1995, p. 275) comments that late adopters and laggards:

...will not adopt a new idea until they feel that most uncertainty about the innovation's performance has been removed: these later adopters place greatest credibility in the subjective experiences of their peers with the innovation, conveyed to them through interpersonal networks.

Further, he points out that:

...the individuals or other units in a system who most need the benefits of the new idea are generally the last to adopt an innovation. The units of the system who adopt first generally least need the benefits of the innovation (p. 275).

Could it be argued then, that innovative critical teachers engaging in new technologies as expert, exemplary pedagogues least need the benefit of their interests in technology for teaching improvement? Their colleagues, on the other hand, are often engaged in 'pedestrian' approaches to teaching, in institutions where the demands of corporatisation and the research agenda serves to create and embed a deep-seated disinterest in pedagogical innovation. As Tom explained:

In our so-called flexible degree, the curriculum is overburdened and the School is not overtly looking at improving the curriculum in any determined way. Our internal reflection if you like on our courses and programs from an educational perspective is limited. I'm not sure that anyone much in the School aside from a few of us sees this as an enormous problem otherwise there might be more people jumping up and down. Not only this but the details of the rhetoric of flexibility and going online and what that might mean has not reached the trenches yet in any way at all.

Barbara described her colleagues generally as 'troglodytes' as far as innovative teaching is concerned. She argued that they are 'willing to be impressed' with what she was doing, but 'not willing to move out of the time-worn grooves to accommodate what I am doing'. Bridget argued that the institutional administrative structures in the University are 'too powerful' and 'too influential' regarding their own 'superficial understandings of good pedagogy' and that the 'transmission model of teaching is alive and well across the University because it is easy and there is a lack of creative thinking broadly about what constitutes good pedagogy'. Moreover, 'there is also the sense that what you are doing [as innovative teacher] is neither valued nor understood'.

Critical teachers engaged in technology innovations are prepared to take risks in their practice, they look for ways in which they might 'shift the nature of academic work away from the sorts of things that University A had mostly done, and other people had done too, which is to oversimplify' facets of the curriculum. They look for ways to engage learners in authentic learning that reflects 'real worlds of work' as Tony explained, in ways that go beyond calls to active learning and which are more deeply concerned with transformative change, intellectually and socially (for example Brookfield, 1992, 1995; Buckingham, 1998; Ellsworth, 1989, 1997; Gore, 1992; Green 1998; Lather, 1992, 1998; Mezirow, 1991). They recognise that such worlds are 'complex and untidy' as Schön's (1995) 'swampy lowlands of practice'. They ask critical and difficult questions of themselves in regard to their teaching with technology, for example, 'what couldn't it be?' instead of 'what is it?' as a necessary step in discovering problems that can be engaged with creatively to develop students' 'intellectual autonomy'. They see the challenges of new technologies not so much as a 'curriculum challenge' but as heralding a need to 'reconstruct ourselves as teachers' as Ewan argued.

They want to give themselves opportunities within the structural constraints of the corporate institution, to think creatively about 'preparing learning materials that engage students and allows them to interact with the material in more focussed ways'. It is becoming more and more difficult to do this. Critical teachers as early adopters want to create innovative technologically-mediated learning environments and opportunities for students that are not only intellectual and social but importantly 'unbureaucratic'. They want to create technologically-mediated environments that 'allows [them as teachers to do] more small group work' and which also creates complementary opportunities for students to be learning about and using online technology as an 'informative and challenging experience'. They are prepared to take risks, to make mistakes and to learn; to learn about 'how long it takes to do these things, what works well and what doesn't' and importantly, to recognise 'how much

time, effort and other resources it takes to create something that looks trivial' as Tom argued.

In their creativity and innovativeness they are ambitious about what they want to try and achieve and they are often frustrated by institutional structures and their 'huge workloads' that inhibit what they perceive to be a critical part of their teaching; the capacity to be innovative. They are distressed that they struggle to accommodate the myriad demands on their time where they 'find it difficult to meet all [their] commitments and find [they are] constantly disappointed with the result'.

They are often alone in their activities in their respective Schools; however, as Rogers's (1995) early adopters they find their way to cosmopolite groups where others are involved in innovative activities. Such cosmopolite groups may be formal organisational groupings or informal groupings of like-minded people meeting for support such as the group that Ewan initiated to have conversations around developing his videotape as a CD-ROM.

In the context of the participants in the research that informs this paper, each participant serendipitously developed long term relationships with members of a central unit responsible for supporting pedagogy. During the time that the research was conducted, this unit comprised a group of academics with expertise in educational design, curriculum development working collaboratively with a group of software designers, web developers and multi-media producers. The participants in the research had relationships with this group and two of the participants worked within this group. A number of the participants in the research developed close, effective and sustained working relationships with the unit. The unit could be conceived as a 'cosmopolite group' because of its commitment to innovative pedagogy and educational technology. It played a role in supporting the work of the participants in this research as early adopters of technology. While their relationships with the unit were important (for example for Ewan, 'we couldn't have done any of our early work without Bill and Ben in the unit', for Martin, 'I met Al and Ted serendipitously in the corridor and hadn't realised that in the unit they were doing such great things and it was great to talk to people doing what I was doing'; Barbara claimed that 'the only interest and support I've experienced has been from the Unit folk and they have been superb. Betty is a gift'), they also sought opportunities and networks with individuals outside the University.

Critical academics within structures of indifference

In public bureaucracies corporatisation is often characterised by attempts at various strategies that restructure or re-engineer (Casey, 1999) and in the academy it has taken various forms (Barnett, 1997; Coaldrake & Stedman, 1999; Lafferty & Fleming, 2000; Marginson, 1993, 1999, 2000; Marginson & Considine, 2000; Rhodes 2000; Tierney, 2000; Weil, 1999). Academic work may be more complex and more diversified than it was a decade ago, and 'work roles' across academic and administrative groups may be blurring and being re-engineered, but still academic work 'has stretched rather than adapted to meet transformations of the higher education sector' (Coaldrake & Stedman, 1999, p. 9). Coaldrake and Stedman (1999, p. 1) acknowledge that reviews of the higher education sector, at least in Australia in recent years, recognise 'the need for change at an individual or system wide level, but stop short of drawing out the need for change in individual academic work'. Critics of the corporatisation of university management see the centralisation of control as the major determinant of academic work (Lafferty & Fleming 2000, p. 261). Marginson (2000, p. 28) illustrates the influence of globalisation on academic work where:

... globalization also increases the day-to-day pressures of academic life. It creates a faster and more complex existence. It foregrounds certain individual academic attributes, such as those related to technological competence, communications, linguistic

competence (all else being equal, bilingual and trilingual speakers now make better academics than do monolinguals, though it depends what the languages are), cultural diversity, discursive flexibility, and the management of work and multiple role demands. It takes us into territories uncharted, where we make our own new rules, and this in itself imposes a certain kind of strain in an often deeply conservative profession.

He goes on to argue that a further element affecting academic work:

...is the crisis of institutional values and identity in which that work takes place: the destructive standoff in Australian universities between traditional academic cultures and modernizing corporate cultures. This conflict is more apparent in some Australian universities than others, but it is present in all (Marginson, 2000, p. 32).

While there is evidence throughout the literature for this, it is generally not discussed in terms of the relationships between 'lived experience' and the sociological constructs of academic agency and institutional structures. In the context of this paper, critical academics, when they renounce managerialism, do not seek to maintain the *status quo* nor do they long for a return to traditional conservative views of the university and academic work. Rather, their identities as critical teachers and technology innovators compel them to be engaged creatively, taking action, transforming themselves and their practices as they seek to adapt to change in their personal working lives.

Those who are breaking new ground in tertiary pedagogy as early adopters of technology, feel 'marginal' particularly where they do not have around them in the same physical and intellectual spaces, 'a critical mass' of people interested in teaching and technology with whom they can interact and engage in intellectual debates that they believe contribute to the generation of ideas, innovation and the capacity to sustain themselves intellectually and emotionally. This is seen as part of the sociality of academic work where serendipitous conversations create the 'exciting things that can happen with research: casual chats in the corridors' and for many of them while they may have this in their discipline-based research, they 'don't have that with [their] teaching'.

Sennett (2001, p. 175) explores a form of identity in late modernity that particularly concerned 'work and home, the street and the office'. Here he speaks of the way in which 'identity involves a life narrative rather than a fixed image of oneself' illustrating the way in which this occurs has been a concern of the doctoral work on which this paper draws; he emphasises that the 'ever shifting market reality disturbs fixed pictures of self' (Sennett 2001, p. 176). Not only this but 'agency' creating 'voice' as the capacity for interpretive acts enables actors to 'go on in everyday life'. In this sense the university as a public corporation, in administrative areas at least, has in 'many instances sought to eliminate layers of bureaucracy, to operate via work teams and work cells...[yet]...the effort to create more flexible organisation centralises power at the top' (Sennett 2001, p. 186).

In the context of restructuring Australian universities, Lafferty and Fleming (2000, p. 26) conclude that the way in which management has appeared 'as a universalising discourse' has created the 'top-down implementation of structural change in universities signalling the simultaneous centralisation of power and devolution of blame'. In the same vein, Marginson argues that there is (2000, p. 34):

... a serious deficiency in the norms and models of good governance which have emerged to assist universities in their struggle to stay relevant to contemporary conditions. At a time when universities might have helped to pioneer creative organisational structures and indigenous 'learning cultures' capable of great flexibility, they often appear to have surrendered to highly derivative and dependent notions of themselves.

Further he found in a recent major study of Australia universities, that:

...over and over again it became apparent that those in positions of greatest influence in the universities were often fixated on simplistic outside norms of good management. There was a loss of the sense of the distinctive character of universities, a forgetting of what it is that they do, and what makes them different to other institutions, and an undue faith in generic organizational models. There is more here than just benchmarking for excellence. Being useful to business is interpreted as being like business (Marginson 2000, p. 35).

Sennett's (2001, p. 186) interpretation of contemporary managerialist functions in the corporation of late modernity is also relevant where:

...a split opens up between the command function and the response function. That means that an inner core will set production or profit targets, give orders for reorganization of particular activities then leave the isolated cells or teams in the network to meet these directives as best each group can. Those outside the elite group are told what to achieve not how to achieve it. The split between command and response often appears at the moments when an enterprise is trying to remake itself, feeling its way towards another structure. In reality, this equates to a *regime of indifference* (my italics).

In effect, the 'split between command and execution means that power is retained while authority is surrendered' (Sennett 2001, p. 189). How are these kinds of structural and power agendas lived pragmatically and how do social agents engage with them? Sennett (2001, p. 188) argues based on his research that in the flexible corporation workers on what he calls 'the receiving end of the split between command and execution' appear to 'lose what might be called a work-witness' (p. 188). By this he means that the worker labours in a 'vacuum' forced to make sense of his work in ways that become 'internalised'. One might then expect that this would allow the worker to contrive a meaning for work, as desired. However, Sennet argues that:

...without a witness who responds, who challenges, who defends and who is willing to take responsibility for the power he or she represents, the interpretative capacity of the worker becomes paralysed: [that the] lack of witness diminishes the power of agency (Sennett 2001, p. 188).

Giroux (1999, p. 9) speaking in the context of the corporatisation of public education claims that:

...corporate culture is an ensemble of ideological and institutional forces that functions politically and pedagogically to both govern organisational life through senior managerial control and to produce compliant workers, spectorial consumers and passive citizens.

Ewan exemplifies this in relation to his interests in technologies, teaching and multimedia, when he describes himself engaged in a 'struggle':

Those of us working in universities struggle to understand the potential and problems inherent in new media, while rapid social change, organisational and policy changes limit our capacity in almost all that we do. A key challenge we face (in higher education practice), I believe, is in finding ways of engaging reflective practice that protects practitioners adequately from increasingly corporate institutional processes, and which adequately address visions of the future which are troubled, disrupted or may lack a clear path to progress.

Conclusion

Tierney (2000, p. 7) has argued, that the university as an organisation, in seeking solutions to perceived problems, 'far too often, [chooses] the path of least resistance and agrees to a decision that is *bereft of creativity*' (my italics), and moreover, that in such organisational settings where individual academic staff or creative units are committed to innovative strategic action, isolated reform efforts create situations where the

...system freezes. Although individuals may be unhappy with the status quo, they realize that their work toward changing a component of the organization will only result in frustration and failed attempts. Individuals withdraw to their particular units and focus on more microscopic changes such as improving their teaching or perhaps working more collaboratively within their department. Collaborative work at an organizational level

however is eschewed because of a history of previous failures. This organizational culture is particularly worrisome at a time when external pressures expect change.

Evans and Nation (2000, pp. 174-175) have argued that despite the 'immense evidence' that policy directions are pointing to the emergence of 'virtual universities':

The research evidence, however, suggests that in practice we have considerable distance to travel if our objective is to create and maintain reflexive forms of teaching and learning capable of engendering the critical examination and generation of knowledge'

The stories that critical teachers, as technology innovators, tell about their engagement with technology as early adopters, and their progressive disengagement over time, resonates with Sennett's (2001) belief that the power of agency diminishes in the presence of institutional indifference. I do not mean, however, that they necessarily become disengaged with technology and the opportunities they perceive it offers their teaching nor that they become indifferent to their agency as teachers; rather they become disengaged from institutional structures and the associated discourses of 'flexibility' and 'going online'. As Barbara claimed, 'I guess I am disenchanted, the hype is just that and the investment in producing [good technology enabled teaching] too sparse'. Ewan, for example, claimed that:

I felt part of and close to various groups of people, tasks and kinds of work (who and which were for me, the 'university' i.e. that which was most worthwhile, of quality, congenial) but also increasingly alienated from the institutional facade and from those who took it upon themselves to 'represent' the University to others (which I saw as unproductive, self-important). The gap was too much for me to bridge on a daily bases. I got caught between a probably outmoded and idealistic vision of the University and the new bureaucracy that is the contemporary University.

Current organisational structures in higher education reflect managerialist approaches in the work and policy discourses of corporatising universities. Such discourses tend to commodify non-conservative and non-traditional forms of teaching and research in ways that leave us wondering with Weil how '...increased subject driven quality control and standard setting' that is one characteristic feature of contemporary universities, will be able to 'generate the risk taking that is integral to maintaining a responsive and innovative system' (Weil, 1999, p. 22). The contemporary institutional climate in the higher education sees the demands of flexibility, excellence, public accountability and strangulating financial constraints in disconcerting coexistence in ways that has serious implications for the lives of critical teachers as technology innovators and the practice of critical pedagogy.

Academics as early adopters of technology engaged in critical approaches to their teaching; live dialectically within yet outside, the institutional structures of the academy. Such structures claim to support the work in which they are engaged within a rhetoric of 'flexibility' and 'going online'. Yet for these academics the practice setting of everyday life is one of contestation. While Sennett's (2001) conception of structures of indifference seems helpful in this context, it may also be that the 'lack of witness' creates a more *personally strategic* type of agency rather than a *diminishing power of agency*. Perhaps it means that agents, in taking a particular course of action, serve to *redirect* the power of agency in order to maintain ontological security and their identities as autonomous agents within structures of control that characterise the contemporary academy.

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