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Watching Learning From Behind Closed Doors: The Impact of Surveillance on Student Online Behaviour

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Abstract: Universities are heavily investing in developing their online infrastructure in order to enhance flexible learning options and the overall student learning experience. Coinciding with the adoption of these technologies has been the emergence of new online activities that present the potential for unobtrusive modes of surveillance. This study offers a preliminary investigation into the impact of such modes of surveillance on student learning behaviours. Surveyed students indicate that their browsing behaviours, the range of topics discussed and the writing style of their contributions made to asynchronous discussion forums are influenced by the degree to which such activities are perceived to be surveyed by both the institution and teaching staff. This paper addresses the implications of this new mode of governance for learning and teaching and suggests areas of further investigations.

Introduction

In a similar fashion to the nation state, educational institutions have long used a variety of technologies to better understand the populations they govern. Mass education for example, is itself one such technology that effectively brings together disparate individuals in a single place in time and space. The classroom, the playground, the examination – all represent modes of surveillance that Rose (1999) suggests are “designed in to the flows of everyday life” (p. 234) and serve to better produce a *known* student population. Universities have in recent times invested heavily in the integration of online technologies to increase potential student cohorts and enhance the learning and teaching practices implemented in both traditional face to face (F2F), blended and distance modes of education (Kitto and Higgins, 2003). While these systems have been developed for the primary purposes of enhancing the learning experience through increased interactivity and flexibility, the systems have also inherent modes of surveillance (Smith, 1999) that allow for alternative modes of student governance. It is the impact of these modes of surveillance that forms the focus of this paper. Specifically, the following discussion concentrates on how do learning behaviours alter when students are cognisant of surveillance techniques and are student contributions to class discussion forums influenced by surveillance techniques operating at both an enterprise and unit level? To address these questions the paper firstly frames surveillance within a broader societal context, and discusses the impact of surveillance on democracy and higher education. The paper then reports on some preliminary findings and indicates a strategic direction for future research.

Role of Surveillance in Society

Surveillance has long been a component of societal behaviour often enacted amidst a rhetoric concerning community safety and the protection of members from internal and external deviant sources. Essentially the

role of surveillance served to not only group and normalise a population, but to protect the status quo by rapidly identifying

and eliminating the occurrence of “abnormal” behaviours (Koskela, 2000). This served to ensure conformity with societal values, and control both challenges and changes to these values, as well as to member behaviour. Thus, the act of surveilling is often associated with power, as knowledge of “what’s going on around here” imparts expert power as the source of information, as well as potential coercive power through the possibility for the surveilled information to be used to punish (Cheney, *et al.*, 2004). Although surveillance has always been a feature of human behaviour in groups, the development and inclusion of new technologies has resulted in modes of surveillance being more obviously prevalent and apparent within everyday life. Examples such as closed Circuit Television (CCTV) that monitor consumer behaviour in retail outlets; speed and red light cameras that record deviant driver behaviour; employees that are asked to clock in and out of work; and more recently data mining, and Internet browsing behaviours that are monitored through artefacts stored on servers, “spyware” and establishment of “cookies” all represent modes of technologically enhanced surveillance.

As a result of the emergence of information and communication technologies (ICTs), and their associated surveillance capabilities utilised in home computers and institutional networks it is possible for regulatory bodies (management, law enforcement, institutions) to monitor overt behaviours and discourses that occur among individuals (Marx, 1998). These visible and invisible extensions of regulatory power act to monitor culturally deviant behaviour in order to manage the populace and attempt to provide an overt measure of safety.

Surveilling Democracy

The emergence of the Internet resulted in utopian praise espousing democratic ideals through free access to information. Ess (2000) alludes to the democratic ideals and hopes associated with the Internet and computer mediated communications (CMC) in suggesting that:

“In the United States, we are bombarded on almost every level with a consistent message: new technologies will inevitably transform every element of our society, indeed the globe, realizing unprecedented levels of democracy, prosperity, and happiness. Central to the revolution is computer-mediated communication (CMC), which now makes possible degrees of scope (worldwide), speed (instantaneous), and density (text, sound, video, virtual reality) that may fulfil even the most optimistic visions of earlier generations.” (Ess 2000)

While hailed for its potential for universal happiness, prosperity and democracy, the Internet also became a vehicle for uncensored expression and capitalistic behaviour primarily through the early adoption of e-commerce by the pornography industry. The ensuing moral dilemma emerging from the general public and government concerning access to pornographic materials resulted in attempts to censor Internet content (Akdeniz, 1997). Heightened public alarm regarding child pornography has resulted in the policing of Internet chat rooms and reliance on Internet service providers to report deviant activities. Much of the surveillance online occurs (as it had within the physical communities) largely without the explicit consent of those surveilled, such as through spyware and cookie technologies, storing information about the surveilled in databases for potential future analysis. However, the media driven paranoia regarding access to deviant Internet content and/or exploitative people, and especially the potential for harmful effects on children, has seen a number of opt-in surveillance technologies to allow caretakers to control access. Consequently, the development and integration of surveillance technologies have become a prominent and lucrative business. A pertinent example can be found in the commercial software program Net Nanny which is installed on home computers to reduce incidental access to public deemed immoral sites; the following is an extract from its advertising:

- “Net Nanny is the only parental control software with family-safe **filtered search**.

- Net Nanny is the most **trusted** name in parental control software. In a study of 1,600 parents commissioned by LookSmart, Net Nanny outscored AOL and Norton by more than 2-to-1.
- Net Nanny protects your family and your **privacy**. Net Nanny blocks illicit material, games, and file-trading and keeps families' private information from predators.” (Emphasis as depicted in original source) [Online]

http://www.netnanny.com/products/net_nanny_5/features.html [Accessed 29 March 2005].

The ability to monitor home computers has been an extension of the proliferation of surveillance technologies developed for auditing and accountability purposes in the workplace. There has been a proliferation of literature investigating the impacts of surveillance in the workplace as a result of the burgeoning deployment of information and communication technologies (ICTs) and the associated surveillance capabilities attached to these new mediums. Bryant (1995) argues that the current emphasis on globalisation and competition has had a direct influence on employee monitoring and the subsequent emphasis of power relations between the corporation and the employee. Furthermore, the author attests to the notion that the integration of new technologies has permitted a more extensive and obtrusive surveillance of employee work ethics and behaviours.

Although modes of surveillance have become more overt the technologies employed have become increasingly specialised. Consequently, while the general public are more cognisant of the possibilities and modes of surveillance available and employed within the workplace, they remain relatively ignorant of the information that may be captured and analysed. Nevertheless, as Foucault (1991) insists, people are able to resist the forces of power, and are partly free to undermine the technologies and apparatus which serve to regulate and control human thoughts and behaviour. While categories such as “democracy” are generally understood as being stable, they are also subject to transformation and revision. The moral panic surrounding the ‘misuse’ of the internet, for instance, actually works towards diminishing the notion of freedom of expression, one tenet of ‘democracy’. Power in relation to notions of surveillance is fluid and does not always equate to traditional hierarchical frameworks and their corresponding levels of influence i.e. the subjects of surveillance have agency in devising increasingly sophisticated means of resistance.

Surveillance and Higher Education

Within educational environments, students from early schooling are habituated to surveillance and the institutional rules, values and regulations. This ongoing pattern of control helps to produce manageable, obedient individuals and is further facilitated by the rules of attendance and operation – class timetables, fragmented and classified disciplines (Barrow, 1999). Although surveillance is often reported in negative connotations, the affordances of new technologies can be utilised to enhance teaching and learning practices. For example, Palloff and Pratt (2003) extol the virtues of monitoring discussion forums for the intent of facilitating the development of an online learning community. The surveillance measures in this instance assist in the identification of students who may require additional scaffolding and support through either interpretation of posted messages or via the monitoring of attendance. Similarly, Marzo, *et al.* (2002) suggests that the use of surveillance technologies to store user behaviour (navigation, sites visited, frequency, etc.) can be implemented as a resource for practitioner reflection in order to enhance future practices. Regardless of the positive or negative aspects associated with surveillance the advent of ICTs designed to supplement pedagogical practices has added an additional level of surveillance and the regulation of power within educational contexts.

Kitto (2001), in discussing Foucaultian notions of the panopticon, notes that it is not only the social interactions translated through power relations that enable a form of surveillance and hence imposed self regulation and discipline, but the association and interaction with the technology that also results in the classification of the student as an object. For example, the use of the student card contains identifiers such as an assigned student number which indicates various administrative rights to access services such as computer labs, library and student services. Participation in discussion forums is based on specific

enrolment and student name, and class contributions are interpreted and classified by peers and academic staff in order to establish an associated identity for future recognition.

Educational institutions have developed policies and regulations regarding the use of Internet and communication technologies to enforce authorised behaviours. While the technology explicitly supports access to information, the nature of the implementation of the technology and associated activity is designed to regulate behaviour and allow for surveillance. Students and staff accessing information external to the institution are generally required to authenticate via a provided username and password. Above the stated aims of supporting the business processes of education (controlling access to facilities for those who pay fees), the process of authentication serves to monitor Internet behaviour (sites visited, amount downloaded, content uploaded) and where necessary provide evidence for any ensuing legalities resulting from dismissal, student harassment, etc. Similarly, within the Queensland University of Technology (QUT) Australia, student published interactions via the in-house proprietary learning management

system are recorded and tracked. These interactions include discussion forum contributions, uploaded files, and participation in synchronous computer mediated communications.

The manner in which staff and students adopt technologies and participate in online activities are mediated via behaviours endorsed by the institution and through mechanisms of surveillance that ensure deviant activities are ostracised from mainstream activity. Modes of surveillance in computer mediated communication are enacted through analysis of chat logs, forum contributions and within the Universities proprietary Learning Management System the functionality to approve or auto approve forum contributions prior to release. This study aimed to investigate the impact of surveillance on student learning behaviour within the context of such overt modes of surveillance enacted within the institution. Specifically, the study addressed the questions:

- what is the impact of surveillance on student behaviour when accessing university facilities; and
- what is the impact of surveillance on student learning behaviour when participating in class discussion forums?

Methodology

In order to address the research questions the study firstly sought to gauge the degree to which students were aware of modes of surveillance that operate within the universities online facilities and secondly to assess the extent to which students perceive they change their behaviour as a result of such surveillance techniques.

A preliminary investigation was conducted to ascertain the degree to which University students are cognisant of University policies relating to information and communication technologies and how this influences learning behaviours. Thirty students currently undertaking Early Childhood studies in the Faculty of Education, Queensland University of Technology, were presented with a seven-item likert survey. The survey specifically addressed students' awareness of two prominent modes of surveillance within the university online information systems – namely the Information Facilities Policy which details the student requirements for access to University technologies and the Online Learning and Teaching (OLT) system which provides students and academic staff access to faculty developed learning content and activities. The survey also assessed the students' perceived degree of modification of their learning behaviour (1-4 likert scale) in relation to their cognisance of the two modes of surveillance.

The information facilities policy

The information facilities policy is a University wide policy detailing the acceptable behaviour for students and staff when accessing University technologies such as computer labs, internet, library resources and the OLT system. The policy requires students to obtain a student username and password before access can commence. Once this is obtained all student Internet activities are monitored including sites visited, size of downloads, session times and duration as well as content uploaded. This study surveyed student awareness of the existence of the information facilities policy.

Online Learning and Teaching System

The OLT system was initially implemented to provide staff and students with additional online supplementary resources such as lecture materials. The ensuing evolution of learning management software has resulted in OLT mimicking commercial developments in the field so that now the system currently has the capacity for rich interactive online experiences through the incorporation of CMC, integrated media, group work areas and enhanced design and navigational aids. A component of the development has been to monitor staff and student use in order to focus financial and human resources in areas of most demand and to predict future patterns of user behaviour. Evaluations regarding OLT usage among QUT staff have indicated that the discussion forum is the most utilised OLT resource, with staff integrating on average 1.4 forums per Unit of study (OLT evaluation Jan- Mar 2005).

Consequently, in the QUT context, discussion forums are an important resource for the enhancement of learning and teaching providing a valuable communication link between both staff and students and peer to peer. Although the discussion forum is heavily utilised for enhancing learning and teaching activities, concern among academic staff regarding student contributions and postings of misinformation leading to student confusion prompted the development and integration of an approval stage for all contributions to the forum. Thus, the in-house developed OLT discussion forum has the optional facility for academic staff to approve student contributions prior to release.

While the majority of staff do not enforce this added measure of surveillance, the investigation of the influence of this facility on student behaviour provides valuable insights into the impact of increasing degrees of surveillance techniques when comparing the information facilities policy with the discussion forum approval process. This study surveyed students undertaking a unit of study where the academic staff member included the discussion forum approval process as a component of the learning and teaching activities implemented for the unit.

Findings

Student awareness of surveillance

The preliminary results indicated differences in student awareness of the two investigated modes of surveillance – the information facilities policy and the ability for academic staff to approve forum contributions prior to release. Ninety (90%) percent (n=30) of those surveyed indicated an awareness of the information facilities policy while seventy six (76%) percent (n=29) indicated that they were unaware of the ability for academic staff to approve or disapprove forum contributions (Figure 1).

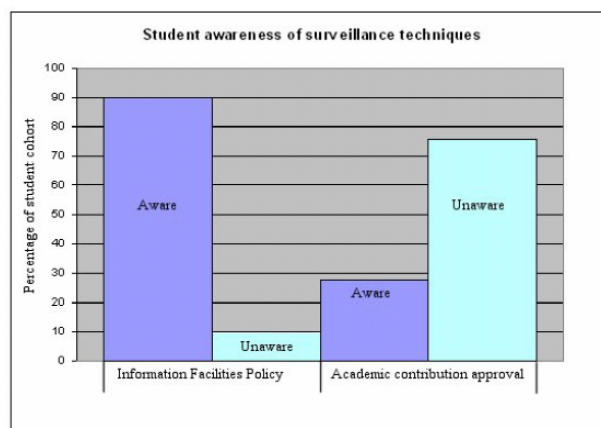


Figure 1: Student awareness of surveillance techniques employed with in the university

This latter result was surprising given that the students surveyed had their forum contributions monitored and approved by academic staff prior to release, consequently all student contributions automatically receive a confirmation message noting:

“The resource has been added but requires approval by a website administrator before it can be displayed”

A possible suggestion for this is that the terminology used in the confirmation message resulted in a lack of transference of understanding that the website administrator is analogous to the academic staff member responsible for the unit. Further investigation into the number of posted messages to ascertain overall use of the forum by the student cohort revealed 222 messages (12/04/05) within 5 weeks of the unit. Thus, it is unlikely that the students surveyed were unaware of the contribution approval process as it is more likely that students have not equated the approval process with the academic staff member. The overwhelming student awareness of the information facilities policy is suggested in this paper to be a result of the student requirement to acknowledge the policy prior to the administration of a username and password. The password is required to be regularly updated hence students are required to continuously acknowledge the presence of the policy with each update.

Impact of surveillance on student behaviour

The survey also investigated the perceived impact of the various techniques of surveillance on student use of the university online facilities. To assess the impact, two levels of surveillance were examined. The impact of the information facilities policy on student browsing behaviour indicated that students alter their behaviour only slightly when using university facilities. No significant difference emerged when comparing students that are either cognisant or unaware of the information facilities policy. Similarly no perceived difference was observed between cognisant and unaware students when investigating the impact of policy on the range of topics discussed in forums. Overall, students responded that they altered the range of topics discussed within a class forum “a little” in recognition of the university policy. The marked difference occurred when investigating the impact of the policy on the writing style of students. Students unaware of the policy indicated that they altered their writing style to a high degree (3) in contrast to students who noted they were cognisant of the policy indicated a small change only, in response to the policy (2.18). It is hypothesised that students unaware of the policy tend to act more conservatively and self-regulate and discipline their behaviour. Students cognisant of the policy are aware of the scope of restrictions that are enforced and monitored and therefore adopt a more encompassing style of writing (within defined policy boundaries).

Similar trends were observed when investigating the impact of the academic approval of forum contributions on both writing style and range of discussion topics. Although awareness of the process was in this case opposite to that observed in the information facilities policy (90% aware), students indicating an awareness (24%) demonstrated that they were less inclined to alter behaviour in terms of topics discussed and writing style. Again students that are unaware of the surveillance techniques indicate a greater inclination to alter their behaviour.

Though the results of this study are limited by the number surveyed and the restrictions associated with quantitative data, the study does indicate that student behaviours are influenced by techniques of surveillance. Further qualitative and quantitative investigations are required to substantiate this hypothesis.

Discussion

Universities have invested heavily in the online infrastructure to support both the flexible delivery of resources and enhance the student learning experience. While the literature has sought to largely extol the pedagogical enhancement afforded by the technologies, there is a paucity of literature examining how the implementation of ICTs has altered the relationship between both the university and student and the lecturer and student (Kitto, 2003). The findings from this preliminary study illustrate that both university surveillance measures and lecturer monitoring of class forum discussion does impact on student behaviours. While all students indicated that browsing behaviour, range of topics and writing style is

influenced by the various modes of surveillance, it is those students that are unaware of the surveillance that further restrict and confine their online behaviours. One question arising that now needs to be addressed is why do students with less awareness of regulatory aspects report more change?

One explanation is that students discipline and enforce their own forms of self-regulation. Foucault (1991) suggests that a means of disciplining and managing a populace is through surveillance. Foucault adopts the notion of the panopticon, first described by Bentham as a method of employing constant vigilance with the uncertainty of the presence or absence of the observer. Zuboff, (1988) introduced the term 'information panopticon' to illustrate that the contemporary modes of surveillance utilising electronic methods are free from spatial and temporal constraints. The high profile of an emerging paedophilic discourse in relation to the Internet has been played-out in public forums such as the media with subsequent calls for improved surveillance of the general public and the wide-spread acceptance of monitoring Internet related traffic. With respect to the online environment the specialist knowledge required to understand how such surveillance is enacted is not commonly understood amongst the general public or student cohort.

Consequently, students unaware of the specific surveillance instrument (information facilities policy and academic approval of forum contributions) tend to impose a high level of self regulation in order to safely comply with the perceived regulations.

The results of this study also indicated that students were more inclined to alter their writing style in comparison to browsing behaviour or range of topics discussed in online forum. Hampton and Wellman's (2000) study of a networked residential neighbourhood provides an interesting parallel with respect to the confinements of written message. The authors note that residents did not discuss via the neighbourhood online forum a recent house fire that occurred prior to occupation. All such conversations occurred verbally when the researcher encountered the residents within this community. Goldhaber (2001) notes that written forms of computer mediated communications such as email are more prone to mis-interpretation than face to face communication. When potential misunderstandings through interpretation of the written message, are combined with the current litigious nature of contemporary society, it is understandable why students significantly alter their writing style when conversing with a relatively unknown cohort of other students.

Additional care and attention to messages posted to the forum decrease the possibility of misinterpretation and hence the occurrence of possible confrontations. A preliminary examination of 54 messages posted within the Unit Forum investigated, indicates only 3 spelling mistakes and relatively minor comments pertaining to humour or personal contexts. This cursory examination further illustrates the confinements students impose when discussing unit concepts. A detailed discourse analysis may lead to further understandings of the reasons why students self impose writing constraints.

Conclusions

As universities invest more heavily in developing their online infrastructure in order to enhance flexible learning options and the overall student learning experience, there is clearly the potential for unobtrusive modes of surveillance to impact on the teaching and learning experience. This study offers a preliminary investigation into the impact of particular modes of surveillance on student learning behaviours and indicates that students unaware of the specific surveillance measures enacted by the institution undertake a high level of self-regulation. Surveyed students indicate that their browsing behaviours, the range of topics discussed and the writing style of their contributions made to asynchronous discussion forums are influenced by the degree to which such activities are perceived to be surveyed by both the institution and teaching staff. The implications of this new mode of governance for teaching and learning relate specifically to ensuring students are cognisant of surveillance techniques and the boundaries in which the policies operate and in the manner asynchronous discussion forums are integrated within the pedagogical framework designed by teaching staff.

It is clear that as the Higher Education sector increasingly use a variety of technologies to better understand the student populations they govern, more attention must be given to the manner in which online discussion forums produce a differently governed student subject. By bringing together disparate individuals/students in new virtual spaces such as the discussion forum, traditional notions of educational governance occurring

in singular dimensions of time and space are effectively removed. This study highlights that despite the elimination of established disciplinary mechanisms of educational governance occurring within traditional teaching environments, the discussion forum nonetheless, serves as an effective alternative mechanism of producing the *known* student subject. This study further suggests that additional investigations are required in the comparison of student contributions to discussion forums implemented without the academic approval process and the impact of other forms of online technologies such as email, chat rooms (with and without logged transcripts) and participation in collaborative tasks facilitated through integration of online resources.

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