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The Digital Future of Education

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Editorial: On IRIE Vol. 21

We all remember Plato's famous media critique of writing in his Phaedrus (274-275):

> *But when they came to letters, This, said Theuth, will make the Egyptians wiser and give them better memories; it is a specific both for the memory and for the wit. Thamus replied: O most ingenious Theuth, the parent or inventor of an art is not always the best judge of the utility or inutility of his own inventions to the users of them. And in this instance, you who are the father of letters, from a paternal love of your own children have been led to attribute to them a quality which they cannot have; for this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality.*

Most interestingly, Plato's major concern is not the detrimental impact of this new technique of writing on science, religion or the state. It is its impact on education that worries him most. He does not dispute that truth can also be expressed probably even better in written, he doubts that this way of expressing the truth is useful in the area of leading disciples to its very understanding.

Maybe, one reason for his concern can be pointed out best by taking a look at the original meaning of the notion of education stemming from the Latin word 'educatio' meaning 'leading out'. To educate in that sense does mean less 'pointing to' an insight, some facts or even a truth - what media could accomplish perfectly and the more advanced the media is the more advanced its execution of this task can be assumed - but leading away from the shelter of youth, ignorance and traditional truths that have to be overcome. That truly needs something different: personal interaction and individual guidance on a way nobody knows where it will lead to. Thus education in this sense is the very opposite of 'informatio' – the other Latin term often used for education indeed emphasizing more the bringing into a desired shape using the respective techniques of which writing (and other media) are (excellent) ones.

Now, what is exciting about digital media in education (at least since web 2.0) is that it combines the unprecedented expressiveness of multimedia with the interactivity of the net on a personal as well as on large scale. Thus in fact, it was not the radio that revolutionized formation (as it was expected by many in the beginning of the 20th century) and also not TV so far. Maybe because they have the same deficits in common that Plato already attributed to writing. And maybe, with the invention and fusion of digital media and the internet, everything will be different? In this issue, you finally won't find a digital answer to this question - a pure 'yes' or 'no' - but some fine balancing of the tremendous opportunities and the inherent risks.

Yours,

the editors.

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Johannes Britz, Michael Zimmer:

The Digital Future of Education: An Introduction

Our contemporary information society is reinventing how knowledge is created, organized, accessed, and shared, with far reaching implications for institutions of learning – schools, libraries, museums, and more. Digital technologies facilitate new ways of thinking about learning that acknowledge and nurture individual talents, skills, and interests, as well as fostering connectedness and collaboration.

The rapid development and ubiquity of digital technologies and platforms have pushed the future of education in innovative and unexpected directions. Computers, tablets and smart boards are integrated into classrooms from kindergarten through university; Web-based resources are increasingly relied on for instruction, collaboration, and research; entire courses, classrooms, and universities have moved online; social media platforms are being leveraged to improve student services and communication; big data analytics are used to enhance enrolment and advising services; MOOCs and related online environments provide alluring new learning opportunities.

This special issue of the *International Review of Information Ethics* explores the ethical dimensions, implications, and challenges of the evolving "digital future of education," and approaches these issues from necessarily diverse and multifaceted perspectives.

In his contribution, "The Ethics of Big Data in Higher Education," Jeffrey Alan Johnson contemplates the ethical challenges of the increased use of data mining and predictive analytics in educational contexts, arguing that we must "must ensure both the scientific and the normative validity of the data mining process" in order to mitigate the ethical issues that surround big data. Mark MacCarthy continues this ethical analysis in his article "Student Privacy: Harm and Context," suggesting the need to embrace a contextual approach to ensure that "intuitive context-relative norms governing information flows" in the educational context are respected. In their essay, "The Ethics of Student Privacy: Building Trust for Ed Tech," Jules Polonetsky and Omer Tene complete this discussion of student privacy by arguing for more concrete ethical guidelines and toolkits to ensure transparency and trust in the use of big data.

Maria Murumaa-Mengel and Andra Siibak push our discussion from ethical concerns related to student privacy broadly, to those focused on the impact on student-teacher interactions when social media platforms are introduced in educational contexts. In "Teachers as nightmare readers: Estonian high-school teachers' experiences and opinions about student-teacher interaction on Facebook," the authors note the risks inherent in the use of social media in teaching contexts which might require enforceable guidelines, but they also highlight how social media use by instructors "can have positive influence on students' motivation and participation" and instructors should enjoy free speech rights when using these digital tools for communication. These concerns over speech and intellectual freedom are central to Taryn Lough and Toni Samek's contribution, "Canadian University Social Software Guidelines and Academic Freedom: An Alarming Labour Trend," which analysed the social media policies from nine Canadian universities. Their results are pointedly negative, revealing how "authoritarian management of university branding and marketing" is trumping the "protection of academic freedom in the shift into 21st century academic labour."

This concern over the potential negative impacts of the digital shift in academic labor is brought into sharp focus Wilhelm Peekhaus' reflection, "Digital Content Delivery in Higher Education: Expanded Mechanisms for Subordinating the Professoriate and Academic Precariat." Upon considering the emergence of unique digital education platforms – such as MOOCs and so-called "flexible" learning models – Peekhaus exposes several ethical dilemmas faced by students, faculty, and universities confronted with this "contemporary neo-liberal academic ecosystem." The final contribution, "Digital Education and Oppression: Rethinking the Ethical Paradigm of the Digital Future," by Trent Kays identifies similar concerns with digital education paradigms. While Kays warns that "education done digitally must account [for] the technology used to distribute the oppressive power structures inherent in traditional education," he provides an optimistic new paradigm to promote liberation through digital education.

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Jeffrey Alan Johnson:

The Ethics of Big Data in Higher Education

Abstract:

Data mining and predictive analytics—collectively referred to as "big data"—are increasingly used in higher education to classify students and predict student behavior. But while the potential benefits of such techniques are significant, realizing them presents a range of ethical and social challenges. The immediate challenge considers the extent to which data mining's outcomes are themselves ethical with respect to both individuals and institutions. A deep challenge, not readily apparent to institutional researchers or administrators, considers the implications of uncritical understanding of the scientific basis of data mining. These challenges can be met by understanding data mining as part of a value-laden nexus of problems, models, and interventions; by protecting the contextual integrity of information flows; and by ensuring both the scientific and normative validity of data mining applications.

Agenda:

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Big Data in Higher Education

Data mining and predictive analytics are increasingly used in higher education to classify students and predict student behavior. Institutions of higher education, in some cases working with commercial providers, have begun to use these methods to recommend courses, monitor student progress, individualize curriculum, and even build personal networks among students. Data mining, as a major part of business intelligence, is held to be part of a radically different future for higher education in which the ability to predict individual outcomes revolutionizes management and allows institutions to better understand their students and their needs by taking advantage of the vast trove of data that institutions generate in their operations.[1]

These techniques encompass practices and methods that are quite different from and present different challenges to its users than do inferential research methods—often called "academic analytics."[2] There are four key differences:

1. Data mining eschews the hypothetico-deductive process, relying instead on a strictly inductive process in which the model is developed a posteriori from the data itself.

2. Data mining relies heavily on machine learning and artificial intelligence approaches, taking advantage of vastly increased computing power to use brute-force methods to evaluate possible solutions.

3. Data mining characterizes specific cases, generating a predicted value or classification of each case without regard to the utility of the model for understanding the underlying structure of the data.

4. Data mining aims strictly at identifying previously unseen data relationships rather than ascribing causality to variables in those relationships.[3]

These reasons highlight the specific value of a strictly inductive, non-hypothesis driven approach: data mining works for the quite different purposes for which it was designed.[4] The aim of data mining is to identify relationships among variables that may not be immediately apparent using hypothesis-driven methods. Having identified those relationships it is possible to take action based on the fact that the relationships predict a given outcome.

The growing interest in data mining is spurred, in part, by the increasing quantity of data available to institutional researchers from transactional databases, online operations, and data warehousing.[5] Baker suggests four areas of application: building student models to individualize instruction, mapping learning domains, evaluating the pedagogical support from learning management systems, and scientific discovery about learners.[6] Kumar and Chadha suggest using data mining in organizing curriculum, predicting registration, predicting student performance, detecting cheating in online exams, and identifying abnormal or erroneous data.[7] More recent

[1] Baker, "Data Mining for Education"; Stirton, The Future of Institutional Research – Business Intelligence.

[2] Baepler and Murdoch, "Academic Analytics and Data Mining in Higher Education."

[3] Two Crows Corporation, Introduction to Data Mining and Knowledge Discovery.

[4] Baker, "Data Mining for Education."

[5] Baepler and Murdoch, "Academic Analytics and Data Mining in Higher Education."

[6] Baker, "Data Mining for Education."

[7] Kumar and Chadha, "An Empirical Study of the Applications of Data Mining Techniques in Higher Education."

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applications have embraced such suggestions, exploring course recommendation systems, retention, student performance, and assessment.[8]

In spite of significant methodological problems with these pilot studies, however, data mining is gaining hold operationally at the institutional level, predicting student success and personalizing content in online and traditional courses; making Netflix-style course recommendations, monitoring student progress through their academic programs, and sometimes intervening to force student action; modeling campus personal networks and student behavior with an eye toward identifying lack of social integration and impending withdrawal from the institution based on facilities usage, administrative data, and social network data. Admissions and recruiting are also growth areas for data mining. [9]

Challenges of using Big Data in Higher Education

Consequentialism: The Immediate Challenge

Nearly from its inception, data mining has raised ethical concerns. Once implemented, a series of challenges for both the individuals who are the subjects of data mining and the institution that bases policy on it arise as consequences. The most prominent of these are the related problems of privacy and individuality. The privacy of subjects in a data mining process is primarily a factor of information control: a subject's privacy has been violated to the extent that the opportunity for consent to collection or use of information is absent or in which personal information flows are used in ways that are incompatible with their social context.[10] The potential of data mining to violate personal privacy spans a range of applications. Mining data allows one to infer information about the data subject that some would not be comfortable divulging themselves, and worse allows for the manipulation of or discrimination against the subject, for example, by price discrimination and restrictive marketing.[11] These risks are very much present in higher education applications of data mining. Course recommendation or advising systems that consider student performance are a way of developing a comprehensive picture of student performance, in essence, an electronic reputation that the institution maintains and makes available to faculty and staff through dashboard and stoplight processes and administrative rules. Arizona State University's effort to identify students who intend to transfer is clearly not information that students would consistently want to divulge, as one ASU student reported.[12]

Privacy concerns can easily give way to challenges to individuality. To be sure, such challenges are not new; older techniques that describe central tendencies and typical relationships can easily be seen as contributing to a collectivization of subject, where all are treated identically based on the assumption that they are all "typical" students. Data mining can go far toward overcoming this because it recognizes and models diversity among subjects.[13] But while academic analytics tends to collectivize the students by treating them all identically to the central tendency case, data mining has a tendency to disaggregate the whole individual into nothing more than the sum of a specified set of characteristics. Data mining can create group profiles that become the persons represented, treating the subject as a collection of attributes rather than a whole individual and interfere with

[8] Ayesha et al., "Data Mining Model for Higher Education System"; Baradwaj and Pal, "Mining Educational Data to Analyze Students' Performance"; Llorente and Morant, "Data Mining in Higher Education"; Vialardi et al., "Recommendation in Higher Education Using Data Mining Techniques"; Zhang et al., "Use Data Mining to Improve Student Retention in Higher Education: A Case Study."

[9] Deliso, How Big Data Is Changing the College Experience; Parry, Colleges Mine Data to Tailor Students' Experience; Parry, College Degrees , Designed by the Numbers.

[10] Nissenbaum, Privacy in Context: Technology, Policy, and the Integrity of Social Life; van Wel and Royakkers, "Ethical Issues in Web Data Mining."

[11] Danna and Gandy, "All That Glitters Is Not Gold: Digging Beneath the Surface of Data Mining."

[12] Parry, College Degrees , Designed by the Numbers.

[13] Thomas and Galambos, "What Satisfies Students? Mining Student-opinion Data with Regression and Decision Tree Analysis."

treating the subject as more than a final predictive value or category.[14] Course recommendation systems are just such a case; students are encouraged to do what students like them have done before. Austin Peay's system does not consider student interests, while Arizona State's eAdvising system is built specifically to identify students whose "ambitions bear no relation to their skills."[15] This suggests that the students, far from being understood as individuals, are simply bundles of skills that need to be matched to an outcome.

At its extreme, data mining can undermine individuals' autonomy. Broadly speaking, autonomy can be understood as the ability to critically reflect on and act so as to realize or modify one's preferences, particularly preferences among conceptions of the good. This raises the questions of whether coercion and paternalism are ever justified, questions that are often addressed on the basis of a principle of preventing harm to others, furthering ends that the objects of the paternalism values themselves, or addressing a limited capacity for autonomy on the part of the object.[16] ASU's system of compelling students making insufficient academic progress to change their major is very much coercive, explicitly denying students to opportunity to exercise their own agency.

A softer but probably more common interference with autonomy is seen in Austin Peay's course recommendation system. This system is intended not just to provide information and advice—acting as an informed advisor might—but to remedy poor decision-making by students:

> *"[Provost Tristan] Denley points to a spate of recent books by behavioral economists, all with a common theme: When presented with many options and little information, people find it difficult to make wise choices. The same goes for college students trying to construct a schedule, he says. They know they must take a social-science class, but they don't know the implications of taking political science versus psychology versus economics. They choose on the basis of course descriptions or to avoid having to wake up for an 8 a.m. class on Monday. Every year, students in Tennessee lose their state scholarships because they fall a hair short of the GPA cutoff, Mr. Denley says, a financial swing that 'massively changes their likelihood of graduating.'"*[17]

This is a classic example of paternalism, the "use of coercion to make people morally better."[18] In this case, the institution compels students to be "wise" (in the administration's understanding of what a wise student would do, i.e., make choices that keep their GPA up, maintain financial aid, and maximize the probability of graduating on time) rather than allowing students to pursue a course that reflects their own "unwise" identities and interests (understood implicitly as ignorance and laziness).

An especially complicated form of interference is the creation of disciplinary systems, wherein the control of minutiae and constant surveillance lead subjects to choose the institutionally preferred action rather than their own preference, a system that generally disregards autonomy. Classifying students and communicating the classification to the professor used at Rio Salado College is virtually identical to Foucault's example of the Nineteenth Century classroom[19] and could be expected to have similar effects: encouraging conformity to a set of behaviors and values that the institution has conceived of as successful.

This is not to say that these violations of student autonomy are inherently unacceptable, or that one might, though conscious attention to autonomy in system design, craft systems that promote autonomy and provide informed advising without paternalism or disciplinarity. One might justify these interferences with autonomy as preventing waste of taxpayers' money (a harm to the taxpayer, arguably), as furthering the educational ends that students presumably have when they enroll, or as guidance for those who are still not fully mature or

[14] van Wel and Royakkers, "Ethical Issues in Web Data Mining."

[15] Parry, College Degrees , Designed by the Numbers.

[16] Dworkin, "Autonomy."

[17] Parry, College Degrees , Designed by the Numbers.

[18] Dworkin, "Autonomy," 363.

[19] Foucault, Discipline and Punish: The Birth of the Prison, 146-149.

lacking information about the consequences of a decision. But it remains necessary to provide such a justification in each case, as violations of the principle of autonomy are generally justified only as exceptions to the broad aim of allowing each person the maximum autonomy consistent with all others also having such autonomy. Such justifications are not present in campus implementations of data mining, as Delany's statement above shows: paternalism is not justified, but rather is itself the justification for interfering in student autonomy. Nor will systems that promote autonomy be realized without paying close attention to the ways existing systems curtail it.

Scientism: The Deep Challenge

The consequential challenges of data mining are the most prominent ones, but they are not the only ones. In fact, the most difficult challenges may be ones of which institutional researchers are least aware. In the process of designing a data mining process, institutional researchers build both empirical and normative assumptions, meanings, and values into the data mining process. These choices are often obscured by a strong tendency toward scientism among data scientists. For philosophers of science and technology, the term refers (almost always critically) either to the claim that the natural sciences present both epistemologically and substantively the only legitimate way of understanding reality, or to instances of scientific claims being extended beyond the disciplinary bounds in which the claim can be supported.[20] Such perspectives introduce the temptation to uncritically accept claims that purport to have scientific backing. Scientism has a long tradition in the social sciences, and especially in the study of education.[21] Critics of scientism in education see a fetishization of the scientific method, which manifests itself in contemporary policies such as *No Child Left Behind* in the United States and the PISA testing regime internationally and mandates "scientific" evidence of effectiveness as an authoritative practice of politics.[22] The preponderance of such methods in education research—and especially in the kinds of studies produced by institutional research offices—point to the assumption that traditional scientific methods are the ideal approach to understanding contemporary higher education.

Scientism is a trap that, if not avoided, can do substantial harm to students. But unfortunately, current examples of data mining in higher education have embraced, rather than rejected, scientism. A non-scientistic perspective critically evaluates methods and evidence before taking action upon it. But the casual attitudes toward causality and the ignorance of even statistical uncertainty in the academic literature on data mining in higher education suggest that the authors have taken an uncritical attitude toward the underlying science of data mining. Assuming that the relationships uncovered by data mining are inherently causal and reasonably certain can lead to ineffective actions and actions that reinforce rather than interdict causal mechanisms. Rio Salado College's lack of success with intervention after having identified a relationship between first-day login and online course success is telling. The institution assumed that the relationship; encouraging students to log in on the first day would thus increase their likelihood of success. The encouragement, in the form of a welcome email, had no effect, supporting an alternative explanation that sees both course success and first-day login as caused by students' self-motivation. While this intervention is unlikely to harm, at the least an opportunity has been missed to make an effective intervention.

The problem of scientism in data mining goes deeper than just poor methodology. Part of the scientist epistemology is the claim that science is objective, and thus it—and its products—are value-neutral. But one of the key recent findings in both the philosophy and the sociology of science is the value-ladenness of science and technology. This is more than just claims of biases in scientific inquiry that deviate from the norms of such inquiry; it is an inherent feature of science and technology that they embody and embed values as they are created within a complex web of technical and social interdependencies.[23] Design intent and assumptions about user behavior are especially significant sources of embedded values in technologies. The connection between

[20] Peterson, "Demarcation and the Scientistic Fallacy."

[21] Hyslop-Margison and Naseem, Scientism and Education Empirical Research as Neo-liberal Ideology.

[22] Baez and Boyles, The Politics of Inquiry.

[23] Nissenbaum, Privacy in Context: Technology, Policy, and the Integrity of Social Life, 4-6.

technological artifact and social purpose suggests that data mining applications in higher education are best understood as part of a problem-model-intervention nexus: In developing models data miners link their own meanings, values, and assumptions to similar ones taken from the problem and the intended intervention. The values embedded in a model nexus become part of the institutional context.

Vialardi and colleagues note that predictive analytic models "are based on the idea that individuals with approximately the same profile generally select and/or prefer the same things."[24] This very behaviorist model of human nature is at the foundation of every data model. While it is generally reasonable, one should note that it directly contradicts the rational utility maximizer model of human nature used in microeconomics or the habitual perspective of behavioral economics, and has very different implications for interventions. This is especially problematic in that interventions often incentivize behavior, a prescription best suited for rational utility maximizers. Similar processes embed more specific values in specific models. Most models are developed with both a problem and an intervention in mind, as can be seen in Austin Peay Provost Tristan Denley's description of the university's course recommendation system presented in section 2.1. The wisdom of a student's choice and the difficulty of making such a choice under these circumstances is part of the model; what it is to predict is not just a choice that the student will like but one which will be, from the institution's perspective, wise in the sense that it conforms to a utility function that values high grades and rapid progress toward graduation.

Practical Ethics for Ethical Data Mining

The importance of these questions, unfortunately, has not been matched by general solutions. But the above analysis suggests the formation of several fragmentary perspectives that can, if not provide solutions, lead data users in higher education to ask questions that will help refine their practices. The first step is to re-think what is meant by data mining, considering it as part of a broad technosocial system, a nexus of problem, model, and intervention built around assumptions, meanings, and values. In practice, this means thinking in terms of policies in which data mining will play a role and not merely in terms of mathematical modeling techniques. The ethical questions presented in data mining will be clearer when building a data mining model is situated in relation to the perceived need for the policy, the interventions that are proposed, the expected outcomes of the policy, and the ways in which the policy will be evaluated; problems such as incompatibilities between the assumptions of the data model and those of the intervention will only be apparent from this perspective.

The empirical and normative problems presented by scientism run parallel to each other, a parallel that suggests a path toward addressing the challenge. In both cases, the question is one of whether the model's conclusion supports the interpretation given it. This is a familiar problem to empirical researchers in higher education: the problem of validity. One can thus think of scientism as an attitude that compromises (or, at the least, assumes rather than demonstrates) the validity of the problem-model-intervention nexus either empirically or normatively. Kane presents an approach to validating measures based on a series of inferences from observation to construct that can serve as a model for data mining applications.[25] In developing or applying a data mining process researchers should ask themselves if the chain of inference from problem to model to implementation is sound, both scientifically and normatively. Where it is, ethical problems originating in scientism are likely to be averted. Where it is clearly flawed, researchers should change their approaches. But most importantly, where there are gaps in the reasoning researchers should identify the assumptions that allowed those gaps to be bridged uncritically and then subject those assumptions to critical analysis. Practiced iteratively, this approach can minimize the effects of scientism in data mining.

Consequential challenges are more directly amenable to analysis if only because many of them have been addressed in other contexts. One approach to these problems that allows for a comprehensive analysis without an extensive technical background in ethics is to consider the contextual integrity of data mining practices.[26]

[24] Vialardi et al., "Recommendation in Higher Education Using Data Mining Techniques," 191.

[25] Kane, "Validation."

[26] Nissenbaum, Privacy in Context: Technology, Policy, and the Integrity of Social Life.

As technosocial systems, the context of information flows is as much a defining feature of data exchange and use as the content of that information flow. While Nissenbaum intended contextual integrity to be a way of addressing privacy concerns, it can be expanded to include respecting the integrity of the individual and of the university. As actors within the informational context, changes to how the actors understand themselves are equivalent to changes in the actors, and the actors' goals and values are themselves part of the context whose integrity is to be maintained. Contextual integrity can thus be used to understand a broad range of ethical problems in the flow of information; changes in this context that are not supported by its underlying norms are violations of the contextual integrity of the information flows, and require justification distinct from that which justifies existing practices.

Conclusion

There is no question that data mining can be useful in higher education. Many students' struggles with courses and programs have revealed the need for guidance that is tailored to their unique circumstances. Processes that replace general theories of how all students behave with ones that recognize their diversity while basing decisions on rigorous, reliable processes are a central tool in promoting academic success and graduation. With a wide range of social actors recognizing (for better or worse) that allowing large numbers of students to fail is an inefficient use of resources, the potential of data mining to improve the efficiency of higher education cannot be dismissed.

But that efficiency comes with risks; the "brave new world" of Shakespeare can easily become Huxley's *Brave New World*. Data mining done well presents challenges to both individuals and institutions, and because of scientistic attitudes it is often done poorly at great cost, both practically and morally. Institutional researchers must minimize this risk. To do so, institutional researchers must understand data mining as part of a technosocial whole that spans the entire policy process. They must ensure the contextual integrity of information flows to protect the actors involved in data mining. And they must ensure both the scientific and the normative validity of the data mining process. Done properly, institutional research can secure these gains without compromising its commitment to the good of students.

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Mark MacCarthy:

Student Privacy: Harm and Context

Abstract:

This paper constructs a model of privacy assessment drawn from the context and harm approaches to privacy and applies it to the privacy issues raised by predictive modeling in education. This student privacy assessment involves assessing departures from existing norms of information flow embedded in the social context of education; assessing risks of harm to specific individuals or classes of individuals through unfair or unjustified discrimination; understanding the risk of adverse feedback effects on the aims and purposes of education itself; and the extent to which privacy issues mask more fundamental conflicts over educational values. The paper does not attempt to adjudicate these controversies but rather provides the conceptual and evaluative tools that might facilitate productive discussions.

Agenda:

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Introduction

Recent controversies over increased collection and analysis of student information to improve learning have highlighted concerns about student privacy. This paper looks at these student privacy controversies through the lens of a privacy assessment model drawn from the theory of contextual integrity and the harm framework.

Education is on the verge of dramatic changes in the collection, flow and use of student information made possible by vast improvements in data aggregation, storage capacity and processing tools. Predictive analytics from adaptive learning software can individualize and personalize learning. A combination of demographic and student-learning data can predict which students might fail in a class or drop out of school entirely.

The harm approach would be to use those techniques that seem to cause little real harm and have the potential for substantial improvements in student learning. It seeks to protect individuals from tangible harm associated with information collection and use and treats an information practice as legitimate absent a showing of such harm. It would counsel caution when the use of predictive modeling in education could unfairly affect a student's life chances or involves invidious discrimination that reproduces the prejudices of the past in a new technological form.

In contrast, the theory of contextual integrity counsels caution about transgressive changes that violate intuitive context-relative norms governing information flows. Predictive analytics in education would be suspect to the extent that they depart from informational norms that limit student data collection, restrict student data use to educational purposes and require parental consent and access to records.

A blended framework for student privacy treats both contextual violations and the risk of harm as normatively relevant. It also draws attention to feedback effects that can indirectly threaten educational objectives and the extent to which privacy acts as a proxy for deeper conflicts about the proper goals of education itself.

Privacy Frameworks

Harm

In this approach, privacy policy aims to prevent harm to individuals and classes of individuals. Posner[27] provided an important impetus for this style of thinking with an economic analysis of privacy. Cate [28] distinguishes harmful uses like fraud, which should be prohibited, from harmless uses, which should not be regulated. Privacy rules like consent should be reserved for middle ground cases where the use imposes tangible damage to persons or property. Beales and Muris [29] focus on possible adverse consequences for the consumer and assess the relevant tradeoffs between benefits and costs of information use. MacCarthy[30] divides information uses into those that are so likely to be socially harmful that they must be prohibited or be subject to opt-in permission

[27] Richard Posner, The Right of Privacy, 12 Georgia Law Review 393 (1978) pp.393 - 404 available at http://digitalcommons.law.uga.edu/cgi/viewcontent.cgi?article=1021&context=lectures_pre_arch_lectures_sibley

[28] Fred Cate, Failure of Fair Information Practice Principles, Chapter 13 in Winn, J.K. (Eds), Consumer Protection in the Age of the Information Economy, 2006, pp. 369-375, available at http://www.hunton.com/files/Publication/4100e953-8ce7-47f8-bd91-2338a896a138/Presentation/PublicationAttachment/cca74554-612c-41e0-934f-1372b8a6afcf/Failure_of_Fair_Information_Practice_Principles.pdf

[29] J. Howard Beales, III & Timothy J. Muris, Choice or Consequences: Protecting Privacy in Commercial Information 75 U. Chi. L. Rev. 109 2008

[30] Mark MacCarthy. "New Directions in Privacy: Disclosure, Unfairness and Externalities." I/S: A Journal of Law and Policy for the Information Society 6.3 (2011) pp. 425-512

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and those so socially beneficial that they must be permitted, or be subject to opt-out permission. Wittes [31] focuses on preventing specific and tangible harms to individuals.

Harm is defined in a number of statutes and regulations. The Federal Trade Commission has the authority to take action against an "unfair" practice, which "causes or is likely to cause substantial injury to consumers which is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers or to competition."[32] The Consumer Financial Protection Board has similar authority to prohibit unfair or abusive practices.[33] Both agencies have authority under Fair Credit Reporting Act to regulate the use of inaccurate, outdated or irrelevant information in the context of employment, credit granting, and insurance.[34]

Harm also includes invidious discrimination. Title VII of the Civil Rights Act of 1964 bars employment discrimination based on "race, color, religion, sex, or national origin."[35] The Equal Credit Opportunity Act makes it unlawful for any creditor to discriminate on the basis of "race, color, religion, national origin, sex or marital status, or age."[36] The Fair Housing Act prohibits housing discrimination "because of race, color, religion, sex, familial status, or national origin."[37] The Genetic Information Nondiscrimination Act of 2008 prohibits health insurance companies and employers from discriminating on the basis of information derived from genetic tests.[38] .

Contextual Integrity

In contrast, Nissenbaum[39] treats privacy as an internalized norm embedded in the daily life of people engaged in social pursuits. Privacy is a right to an appropriate flow of information, where appropriate is defined by the context in which the information is generated, disclosed and used. Privacy rules are context-based informational norms that govern the transmission of information and serve to protect the integrity of the context.

Transmission principles are often codified in statutes or vindicated by court decisions but they are not created by these legal procedures, and sometime can conflict with them. Because of this independence from the existing legal framework, informational norms can be the basis for both criticism of existing laws and the establishment of new ones.

This approach provides an intuitive and comprehensive way to think about privacy issues. It explains why improper transfers or uses of information produce outrage. People have strong reactions against privacy intrusions, not because of idiosyncratic preferences, but because privacy intrusions work against widely accepted, entrenched social norms.

The approach also contains a decision heuristic designed to assess new information flows in particular contexts.[40] Before recommending for or against a new practice it calls for locating applicable informational norms and significant points of departure and asking how the new practice affects the achievement of contextual ends and goals. Ascertaining informational norms involves introspection. As in the case of linguistic intuitions among

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[31] Benjamin Wittes, "Databuse: Digital Privacy and the Mosaic," Brookings Institution, April 1, 2011, available at http://www.brookings.edu/~/media/Files/rc/papers/2011/0401_databuse_wittes/0401_databuse_wittes.pdf

[32] 15 U.S.C. 45(n) (2006)

[33] 12 U.S.C. §§ 5481, 5531 & 5536(a)

[34] 15 U.S.C. § 1681a available at http://www.law.cornell.edu/uscode/text/15/1681a

[35] 42 U.S.C. §2000e-2 available at http://www.law.cornell.edu/uscode/text/42/2000e-2

[36] 15 U.S.C. § 1691 available at http://www.law.cornell.edu/uscode/text/15/1691

[37] 42 U.S.C. 3604 available at http://www.law.cornell.edu/uscode/text/42/3604

[38] Pub. L. No. 110-233, 122 Stat. 881 available at http://www.gpo.gov/fdsys/pkg/PLAW-110publ233/pdf/PLAW-110publ233.pdf

[39] Helen Nissenbaum, Privacy in Context: Technology, Policy, and the Integrity of Social Life (Stanford University Press 2010).

[40] Nissenbaum, p. 182

native speakers of a language, the level of agreement can often be extremely high. These norms have a presumptive validity because of their role in upholding the integrity of a context. Still, even if a new practice departs significantly from established informational standards, it can be defended by showing that it achieves contextual goals better or more efficiently.

Student Privacy Assessment

Nissenbaum[41] uses her theory of contextual analysis to assess whether school officials should install a new computerized record system and associated analytical software. Because it stores, processes and transmits more information and different kinds of information, it departs from establish informational practices. However, if it promises to improve student learning in a way that is consistent with the goals, values and purposes of education, then it should be allowed. Transmission of information derived from this school information system to outside parties such as prospective employers needs to balance the conflicting needs of separate contexts.

The discussion below broadens and deepens this style of thinking about privacy, incorporating insights from the harm framework and focusing on harm to the educational context and the clash of educational values.

Predictive Analytics

The Department of Education describes the new computer-based educational resources that record student learning activity and create user models and groupings that improve student learning.[42] Fain describes online learning systems that recommend the next learning activity and also predict how the student will perform on examinations.[43]

The Department of Education distinguishes individualization where instruction is paced to the learning needs of different learner; differentiation where instruction is tailored to the way different learners learn; and personalization where instruction is individualized, differentiated and tailored to the specific interests of learners. [44] Data about individual students and adaptive software are crucial to each of these alternatives to one-size fits all models of learning. Haedden recommends blended learning models, where students spend part of their time with adaptive software, part of their time with groups of similarly situated students and part of their time receiving instruction from a teacher.[45]

The Department of Education issued a report describing the possible use of biometric information for assessing various psychological characteristics linked to effective learning such as grit, tenacity and perseverance. These readings include posture analysis, skin-conductance sensors, EEG brain-wave patterns, and eye-tracking. [46]

Many of these adaptive learning environments are offered independently of school as online services that can be accessed both by individual students outside the classroom and by students in schools as part of their assigned activities.

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[41] Nissenbaum, p. 169-171

[42] Department of Education, Enhancing Teaching and Learning Through Educational Data Mining and Learning Analytics: An Issue Brief, 2012 http://www.ed.gov/edblogs/technology/files/2012/03/edm-la-brief.pdf

[43] Paul Fain, Intel on Adaptive Learning, Inside Higher Ed, April 4, 2013 http://www.insidehighered.com/news/2013/04/04/gates-foundation-helps-colleges-keep-tabs-adaptive-learning-technology#disqus_thread

[44] Department of Education, Expanding Evidence: Approaches for Measuring Learning in a Digital World, Chapter 2, 2013 available at http://www.ed.gov/edblogs/technology/files/2013/02/Expanding-Evidence-Approaches.pdf

[45] Susan Headden, "The Promise of Personalized Learning," Education Next, Fall 2013 / Vol. 13, No. 4 at http://educationnext.org/the-promise-of-personalized-learning/

[46] Department of Education, Promoting Grit, Tenacity and Perseverance: Critical Factors for Success in the 21st Century, February 2013 p. 41 at http://www.ed.gov/edblogs/technology/files/2013/02/OET-Draft-Grit-Report-2-17-13.pdf

Predictive analytics can also be used to find students at risk of failing a class or dropping out. Some digital textbooks compile information on what students read and calculate an engagement index based on these measures. If their engagement index is very low, then teachers can intervene to take remedial action.[47]

Many schools throughout the country use data to identify students who might be at risk of not graduating. Some of these programs apply the Early Warning Indicator and Intervention System that uses attendance records, behavior problems and course performance to measure dropout risk. [48] In one school in 2013, one-third of students flagged for missing school got back on track to graduation. Two-thirds of the students who were having behavioral problems made a turnaround.[49]

IBM's Predictive Analytics Solution for Schools and Educational Systems (PASSES) uses a broader range of factors including demographic variables to identify at-risk students. Timely identification enables schools to intervene early in the process. In Hamilton County Board of Education in Tennessee, for example, graduation rates increased by more than 8 percentage points and standardized test scores in math and reading increased by more than 10 percent. [50] In Mobile County, Alabama the dropout rate has been nudged downward by three percent since the system's introduction. [51]

Informational Norms

The new technologies of predictive analytics implicate informational norms regarding educational purpose, collection limitation and parental consent and access. Some actual and potential uses of these technologies might depart from these norms.

The educational purpose norm limits the purpose of student information collection and use to education. Students reveal information to their teachers in order to receive instruction. Other institutions in society have no or a significantly lesser claim on this information. This norm protects the professional autonomy of educators, allowing them to set their own practices and methods. Existing law validates this norm. The Family Educational Rights and Privacy Act (FERPA) and its implementing regulations do not permit personal information from education records "to be disclosed for purposes unrelated to education."[52]

Predictive modelling used in personalized learning and identification of at-risk students could be used for non-educational purposes. FERPA might well constrain this non-educational use. But the application of FERPA to data derived from online personalized learning programs is not entirely clear.[53]

The collection limitation norm limits the amount and type of information collected from students. Only information that is relevant to education needs to be available to educators. This norm restricts the educational

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[47] David Streitfeld, "Teacher Knows if You've Done the E-Reading," New York Times, April 8, 2013 at http://www.nytimes.com/2013/04/09/technology/coursesmart-e-textbooks-track-students-progress-for-teachers.html?pagewanted=all&_r=1&

[48] Mary Bruce and John M. Bridgeland, "The Use of Early Warning Indicator and Intervention Systems to Build a Grad Nation," Johns Hopkins University November 2011 at http://www.civicenterprises.net/MediaLibrary/Docs/on_track_for_success.pdf

[49] Sammy Mack, "Putting Student Data To The Test To Identify Struggling Kids," NPR, April 08, 2014 at http://www.npr.org/2014/04/08/300587823/putting-student-data-to-the-test-to-identify-struggling-kids

[50] IBM, IBM Predictive Analytics Solution for Schools and Educational Systems,

http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=YTS03068USEN&appname=wwwsearch

[51] IBM, Mobile County Public Schools: Analytical insights help keep students on track, IBM, 2011 p. 5 available at http://www.ibm.com/smarterplanet/us/en/leadership/mobilecounty/assets/pdf/IBM_MobileCounty.pdf

[52] Department of Education, Family Educational Rights and Privacy; Final Rule, Federal Register Vol. 76, No. 232, December 2, 2011 p. 75608 at http://www.gpo.gov/fdsys/pkg/FR-2011-12-02/pdf/2011-30683.pdf

[53] Department of Education, Protecting Student Privacy While Using Online Educational Services: Requirements and Best Practices, February 2014 at http://ptac.ed.gov/sites/default/files/Student%20Privacy%20and%20Online%20Educational%20Services%20%28February%202014%29.pdf

enterprise to its task of instruction and prevents educational institutions from using intrusive information gathering to engage in wider social control. The Protection of Pupil Rights Amendment (PPRA) validates this collection limitation norm by requiring prior written parental consent for the collection of sensitive information including political affiliations, psychological problems, sex behavior or attitudes.[54]

Personalized learning applications raise concerns about excessive collection of student information. Learning devices, computer software and online instructional resources capture vast amounts of highly detailed information about students. This erodes the technological constraints limiting what educators can learn about students. Previously, teachers had no way to know how long a student took to read a book or what his or her eye movements were. They did not know about heart rate or breathing patterns or skin resistance. Now educators can know these things regardless of any proven relevance to education. Even though, as the Department of Education says, "our ability to track factors that influence learning has outpaced careful research on which factors are worth tracking,"[55] the pressure to explore these new technological possibilities means that information gathering will likely go beyond the existing collection limitation norm.

Parental consent is usually required before schools distribute student information to third parties not involved in their student's education. This norm works together with the educational purpose norm to limit the uses of student information. Several laws reinforce this norm. PPRA requires prior written parental consent before allowing the collection of student information for marketing purposes.[56] FERPA requires parental consent for dissemination of student information to third parties except when the third party functions as a school official;[57] or is conducting an audit or evaluation of an educational program;[58] or a study for an educational institution.[59] The Children's Online Privacy Protection Act (COPPA) requires online learning applications directed to children under 13 to obtain verifiable parental consent before collecting personal information.[60]

Potential departures from the parental consent norm involve the wide range of information that is made collected in state level databases for use in personalized learning and some student information collected by online learning applications.[61]

Under the parental access norm, parents have a right to see their children's educational records and rectify any inaccuracies. This norm helps make educational institutions more accountable to parents. FERPA reinforces this norm by providing for parental rights to inspect, review and amend educational records.[62] COPPA also requires online educational applications targeted to children under 13 to provide parental access to the records that they maintain on children.[63]

Parents do not necessarily have guaranteed access to records in the case of online educational programs for those 13 and over and for student information maintained by school districts and state educational departments.

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[54] 20 U.S.C. § 1232h(b)

[55] Department of Education, Expanding Evidence: Approaches for Measuring Learning in a Digital World, Chapter 2, 2013 p. 32 available at http://www.ed.gov/edblogs/technology/files/2013/02/Expanding-Evidence-Approaches.pdf

[56] 20 U.S.C. § 1232h(c)(2)(C)(i)

[57] 34 CFR § 99.31(a)(1)(i)

[58] 20 U.S.C. 1232g(b)(1)(C), (b)(3), and (b)(5)

[59] 20 U.S.C. §1232g(b)(1)(F)

[60] Federal Trade Commission, Complying with COPPA: Frequently Asked Questions, April 2014 at http://www.business.ftc.gov/documents/0493-Complying-with-COPPA-Frequently-Asked-Questions

[61] Department of Education, Protecting Student Privacy While Using Online Educational Services: Requirements and Best Practices, February 2014 at http://ptac.ed.gov/sites/default/files/Student%20Privacy%20and%20Online%20Educational%20Services%20%28February%202014%29.pdf

[62] 34 CFR § 99.10 -99.12; §99.20-99.22

[63] Federal Trade Commission, Complying with COPPA: Frequently Asked Questions, April 2014 at http://www.business.ftc.gov/documents/0493-Complying-with-COPPA-Frequently-Asked-Questions

So there is a risk that predictive modelling information used in these cases will depart from the parental access norm.

Departures from Informational Norms

The possibility of a departure from informational norms does not mean that there is an actual breach of informational norms. For instance, in the Mobile County program for identifying at-risk students parental consent was required for participation and parental access was granted to the database used for the analysis.

The risk that information collection practices involved in predictive modelling might depart significantly from these informational norms explains why Morozov objects to the "creepiness" involved in monitoring what students read[64] and Robbins rejects "the appalling invasion of privacy" involved in biometric monitoring.[65]

The demise of inBloom is also connected to public concerns that the collection of student information has gone beyond accepted educational norms. InBloom, a private non-profit organization supported by the Gates Foundation, aimed to aggregate a wide range of student information for state education departments and local school districts. Their intent was to make this data available to third party service providers to develop educational resources such as dashboards and personalized learning applications. Initially they won contracts from school districts and state education departments around the country. But in 2013, privacy concerns about the increased collection and use of student data led many of their partner educational institutions to withdraw from the program. In 2014, New York State passed a law barring the state education department from continuing its association with inBloom. Shortly after in April 2014 that inBloom shut down.[66]

The informational norms of collection limitation, purpose limitation and parent access and consent have a role in supporting key educational values. They help sustain a delicate balance among the different values, purposes and ends involved in education. For this reason, they are not merely traditional ways of doing things. They are presumptively valid restrictions on how student information should and should not be used. The fact that the new practices involving predictive modelling might depart from these presumptively valid standards means that they face a burden of proof to demonstrate that their use promises to achieve educational objectives.

Educational Effectiveness

More effective educational technology that furthers the objectives and values of the educational context could justify departures from existing informational norms. Systems of adaptive learning have been shown to be effective in increasing student learning. The Department of Education concluded: "…studies have shown that students taught by carefully designed systems used in combination with classroom teaching can learn faster and translate their learning into improved performance relative to students receiving conventional classroom instruction."[67] As noted above, the programs for identification of at-risk students, combined with effective and timely intervention programs have real, measureable effects, increasing student performance on tests and decreasing dropout rates

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[64] Evgeny Morozov, In Soviet Russia, Book Reads You: The Creepiness of Software that Monitors Students' E-Reading, Future Tense, November 27, 2012 at http://www.slate.com/articles/technology/future_tense/2012/11/coursesmart_analytics_whispercast_the_danger_of_software_that_monitors_students.html

[65] Jane Robbins, Common Core and Data Collection, Truth in American Education, April 7, 2014 available at http://truthinamericaneducation.com/privacy-issues-state-longitudinal-data-systems/common-core-data-collection/

[66] Benjamin Herold, "InBloom To Shut Down Amid Growing Data-Privacy Concerns," Education Week, April 21, 2014 at http://blogs.edweek.org/edweek/DigitalEducation/2014/04/inbloom_to_shut_down_amid_growing_data_privacy_concerns.html ; Natasha Singer, inBloom Student Data Repository to Close, New York Times, April 21, 2014 http://bits.blogs.nytimes.com/2014/04/21/inbloom-student-data-repository-to-close/

[67] Department of Education, Expanding Evidence: Approaches for Measuring Learning in a Digital World, Chapter 2, 2013 p. 28 available at http://www.ed.gov/edblogs/technology/files/2013/02/Expanding-Evidence-Approaches.pdf

The Executive Office of the President highlighted the benefits of moving beyond traditional student data for research into learning: "Data from a student's experience . . . can be precisely tracked, opening the door to understanding how students move through a learning trajectory with greater fidelity, and at greater scale, than traditional education research is able to achieve."[68]

There is no absolute standard on how much information on effectiveness is needed to overcome the presumption against departures from social norms of information flow. Mere assertion that student learning might be improved is not enough. Proof beyond a shadow of a doubt is too high a standard. Moreover, evidence varies by type of personalized learning method. Because evidence that certain characteristics predispose students to learn better from different modes of presentation is "sparse,"[69] techniques that rely on this notion are not supported. Biometric measurements are not widely used because they depend on constrained tasks in digital learning environments, are not yet practical in the classroom and evidence of a connection to learning outcomes is just emerging.[70] Practitioners and policymakers need to evaluate the extent to which personalized learning systems and identification of at-risk students have demonstrated enough improvement in student learning so that they pass this particular stage in the assessment process.

Harm to Individuals

Personalized learning techniques pose some risks of individual harm, depending on how they are used. True personalization would not just pace students more effectively or vary educational methods, but would provide different content and potentially different educational opportunities based on an assessment of the student's capabilities. These assessments might be faulty and hard to reverse and so might improperly restrict educational opportunities. Students who are identified as at risk might be stigmatized as less capable which can cause the students to behave in less capable ways and cause teachers to treat the students as if they are less capable. The identification of students at risk might not allow students to remove any harmful record of their failures though improved activity.

Predictive modelling used in eligibility decisions usually raises the possibility of harmful discrimination.[71] Harmful discrimination includes "unjustified discrimination" where faulty data or algorithms put people in the wrong category in error or where they are in the right category, but the category is a protected category like gender, age, or ethnicity which are legally impermissible bases for decision making. "Unfair discrimination" is also objectionable because it deprives people of equal opportunity, or burdens them with additional risk.[72]

Personalized learning techniques raise these risks of data discrimination in education. The algorithms used to select at-risk students might be proxies for protected classes, so that they reinforce historical patterns of discrimination. The predictive factors in personalized learning algorithms might be arbitrary or unfair. Secret factors or scoring techniques might render algorithmic decision making in personalized learning opaque and unaccountable.

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[68] Executive Office of the President, Big Data: Seizing Opportunities, Preserving Values, 2014 at http://www.whitehouse.gov/sites/default/files/docs/big_data_privacy_report_5.1.14_final_print.pdf

[69] Department of Education, Expanding Evidence: Approaches for Measuring Learning in a Digital World, Chapter 2, 2013 p. 34 available at http://www.ed.gov/edblogs/technology/files/2013/02/Expanding-Evidence-Approaches.pdf

[70] Department of Education, Promoting Grit, Tenacity and Perseverance: Critical Factors for Success in the 21st Century, February 2013 p. 45 at http://www.ed.gov/edblogs/technology/files/2013/02/OET-Draft-Grit-Report-2-17-13.pdf

[71] Cynthia Dwork & Deirdre K. Mulligan, "It's Not Privacy and It's Not Fair," 66 Stan. L. Rev. Online 35, September 3, 2013 at http://www.stanfordlawreview.org/online/privacy-and-big-data/its-not-privacy-and-its-not-fair; Tal Zarsky, "Transparent Predictions," University of Illinois Law Review, Vol. 2013, No. 4, 2013. Available at http://ssrn.com/abstract=2324240; Oscar Gandy, The Panoptic Sort Westview Press, 1993, pp. 200–01

[72] Mireille Hildebrandt and Bert-Jaap Koops, "The Challenges of Ambient Law and Legal Protection in the Profiling Era," Modern Law Review 73, no. 3 (2010): 428–460, p. 436

These risks can be mitigated, reduced or eliminated. One response to these concerns would be to validate the personalized learning algorithms used so as to minimize the risk of inaccuracy. Another would be to refrain from using patterns in data for personalized learning and at-risk decisions unless these connections were supported with "underlying theories of causation."[73]Another would be to use statistical tests to detect whether factors in models are for protected classes. The Federal Trade Commission, for example, used statistical techniques to assess whether credit insurance scores were proxies for protected classes in setting automobile insurance rates.[74] Improved transparency practices can also respond to concerns about secrecy and unaccountability.[75]

Harm to the Educational Context

If personalized learning assessments or at-risk identifications become parts non-educational eligibility decisions, the risk of harm to individuals increases significantly. Students could lose access to employment, insurance, credit, or housing. To the extent that personalized learning assessments or at-risk identifications are predictive of competence in these other areas, however, there will be a rational basis to use it for these purposes

Student information used in these contexts would be subject to the range of protections preventing unfair discrimination and decisions derived from inaccurate, outdated, or irrelevant information. But the risk would exist that accurate information from personalized learning assessments or at-risk identifications would deny students significant opportunities later in life.

Evaluating the reasonableness of this risk involves assessing not only the possible harm to individuals but also the risk of feedback effects that can produce harm to the educational context. Nissenbaum draws attention to the possibility that changes in information flows might not only create "possible injustices or harms to individuals" but also harm the "fundamental commitment of the context." [76]

Harm to a context can take place when harm to individuals from information use or violations of entrenched informational norms cause people to withdraw from the context in ways that make it harder to achieve the intrinsic goals of the context. For instance, harm to the medical and scientific research contexts justified the legal ban on genetic discrimination. Fears of genetic discrimination "dissuade patients from volunteering to participate in the research necessary for the development of new tests, therapies and cures."[77]

In a similar way, legal rules and social norms protect the confidentiality of information shared with doctors, lawyers, priests, and psychiatrists because these context would quickly unravel if this confidential information were regularly transferred to police, insurance companies, employers and others seeking to enforce laws or make eligibility decisions about the data subject. External use of social network information for eligibility decisions like employment, insurance underwriting or credit granting might harm these contexts as people share less information on social networks for fear of how it might be used against them.

Releasing personalized learning assessments and at-risk identifications outside of education poses a significant risk of harm to the educational context. Students and parents will want to use the new technologies of personalized learning and early warning systems only if they are assured that their use will not be used against them in other contexts. Employers, advertisers, and insurance companies might have perfectly good reasons to want

[73] Nissenbaum, p. 209

[74] Federal Trade Commission, Credit-Based Insurance Scores: Impacts On Consumers Of Automobile Insurance, July 2007 at http://www.ftc.gov/sites/default/files/documents/reports/credit-based-insurance-scores-impacts-consumers-automobile-insurance-report-congress-federal-trade/p044804facta_report_credit-based_insurance_scores.pdf

[75] Pam Dixon and Robert Gellman, The Scoring of America, World Privacy Forum, 2014 at http://www.worldprivacyforum.org/wp-content/uploads/2014/04/WPF_Scoring_of_America_April2014_fs.pdf

[76] Nissenbaum, p. 176

[77] National Genome Research Institute, Genetic Discrimination at http://www.genome.gov/10002077

access to the student information generated by these predictive models - such information might increase the accuracy and efficiency of their business decisions. But using this kind student information for these non-educational purposes might undermine the trust that students and parents have in the integrity of the educational system. They might respond by avoidance, hostility and withdrawal.

A balance needs to be struck, but with a strong presumption in favour of the current legal regime's prohibition on the sharing of student information outside the educational context. Departing from this presumption in certain special cases might be justified but it would take expert substantive knowledge to understand the goals of education and the likely effects of the external use of new technology on these goals.

Conflict of Educational Values

Education is undergoing polarizing re-thinking including controversial struggles over common core standards, teacher assessment, privatization through school choice, the role of high-stakes testing, the importance of class size, the role of teachers and devices, identification and closing of problem schools, the extent to which education itself proceeds through schools, the design of schools into classes divided by age, the role of schools as providers of workers to business, and the objective of teaching competencies rather than grading performance in courses.

Often the collection and use of student information is crucial in forwarding elements in these educational reform efforts. For instance, Secretary of Education Arne Duncan connected increased data collection to teacher effectiveness assessments, data-driven school closings, common core standards, and assessment of student programs by student earnings as an adult.[78] Those opposed to these education reforms resist the call for increases in data collection about students as a way to undermine the reform efforts that they oppose.

To some critics, personalized learning seems to be the opposite of good educational practices. Brigg (2014) argues "…it dehumanizes those being judged, as well as those making the judgments. It substitutes calculation for human judgment on what should be very sensitive human issues, and thus treats those profiled as objects, as collections of facts, rather than as persons."[79] Haimson objects to the inBloom data collection initiative because "putting kids on computers and subjecting them to canned software programs …is yet another way in which children's education is being mechanized, depersonalized…"[80]

Warner criticizes adaptive learning because "…it turns learning into a program we navigate, the software telling us what we need every step of the way. We wait for the software to tell us what's next. It removes agency from the equation, telling us what we "need," rather than letting the individual ask and then answer their own questions."[81]

Commercialization is also a hidden driver of student privacy controversies. Cody articulates this anti-commercialism: "It is understandable why people who have made their fortunes on the transformation of commerce and industry through the almighty combination of computers, software, data and the internet would project a similar revolution in our schools."[82]

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[78] Arne Duncan, Robust Data Gives Us the Roadmap to Reform, June 9, 2009 at http://www2.ed.gov/news/speeches/2009/06/06082009.pdf

[79] Saga Brigg, "Big Data in Education: Big Potential or Big Mistake?" Innovation Excellence, January 29, 2014 http://www.innovationexcellence.com/blog/2014/01/29/big-data-in-education-big-potential-or-big-mistake/#sthash.HQMT1MmF.dpuf

[80] Leonie Haimson, "Statement on inBloom's overdue demise," NYC School Parents April 21, 2014 at http://nycpublicschoolparents.blogspot.com/2014/04/statement-on-inblooms-demise.html

[81] John Warner, "We Don't Need No Adaptive Learning," Inside Higher Ed, April 4, 2013 http://www.insidehighered.com/blogs/just-visiting/we-dont-need-no-adaptive-learning#ixzz31nbs1jz5

[82] Anthony Cody, "The Classroom of the Future: Student-Centered or Device-Centered?" Education Week Teacher, April 6, 2014 http://blogs.edweek.org/teachers/living-in-dialogue/2014/04/the_classroom_of_the_future_st.html

Many feel that advertising and marketing commercial products has no place in schools. But some local schools and school districts allow it in school billboards, newspapers, yearbooks, and cafeterias. This conflict over advertising does not implicate student privacy unless the ads are targeted using student information, a practice barred by FERPA's prohibition on non-educational uses of student information and addressed directly in the Markey-Hatch draft student privacy bill[83] and the Student Online Personal Information Protection Act introduced in the California Senate in February 2014.[84]

There is a question whether student information should be used for developing and improving educational products and services using the same kind of analytic engines that power commercial music and book recommendations for online customers. This dispute turns on differing fundamental attitudes toward commercial activity in education and less about the proper norms for student information flows.

A key insight of the combined harm and context framework used in this paper is that disagreement on informational norms might relate to disagreements about the underlying values of education. Apparent conflicts about the privacy implications of data use by a new educational technology might reflect incompatible visions of what the education should be all about. By focusing our attention of these underlying values as part of a privacy assessment, this way of thinking about privacy enables us to see when it is that privacy is acting as a proxy for more basic clashes in values.

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[83] Senators Ed Markey and Orrin Hatch, S.____ , Protecting Student Privacy Act of 2014, Discussion Draft, May 12, 2014 at http://www.markey.senate.gov/imo/media/doc/2014-05-12_StudentPrivacy_DiscussionDraft.pdf

[84] Senator Darrell Steinberg, SB 1177, Student Online Personal Information Protection Act, February 20, 2014 at http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_1151-1200/sb_1177_bill_20140220_introduced.pdf

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Jules Polonetsky and Omer Tene:

The Ethics of Student Privacy: Building Trust for Ed Tech

Abstract:

This article analyzes the opportunities and risks of data driven education technologies (ed tech). It discusses the deployment of data technologies by education institutions to enhance student performance, evaluate teachers, improve education techniques, customize programs, devise financial assistance plans, and better leverage scarce resources to assess and optimize education results. Critics fear ed tech could introduce new risks of privacy infringements, narrowcasting and discrimination, fueling the stratification of society by channeling "winners" to a "Harvard track" and "losers" to a "bluer collar" track; and overly limit the right to fail, struggle and learn through experimentation. The article argues that together with teachers, parents and students, schools and vendors must establish a trust framework to facilitate the adoption of data driven ed tech. Enhanced transparency around institutions' data use philosophy and ethical guidelines, and novel methods of data "featurization," will achieve far more than formalistic notices and contractual legalese.

Agenda:

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The rapid rise, and startling demise, of inBloom, the high flying, richly financed, foundation backed education technology (ed tech) interoperability solution, bears an important lesson for education policymakers who grapple with balancing big data innovation and privacy and security concerns.[85] Disruptive education technologies promising innovative value propositions for schools, parents and students cannot rely on formulaic compliance mechanisms and legal minutiae to allay public angst around data use.[86] In fact, legal technicalities, including longwinded privacy notices and dense terms of contract, may send out the *wrong* message. If vendors are regarded as being motivated to misuse or sell student information rather than to serve their users with the highest quality educational services, there is little hope for ed tech. Indeed, even with the raging privacy backlash, there was no evidence that inBloom committed any privacy or security violation at all – no data breach, no monetization of student information, no unexpected repurposing of data. Yet this did not stop ed tech critics and parent groups from accusing it of malfeasance ranging from selling children's information to downright identity theft.[87]

To embrace ed tech innovation, schools and vendors must engender an environment of trust and a culture of ethical data use. When stakeholders, including teachers, parents and students, are presented with the value proposition and understand the philosophy around institutions' data management, the flames of dissent will greatly subside. This is why the escalating drumbeat of calls for legislative reform, including more than 100 education privacy bills pending in state legislatures,[88] as well as for tighter contractual obligations,[89] while important, will not solve the problem. To be sure, schools and vendors must comply with laws and existing privacy regulation, but as we explain in *A Theory of Creepy*,[90] social norms are rarely established by regulatory fiat, and laws that fail to reflect techno-social reality do not fare well in the real world. We write that "Part of the problem lies in the incongruity between the availability of digital information about individuals and the opacity of the purposes, uses, and intentions of those accessing such information."[91] To reduce parents' anxiety and teachers' dissent to ed tech solutions, schools must first figure out and articulate their data use philosophy and convey it to relevant stakeholders. As many businesses have learned firsthand, in an area as fraught with social sensitivities and frequent misperceptions as privacy, legal compliance does not make up for a lack of coherent policy vision.

Changes in education

Ed tech is revolutionizing learning environments from K-12 to higher education, from apps for toddlers to massive online open courses (MOOCs).[92] Online educational resources and interactive tools experience hockey stick growth; new social media platforms emerge, connecting teachers, parents and students and providing tools for engagement, learning and class administration; and cloud platforms provide opportunities for cost

[85] Benjamin Herold, inBloom to Shut Down Amid Growing Data-Privacy Concerns, EDUC. WK. (Apr. 21, 2014), http://blogs.edweek.org/edweek/DigitalEducation/2014/04/inbloom_to_shut_down_amid_growing_data_privacy_concerns.html?cmp=SOC-SHR-TW.

[86] Omer Tene, InBloom Wilts Amid Privacy Backlash, Privacy Perspectives, April 22, 2014, available at https://www.privacyassociation.org/privacy_perspectives/post/inbloom_wilts_amid_privacy_backlash.

[87] See Diane Ravitch, Is inBloom Engaged in Identity Theft?, DIANE RAVITCH'S BLOG (Apr. 7, 2013), http://dianeravitch.net/2013/04/07/is-inbloom-engaged-in-identity-theft/.

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[89] Joel Reidenberg et al., Privacy and Cloud Computing in Public Schools, Fordham Ctr. L. & Info. Pol'y (Dec. 2013) [hereinafter CLIP report], available at http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1001&context=clip.

[90] Omer Tene & Jules Polonetsky, A Theory of Creepy: Technology, Privacy and Shifting Social Norms, 16 YALE J. L. & TECH. 59 (2013).

[91] Id, at 71.

[92] See, e.g., BARBARA MEANS ET AL., U.S. DEP'T OF EDUC., USE OF EDUCATION DATA AT THE LOCAL LEVEL: FROM ACCOUNTABILITY TO INSTRUCTIONAL IMPROVEMENT (2010), available at http://www2.ed.gov/rschstat/eval/tech/use-of-education-data/use-of-education-data.pdf; Lev Gonick, The Year Ahead in IT, 2013, INSIDE HIGHER ED (Jan. 3, 2013), http://www.insidehighered.com/views/2013/01/03/predictions-about-higher-ed-technology-2013-essay; Roger Riddell, What Trends Are Shaping Ed Tech in 2014, EDUCATION DRIVE (Feb. 6, 2014), http://www.educationdive.com/news/what-trends-are-shaping-ed-tech-in-2014/223048/.

efficient and secure data storage, interoperability and collaboration. Student performance data is driving next-generation models of learning and measurements for teacher effectiveness; and connected learning is fast becoming a path for access and academic achievement. Information and data are flowing within schools and beyond, enabling a new learning environment and providing much needed analytics to understand and improve the way teachers teach and students learn.

Ed tech

According to Secretary of Education Arne Duncan, student data holds the promise of providing educators with a roadmap for reform: "[Data] tells us where we are, where we need to go, and who is most at risk."[93] The Department of Education has identified using student data systems to help students and improve education as a top national priority.[94] Data driven ed tech innovation provides education institutions with robust tools to improve teaching and instructional methods; diagnose students' strengths and weaknesses and adjust materials and approaches for individual learners; and identify at-risk students so teachers and counsellors can intervene. At the same time, critics fear the emergence of novel risks of privacy infringements, narrowcasting and discrimination, fuelling the stratification of society by channelling "winners" to a "Harvard track" and "losers" to a "bluer collar" track; and overly limiting the right to fail, struggle and learn through experimentation.

Ed tech comprises an ever-expanding group of technologies, product suites, apps, cloud platforms and social networks, which attempt to augment, and in some cases replace, traditional education administration and content delivery systems. They include learning management systems like Blackboard and Moodle, which provide an infrastructure for teacher management and distribution of course content; digital content and open educational resources, starting with Wikipedia entries and culminating with the full fledged curricula of MOOCs; specialized social media platforms, such as Edmodo, which enable interaction between teachers, parents and students as well as content distribution and management of class assignments; and adaptive learning optimization platforms, such as Knewton, which effectively "read" students even as students read and work through problems, tailoring individualized content and assignments to student capabilities and allowing for continual assessment of students' skills, shortcomings and strengths through dynamic, interactive dashboards.

inBloom

InBloom was designed to improve and standardize the connection among widely varied education applications. It allowed schools to centrally store student data in an encrypted, cloud-based system that educators could access to collect data from a variety of third-party vendors. In its mission statement, it promised to "solve a common technology issue facing school districts today: the inability of electronic instructional tools used in classrooms to work in coordination with (or 'talk to') one another." Financed by a $100 million grant from the Gates Foundation and Carnegie Corporation, it engaged school districts in seven states, with Louisiana and New York later joining on a state-wide basis. By 2014, it managed information on millions of children around the country in K-12 schools.[95]

Unfortunately for inBloom, it became a lightning rod for education reform opponents who portrayed it as a cavalier experiment in children's data.[96] It raised difficult questions about the reliance of the education sector on commercial vendors and deployment of big data techniques in an area fraught with concerns about children's

93 Arne Duncan, Robust Data Gives Us The Roadmap to Reform, Fourth Annual IES Research Conference, June 8, 2009, available at http://www2.ed.gov/news/speeches/2009/06/06082009.html.

94 United States Department of Education, Use of Education Data at the Local Level: From Accountability to Instructional Improvement, 2010, available at http://www2.ed.gov/rschstat/eval/tech/use-of-education-data/use-of-education-data.pdf.

95 Natasha Singer, Deciding Who Sees Students' Data, N.Y. TIMES (Oct. 5, 2013), http://www.nytimes.com/2013/10/06/business/deciding-who-sees-students-data.html.

96 Leonie Haimson, It's Apparently the End of the Line for inBloom, but Not Our Fight to Protect Student Privacy, N.Y.C. PUB. SCHOOL PARENTS (Apr. 2, 2014), http://nycpublicschoolparents.blogspot.com/2014/04/parent-power-wins-ny-severs-its.html.

futures. It brought to the fore weighty policy choices, which required sophisticated technology leadership and policy articulation. This eventually led states to backpedal from signed transactions, culminating in the initiative's premature implosion.[97]

InBloom's demise demonstrates the risks inherent in the divisive policy debates raging around ed tech. On the one hand, education reformers seek to revolutionize schools by introducing standardized testing and tools for performance measurement and analysis. They argue that technology and data empower teachers to improve their skills and provide critical feedback about what is or is not working for individual students, classes and schools. On the other hand, education traditionalists claim that education reform should be focused on increasing teachers' pay, hiring subject matter experts and keeping class size small.[98] They warn that ed tech leans in the opposite direction, repositioning teachers as factory line workers who are scored based on student throughput and substituting a preoccupation with test preparation for a culture of learning.[99] The debate continues with reformers claiming that, to the contrary, under the current system, students are treated like widgets while ed tech enables personalization and individual attention to students' unique needs.

The conflation of concerns around privacy and big data with debates about the structure of public education has been counterproductive. In order to facilitate a level-headed discussion of the policy issues arising from the introduction of ed tech into schools, privacy and data security problems should be disentangled from broader education policy debates.

Privacy concerns

Schools have always relied on broad scale collection and use of students' data, aggregating information about students' attendance, grades, disciplinary records, medical conditions, socio economic backgrounds and more.[100] But in reality, education has long been data rich and information poor, collecting information but storing it in formats and silos that made it inaccessible and inactionable. Now, ed tech innovations are making it possible to analyse student data to inform individual and systemic decisions, affecting the delivery of curricula, allocation of resources and accountability. As recognized by the Obama Administration's May 2014 report on data and privacy, "Students and their families need robust protection against current and emerging harms, but they also deserve access to the learning advancements enabled by technology that promise to empower all students to reach their full potential."[101] This part sets forth the main privacy concerns for ed tech reformers.

Third party vendors

Ed tech critics condemn schools for sharing student data with commercial technology vendors.[102] They raise a plethora of concerns ranging from inadequate security controls to monetization of children's information. According to a recent report by the Fordham School of Law's Centre on Law and Information Policy, school vendor contracts with cloud service providers frequently fail to impose data governance and security obligations required under the law.[103]

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[97] Natasha Singer, InBloom Student Data Repository to Close, N.Y. TIMES (Apr. 21, 2014), http://bits.blogs.nytimes.com/2014/04/21/in-bloom-student-data-repository-to-close/?hpw&rref=technology.

[98] See Leonie Haimson, Why Class Size Matters, Parents Across Am., http://parentsacrossamerica.org/what-we-believe-2/why-class-size-matters/ (last visited May 5, 2014).

[99] See DIANE WHITMORE SCHANZENBACH, NAT'L EDUC. POLICY CTR., DOES CLASS SIZE MATTER?,(Feb. 2014), http://www.classsizematters.org/wp-content/uploads/2014/02/207632499-Pb-Class-Size.pdf.

[100] Susan P. Stuart, Lex-Praxis of Education Informational Privacy for Public Schoolchildren, 84 Neb. L. Rev. 1158, 1159 (2006).

[101] "Big Data: Seizing Opportunities, Preserving Values" Executive Office of the President, p.64 (May 2014). http://www.whitehouse.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf.

[102] CLIP Report, supra note 89.

[103] Id.

To be sure, when working with technology vendors, schools cannot be allowed to abdicate their legal responsibilities toward students' privacy.[104] Yet, simply amending vendor contracts and complying with technical data management obligations will do little to advance an environment of trust. Instead, schools must better communicate their data philosophy, why they seek to engage various vendors and what are their information-driven goals. Effective communication cannot be achieved through traditional privacy notices. As the President's Council of Advisors on Science and Technology recently remarked, "Only in some fantasy world do users actually read these notices and understand their implications before clicking to indicate their consent."[105] Rather, data policies must feature front and centre on school board agendas, debated in town hall meetings and discussed in open fora among administrators, principals, teachers and parents.

Commercialization

The use of student data for commercial activities is clearly of concern to parents.[106] Yet opinions differ with respect to what constitutes legitimate commercial activity in schools.[107] Some anti-marketing voices oppose exposing children to *any* commercial content, regardless of whether their personal data is used. They would restrict placing billboards or branding merchandise in school cafeterias or playing fields or serving generalized, non-targeted ads on an online school blog. Others are specifically alarmed by commercial uses of children's *data*, regardless of whether those children are presented with ads. They oppose vendors' use of student information to enhance and improve existing products and services, including education related offerings that could benefit those students' schools.

Many forms of commercialization exist between these two categories. Most observers agree that targeting students with personalized ads or selling their information to third parties is inappropriate. Yet many schools have a decades-long history providing data to yearbook publishers, school photographers, class ring and spirit-wear vendors. And what about marketing new education products or services to students based on their previous performance, for example, recommending an advanced grammar app after a student completes the beginner app? Or leveraging lessons from students' interaction with a product or service app in order to improve another non-education related product or service offered by the same vendor? Clearly, schools acting in concert with relevant stakeholders should debate these questions transparently to form a coherent approach.

More generally, critics fear the growing role of business in education. Warning that technology could turn classrooms into showrooms, they point out that companies that once sold textbooks and testing have now become market leaders in an "industry of learning." Indeed, for-profit MOOCs like Coursera and Udacity have become education institutions in their own right, threatening the traditional business model of non-profit colleges and universities.[108] Increasingly, the debate is focused on whether technology has begun to usurp, or at least transform, roles traditionally fulfilled by teachers and schools.

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[104] Daniel Solove, Big Data and Our Children's Future: On Reforming FERPA, LINKEDIN, https://www.linkedin.com/today/post/article/20140507051528-2259773-big-data-and-our-children-s-future-on-reforming-ferpa

[105] PRESIDENT'S COUNCIL OF ADVISORS ON SCI. AND TECH., EXEC. OFFICE OF THE PRESIDENT, REPORT TO THE PRESIDENT: BIG DATA AND PRIVACY: A TECHNOLOGICAL PERSPECTIVE xi (May 2014), http://www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_big_data_and_privacy_-_may_2014.pdf.

106 Benjamin Herold, Americans Worried, Uninformed About Student Data Privacy, Survey Finds, EdWeek (Jan. 22, 2014), http://blogs.edweek.org/edweek/DigitalEducation/2014/01/american_worried_uninformed_student_data_privacy.html.

[107] See ALEX MOLNAR ET AL., NAT'L EDUC. POLICY CTR., SCHOOLHOUSE COMMERCIALISM LEAVES POLICYMAKERS BEHIND – THE SIXTEENTH ANNUAL REPORT ON SCHOOLHOUSE COMMERCIALIZING TRENDS: 2012-2013, available at http://nepc.colorado.edu/files/trends-2013.pdf.

[108] Massive Open Online Forces, THE ECONOMIST (Feb. 6, 2014), http://www.economist.com/news/finance-and-economics/21595901-rise-online-instruction-will-upend-economics-higher-education-massive.

Big data concerns

The use of data analysis for measurement and optimization inevitably unmasks truths that may be uncomfortable to some, but invaluable for others.[109] Prestigious schools may be exposed as underachievers, university acceptance criteria as systematically biased, and children across their nation as underperforming their peers in other parts of the world.[110]

Big data analysis stokes fear of discrimination and social stratification. Data analytics can render discrimination difficult to weed out, by hiding discriminatory intent behind multiple layers of masks and proxies.[111] As the White House recently observed in its Big Data Report, "algorithmic decisions raise the specter of 'redlining' in the digital economy—the potential to discriminate against the most vulnerable classes of our society under the guise of neutral algorithms."[112]

But big data not only *creates* discrimination; it can also help *discover* it enabling legal mechanisms to react.[113] The White House Report notes, "The same big data technologies that enable discrimination can also help groups enforce their rights. Applying correlative and data mining capabilities can identify and empirically confirm instances of discrimination and characterize the harms they caused."[114]

Enhanced personalization could create echo chambers and filter bubbles that are anathema to education's horizon broadening role.[115] Yet, the vision of adaptive learning pioneered by companies like Knewton promises to help individual students maximize their ability and guarantees disadvantaged learners tailor-made solutions to help them catch up. Ed tech enthusiasts argue that the current status quo, which treats all students alike, is flattening out the education system weighing down on high achievers and leaving struggling students behind.

A solution toolkit

Addressing ed tech policy concerns requires initial separation of disparate policy issues involving education policy, privacy and big data. Ed tech has long suffered from a conflation of concerns around children's privacy with decisions that impact resource allocation among entrenched interest groups. Ed tech threatens to upend the balance between national and local control over education, between education experts and teacher unions, school administrators and parent groups. It stokes parents' fears of monetization and commodification of students' data, in ways that could impact their children's long-term prospects for education and employment.

Some of the privacy problems can be dealt with under the existing regulatory frameworks. Clearly, vendor contracts should be tightened to enhance school control over the purposes of data use; data security must meet standards appropriate to the sensitivity of the data collected; and commercial uses of data outside of the education space must be restricted to comply with the law. Educational systems and ed tech vendors should put in place data governance mechanisms, including the appointment of a chief privacy officer, setting forth

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[109] Richard J. Peltz, From the Ivory Tower to the Glass House: Access to "De-Identified" Public University Admission Records to Study Affirmative Action, 25 HARV. BLACKLETTER L.J. 181 (2009).

[110] See, e.g., Tim Post, Bill Targets Underperforming Minn. Charter Schools, MPR NEWS (Feb. 10, 2014), http://www.mprnews.org/story/2014/02/09/proposed-bill-would-subject-charter-schools-to-more-scrutiny.

[111] See Omer Tene & Jules Polonetsky, Judged by the Tin Man: Empowering Individuals in an Age of Big Data, 11 J. TELECOM. & HIGH TECH. L. 351 (2013).

[112] EXEC. OFFICE OF THE PRESIDENT, supra note 101 at 46.

[113] Liana Christin Landivar, Disparities in STEM Employment by Sex, Race and Hispanic Origin, AM. COMMUNITY SURVEY REPORTS (Sept. 2013), http://www.census.gov/prod/2013pubs/acs-24.pdf; Donna K. Ginther et al., Race, Ethnicity, and NIH Research Awards, 333 SCI. 1015 (2011), available at http://www.sciencemag.org/content/333/6045/1015.full.

[114] EXEC. OFFICE OF THE PRESIDENT, supra note 101.

[115] JOSEPH TUROW, THE DAILY YOU: HOW THE NEW ADVERTISING INDUSTRY IS DEFINING YOUR IDENTITY AND YOUR WORTH (2011). For similar arguments, see ELI PARISER, THE FILTER BUBBLE: WHAT THE INTERNET IS HIDING FROM YOU (2011).

data management policies, and introducing periodic assessments and audits to verify compliance. However, these measures alone will not suffice to set an environment where parents, teachers and policymakers can rationally assess the merits of new technologies and uses of data.

Transparency and Trust

Trust is key for the adoption of innovative technology in the education space. Ed tech solutions cannot succeed if schools, teachers and parents assume that technology vendors are motivated by preying on student information. Schools and vendors will not engender trust simply by tweaking contracting practices or complying with the legal technicalities. Teachers, parents and students cannot be expected to read, much less understand, vendor contracts; and they will likely not be satisfied by an additional contract clause. Rather, trust will be built by enhancing transparency into data practices to both demonstrate to the various stakeholders the benefits and promise of data use and assuage the rampant fears raised by critics..

Schools must actively engage parents and teachers to debate and achieve consensus for a data use philosophy and to advocate their approach to harnessing the power of data. To do so, they must first articulate such policies themselves. As businesses have learned time and again, a proactive approach to communicating with stakeholders about how data is being used is what distinguishes between riding the wave of data innovation and being crushed by it. For many schools, communication with parents about data practices is limited to formal notices and terms of use. More should be done to bring parents along.

Transparency Through Featurization

In order to understand and experience the value of ed tech, parents must have meaningful rights to access their children's data in a clear and usable format. This, in turn, will unleash a wave of innovation for parent, student and teacher applications based on access to data, a process we refer to as data "featurization."[116] Featurization will allow parents to access their children's information through dashboards and interact with it in meaningful ways. Currently the only insight parents have to their child's school life is a quarterly report card, which leaves too much untold. With meaningful access to data, parents would be able to see the inner components of each grade, understand their child's strengths and weaknesses, and engage in meaningful ways with teachers and schools. One existing idea for featurizing data is that of a "digital backpack," allowing students and parents to download data in a usable format to a portable digital vault. Such as backpack would follow students as they transition between grades and schools. It would include traditional transcript information, as well as additional data concerning students' assignments, attendance, behaviour patterns and proficiency scores, providing a more holistic picture their skills and achievements and helping teachers better support their individualized needs. Other solutions include interactive data dashboards and APIs through which parents and students can actively engage data, enabling learning opportunities beyond the classroom and opportunities for further enrichment and growth.

Seeking Ethical Outcomes

In a world of big data, transparency must extend beyond simple access to raw information to provide insight into the inner working of algorithmic decision-making processes. To alleviate concerns about discreet discrimination, policymakers and parents must understand how and to what effect student data is being used. Hence, ed tech should be accompanied by a push to disclose organizations' decisional criteria, *i.e.*, not necessarily the algorithms they use but rather the factors they consider in their decision.[117] One proposal to help defuse some of the ethical dilemmas surrounding algorithmic decision-making calls for the establishment of privacy ethics boards, modelled after the human subject review boards (IRBs) that operate in academic research institutions.

[116] Omer Tene & Jules Polonetsky, Big Data for All: Privacy and User Control in the Age of Analytics, 11 Nw J. Tech & IP 239, 268 (2013).

[117] Id. at 270-72; also see Jules Polonetsky & Omer Tene, Privacy and Big Data: Making Ends Meet, 66 Stan. L. Rev. Online 25 (2013).

Ryan Calo explains, "Today, any academic researcher who would conduct experiments involving people is obligated to comply with robust ethical principles and guidelines for the protection of human subjects."[118] He posits that by formalizing the review of new initiatives involving consumer data, policy managers could manage and head off regulatory risk, and more importantly, add a measure of legitimacy to the study of consumer activity.[119] A similar model could be implemented in states and school districts, to help vet ed tech projects and enhance the transparency and accountability of automated decisions affecting students and teachers. Such scrutiny would also help address the concerns of civil rights groups that worry that big data advances could exacerbate bias or create new forms of discrimination.

By advancing transparency and enabling platforms for critical review, reformers can shape a system that uses ed tech to provide students the best learning experiences that the future allows.

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[118] Ryan Calo, Consumer Subject Review Boards: A Thought Experiment, 66 STAN. L. REV. ONLINE 97 (2013), http://www.stanfordlawreview.org/online/privacy-and-big-data/consumer-subject-review-boards.

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Maria Murumaa-Mengel, Andra Siibak:

Teachers as nightmare readers: Estonian high-school teachers' experiences and opinions about student-teacher interaction on Facebook

Abstract:

This study explored Estonian teachers' perceptions and practices about student-teacher interaction on Facebook. Four focus group interviews with high-school teachers (n=21) revealed that educators are used to monitoring their students' posts on Facebook and consider it their role to intervene whenever something inappropriate is posted. Teachers viewed such social media surveillance as a routine and harmless practice which does not violate students' privacy. The participants of our study do not see any need for formal social media policies to regulate student-teacher interaction on social media, as they consider themselves perfectly capable of making ethical choices in this realm.

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Introduction

At the era of "public surveillance" (Nissenbaum, 2004) and due to the "context collapse" (Marwick & boyd, 2010) in networked publics, students and teachers have suddenly gained access to each other's information which previously was considered private.

The aim of this article is to investigate Estonian high-school teachers' experiences and opinions about teacher-student interaction on Facebook. Although there has been a heated debate in the USA about whether it is ethical and legal for teachers to interact with their students on social networking sites (SNS) (Fulmer, 2010; Miller, 2011; Lehrer, 2011), the topic has gained much less attention in European context. For instance, in comparison to many school districts and states in the USA (e.g. Louisiana, Texas, etc.) which have passed policies and regulations designed to limit teacher-student interactions on social media (Lehrer, 2011), similar student-teacher communication bans are rare in the European context (German state bans…2013; Flynn, 2012). Furthermore, academic debate and analysis on the topic so far has either focused on university student-professor relationships on SNS (e.g. Malesky & Peters, 2012; Karl & Peluchette, 2011), or on studying the views of pre-service teachers (e.g. Mikulec, 2012; Hart & Steinbrecher, 2011), whereas the opinions and experiences of practicing high-school teachers are still rarely explored (Asterhan et al., 2013; Williams, 2012).

Our previous research (Murumaa & Siibak, 2012) has indicated that Estonian students often perceive their teachers on SNS as "nightmare readers" (Marwick and boyd, 2010), i.e members of the audience that the information disclosed on SNS is not originally meant for. So far, there has been no public discussion about teacher-student relationships on SNS in Estonia and to the knowledge of the authors no schools have developed any social media policies or guidelines for the teachers to regulate student-teacher interaction on the Internet. Considering the fact that overall Internet use amongst 11-18 year old Estonians is 99.9% (Kalmus et al., 2009) and majority of the teens (85%) have a profile on SNS (Livingstone et al., 2011), we believe additional knowledge is needed on the topic. Furthermore, as teachers are historically seen as mentors and role models for the youth (Miller, 2011), we think it is crucial to learn about teachers' experiences and opinions on an issue which is often depicted as relatively problematic and ethically questionable.

Considering the above and relying on Foulger et al.'s (2009: 18) claims that "studies of inservice teacher reasoning about teacher jurisdiction in student social networking behaviors would help to clarify "expert" perspectives" and "studies of teacher attitudes toward various school-wide policies about social networking use would help illuminate the kinds of guidance that teachers find useful", we set out to explore Estonian high-school teachers' opinions and experiences about monitoring their students' profiles; their opinions about the need to intervene in their students' online content creation practices and their attitudes about the need for school-wide SNS polices.

Theoretical Background

Teachers and students in social media

As teachers play a unique role in shaping the minds of our youth educators are usually held to higher standard of professionalism and moral character. In fact, "uprightness of character" (Lumpkin, 2008: 46) is expected of them even during off-duty times (Foulger et al., 2009), the latter of which can nowadays often be spent on social media. As stated by Osman et al (2012) for teachers of today, "online identity is a significant part of their lives and abstinence from these forums is not a realistic option".

Previous studies indicate that there is no consensus among authors whether educators and students should be friends on Facebook or not (Acar, 2013). While many studies suggest that SNS provide an open and supportive environment for teacher-student interaction (Akiti, 2012), others (e.g. Kist, 2008) have drawn attention to negative aspects, that teachers may be afraid of objectionable student comments or blog posts and are therefore deciding against using such platforms.

Surely, electronic media has thoroughly blurred the boundaries between the public and the private (Meyrowitz, 1985). According to Westin (1968) privacy is an individual's right to decide when, how and how much information about oneself is communicated to the others. However, in the mutual surveillance of social media, or the omnopticon, as Linaa Jensen (2010) has called it, all participants have different understanding of what is correct and incorrect, what is perceived to be normal and abnormal, private and public. As to a large extent, the internet lacks universally applicable laws or even shared norms and values (Albrechtslund, 2008).

The young are often at the forefront of emerging Internet usage practices but at the same time "young people are assumed to be far too naïve to handle themselves in public without careful supervision and control" (Maranto & Barton, 2010), the same assumption goes for SNS. But what adults regard as risks and reprehensible behavior, the young may see as opportunities (Kalmus & Ólafsson, 2013) and as an accepted shift in social norms (Shih, 2011).

Guidelines and policies about social media use in schools

Schools in USA have incorporated many different aspects into their guidelines for social media use, ranging from strict "employees shall not "friend" current students on SNS such as Facebook and MySpace" and "will not respond to student-initiated attempts at conversation" (Dayton Public Schools...2014) to more general suggestions like "each employee has a responsibility to understand the rules of the social media site being utilized" (NYC Department of...2013).

Most policies and guidelines emphasize similar recurring aspects, like separation of personal and professional identities. For example, NYC Department of Education's Social Media Guidelines (2013) separate professional school-based social media use (e.g. teachers establishing blogs or pages for students) and personal use. Social media is mostly seen as a professional workplace and extension of a classroom, where the same rules of conduct apply. For instance, contact with students is preferred to take place in groups and spaces designed for learning, not via personal profiles (teachers "friending" students is often prohibited, or at least frowned upon). The guidelines (e.g. Guidelines for Policy...2010) also emphasize the need to protect students' rights. For example, not only are teachers warned against posting information, visual materials in particular in online environments, but also parental consent is needed before disclosing information about one's students in an online setting. Some schools are also paying attention to students' right for informational privacy (Craig & Ludloff, 2011), which include "respecting students' personal social media presences" and avoiding "online 'sting' operations" (Larson, 2013).

Methodology

Four focus group interviews with Estonian teachers (n= 21) from different high-schools were carried out in spring 2013 (from March to June) to analyse their perceptions, encounters, and experiences in relation to privacy and publicity in the digital area. By stimulating group dynamics we hoped to identify the opinions our participants shared (Patton, 2002) and create a situation similar to real life interaction.

All of the teachers belonging to our strategic sample had to have a Facebook account and needed to teach in high school. We also aimed to have at least one class teacher[120] in every focus group, because they tend to have a closer relationship with their students. Our final sample comprised of 3 men and 18 women who taught different subjects in their respective schools and were in between the ages of 23-51. Most of the participants had used SNS also prior to using Facebook.

[120] A teacher who is responsible for a class of pupils for several years (e.g. three years in high-school). Class teachers mediate administrative information, organize events and field trips, evaluate students' personal development and communicate with parents and guardians.

An hour to two-hour-long interviews were conducted by two interviewers in schools where the teachers work so as to help participants settle into discussions more rapidly and provide an easily accessible and suitable environment. In the first phase of the focus groups, the participants were asked more general questions about their overall social media usage practices, preferences and the meaning of privacy. Then the discussion moved to the differences in students' and teachers' perceptions about private and public information. In the final phase of the interviews the relationships of teachers and students on Facebook were looked at more closely and the participants discussed the principles of such communication, netiquette, ideals and common practices. In the context of the article at hand we will concentrate on the latter two topics.

As we already had some previous knowledge on the topic (Murumaa & Siibak, 2012) before starting the study, theoretical and selective coding (Lonkila, 2004) was used for analysing the data gathered. In order to ensure reliability three different researchers analysed the material. After close readings and initial open coding which helped us to structure different codes into more logical systems, we used axial coding so as to focus and work on the codes gathered from one specific category. In other words, step-by-step we were moving to more and more abstract level of analysis.

Results and Discussion

Monitoring students' online content creation

The findings of our study suggest that teachers are to a large extent what Marwick and boyd (2010) called "nightmare readers"– people who are not the imagined audience of the students' posts but nevertheless keep an eye on their online content creation. Hence, in contrast to the young who believe that social media and SNS in particular, is "'their" space, visible to the peer group more than to adult surveillance" (Livingstone, 2008: 396), various adults e.g. teachers are actually monitoring the practices of the young in online settings.

> *F5: holy heavens, they can't imagine that all of their questions and answers are visible there [on ask.fm]. I haven't told them that I see that, cunningly.*

In comparison to a district in Glendale, California, where a tech firm was hired to monitor students' posts (Martinez, 2013), our focus groups revealed that teachers themselves had taken up the task. Furthermore, as high standards were part of the participating teachers' self-image many of them talked about occasions when they had taken up a role of a controller who is ready to take action in case of noticing something inappropriate.

> *F7: And I have warned them, when I know that there is a birthday coming up or something, then I say that I do not want to see any photos with alcohol bottles on Facebook afterwards /---/ and sometimes when they are absent a lot, I sometimes go to check and they have pictures of parties up and... (general laughter)*

In general, the teachers in our sample had noticed four main content related problems when monitoring students' Facebook posts. First of all, the teachers believed and had noticed that young people often tend to post too revealing images on Facebook i.e. they post photos that reveal something about the student's romantic relationship or literally reveal their bodies. Furthermore, teachers also believed the students to over-expose their emotions e.g. by proclaiming their love to someone several times a day on social media; and to make posts which could be considered either harmful i.e. malicious gossip and cyberbullying or illegal e.g. exposing the use of drugs or alcohol. In contrast to the student posts which could be considered bullying or which threaten public safety (e.g. school shootings) and are argued not to be "detected or solved without adult presence *within* [italics in the original] the medium" (Asterhan et al., 2013), teachers in our sample also talked about the need to intervene in situations like the one below, where a moral dilemma and controversial paths of actions exist.

> *F18: I have seen a herd of half-naked girls in the shower, students shared their pictures. Really, we made a big deal about it and they didn't see what the problem was. That it was their personal affair.*

The abovementioned example illustrates nicely that "our thinking about privacy in technological interactions is complicated" (Foulger et al., 2009) and that privacy means different things to different people. In comparison to a teacher who does not question the school's need to intervene, students themselves considered the situation to be a private matter and any outside intervention thus unnecessary. Nevertheless, our findings reveal that similar to the participants in Williams' (2012) study, the teachers that we interviewed also felt a heightened need to teach digital etiquette to the students. Their educational practices however, might be questionable at times.

For instance, although the teachers in our sample expressed the understanding that it is not suitable to talk about real problems they have witnessed on Facebook publicly in classroom settings, an extract from below suggests that some of them had still made use of specific cases they had witnessed on Facebook so as to trigger in-class discussions.

> *F4: polite and nice girl in my last class, I don't remember which teacher I googled and then her blog came up. And I talked about it in class, of course without naming names and the girl told me afterwards that she wishes she had known it, she will never do that again.*

As the example below demonstrates how the focus groups also revealed that teachers have used specific cases to give their students a lesson about privacy, everlasting memory of the Internet, and other possible problems; their strategies were sometimes questionable.

> *F5: a girl was sleeping in class, you know? Someone took a photo, put it up. On Facebook. I downloaded the photo and then wrote that I think you should take it down, it's not nice. They apologized and took it down and then I said that I can put it up myself now.*

It appears that although the teachers have the best interest of their students at heart, they tend not to think their actions through from the teens' perspective. By publicly humiliating and embarrassing students, teachers' educational purposes may not turn out to be as effective as they have hoped for.

Separating public and private

In light of recent surveillance society discussions, the teachers in our sample sometimes noted with a smirk that "big brother" is watching us all anyway, so they considered the problematization of privacy to be somewhat a pseudo-topic. In fact, many Estonian teachers interviewed for this study said that privacy issues are "in fashion" and there is almost an over the top moral panic around this subject, especially when talking about students' privacy:

> *F8: I feel that our generation doesn't demand privacy so horribly, I feel like it's a trend topic, not a deeper thought and maybe the young are going along with fashionable trends and thus are after this privacy, too.*

As the example above demonstrates opinions about privacy and publicity were often explained by generational differences in values and norms. In fact, participating teachers emphasized constantly that they view Facebook and other social media platforms to be public, and compared communication on social networking sites to writing an open letter or to giving a speech in a public park and compared private space to the contents of a handbag or a diary. The latter is probably also a reason why participating teachers seemed to have a hard time adjusting to the fact that young people's Facebook posts may often touch upon topics of emotions e.g. romantic emotions, grief, etc. that have mainly seen as private by previous generations.

> *F7: when x died then I looked at x's Facebook page and there were all these comments...I wouldn't have dared to write there /---/ or when that girl got killed there. They, how will I put it, share this information very naturally, like it is a normal thing to comment and offer condolences like that.*

Our findings indicate that teachers in our sample tended to characterize themselves as members of previous generations who still remember a world where there was luxury of controlling the spread of information about oneself (Abril, 2007) and contrasted their own views to the ones of the present day young people. The young, however, were believed to have accepted a world of collapsed contexts (Marwick & boyd, 2010) where information flows freely. Anecdotally, in one case, a participating teacher expressed an opinion that schools should hire hackers, so that "teachers can access these communities the students have". This is a serious discord in opinions, as most students "value privacy, seek privacy from both strangers and known others online, and use a variety of strategies to protect their privacy online" (Davis & James, 2012).

Teachers' attitude about the need for social media regulations

In comparison to the findings of Williams (2012) whose study participants claimed that there is a need for revised polices about the matter, all the participants in our study stated that their schools do not have specific guidelines for student-teacher interaction on social media (only general rules of conduct), nor are such guidelines necessary. In fact, teachers in our sample were certain that they have the knowledge and skills to handle problems that might rise and valued (creative) freedom of not being the subject of strict rules. Such a strong and negative stance towards rules and regulations that was shared by our participants is generally different from the attitude in the USA where some school boards have gone even so far as to prohibit parents who are teachers from "friending" their own children who happen to be students (Akiti, 2012). Teachers in our sample believed that instead of strict rules and guidelines one simply needs to be a "thinking rational person" whose previous encounters in social media should offer enough knowledge and skills even so as to interact with students in an adequate manner. In fact, the teachers in our sample believed all teachers to be intelligent enough not to need any formal rules of the kind.

> *F14: everybody here are intelligent people and we can communicate, we do not need any training in that. /---/ And there are so many norms in life, here we have intelligent teachers working in school and I think that we do not need official regulations on how they [teachers and students] communicate on Facebook.*

In addition to the feeling of professional pride that was expressed through abovementioned remarks, such comments reveal that the participants in our study internalized the image of a teacher as a moral compass of the society. In other words, the descriptions of our interviewees depicted a teacher to be almost as an ideal citizen who makes no mistakes and is a role model to others. Such a stance indicates that our participants either looked past the fact that there have been cases where teachers have posted inappropriate comments and images or had indecent interactions with their students online (e.g. Akiti, 2012), or they were simply unaware of such cases. Considering that there has not been any news articles about inappropriate student-teacher interactions in Estonian media, it could very well be that our participants might have not even heard about international cases of the kind (e.g. Heussner & Fahmy, 2010).

Conclusion

Society seems sometimes frightened of teachers having genuine relationships with students, including sharing personal aspects of their lives (Kist, 2008) as teachers are expected to behave like Educators twenty-four hours a day, seven days a week. In some parts of the world, teachers have fought for the right to use social media and evoke their right to free speech (Akiti, 2012) because educators have lives outside of school. In addition, teachers can present themselves through Facebook as individuals who function outside of the classroom in social situations and so have positive influence on students' motivation and participation (Mazer et al., 2009).

At the same time, researched teachers' experiences and opinions about teacher-student interaction on Facebook suggest that educators often live up to the students' perception of them, the "nightmare readers" (Marwick and boyd, 2010; Murumaa & Siibak, 2012), lurking and monitoring pupils on SNS or even actively intervening in students' online content creation. In many occasions the participants of this study expressed the need to educate their students about possible risks associated with social media, taking on the expected role of teachers as mentors (Miller, 2011; Lumpkin, 2008). Although teachers' aim was clearly to prevent harm and so to say to "save the students from themselves", both their opinions and experiences revealed that they rarely had any ethical or moral dilemmas about their practices.

This raises serious questions about the fundamental informational privacy rights (Craig & Ludloff, 2011) of students. Mutual online surveillance seems to be the new norm but at the same time, people have to learn how to look away at certain moments and to respect privacy boundaries set by other people, even if they differ from one's own. Too often, teachers interpret online privacy rather black-and-white, disregarding the subtle nuances of contemporary online privacy.

Furthermore, according to the teachers in our sample students' privacy is more like a "pseudo-topic" than anything teachers should really be concerned about. Furthermore, they believed privacy to be a topic which every teacher already has knowledge about and thus they did not see any need for policies or guidelines to regulate their interactions with students in social media. However, as numerous problematic cases from different countries demonstrate, still more has to be done so as to increase teachers' awareness about informational privacy and online ethics.

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Taryn Lough and Toni Samek:

Canadian University Social Software Guidelines and Academic Freedom: An Alarming Labour Trend

Abstract:

An analysis of first-stage social software guidelines of nine Canadian universities conducted in the 2012-13 academic year with the aim to reveal limits to academic freedom. Carleton University's guidelines serve as the anchor case, while those of eight other institutions are included to signify a national trend. Implications for this work are central to academic labour. In as much as academic staff have custody and control of all records they create, except records created in and for administrative capacity, these guidelines are interpreted to be alarming. Across the guidelines, framing of social media use by academic staff (even for personal use) as representative of the university assumes academic staff should have an undying loyalty to their institution. The guidelines are read as obvious attempts to control rather than merely guide, and speak to the nature of institutional overreach in the related names of reputation (brand), responsibility (authoritarianism), safety (paternalistically understood and enforced), and the free marketplace of [the right] ideas.

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  - Anthony Worman and Toni Samek. (2011). *"Digital labour shortage: A new divide in library and information studies education?" Information, Society & Justice*. Vol. 4. No. 2, December 2011. Pages 71-82.
  - *Toni Samek. (2010). "Teaching Information Ethics in Higher Education: A Crash Course in Academic Labour". International Review of Information Ethics. Vol. 14 (December 2010). Pages 4-9.*
  - Toni Samek. (2007). "Librarians and Information Justice". *Academic Matters: The Journal of Higher Education* (October 2007): 24-25.

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This work analyses first-stage social software guidelines of nine Canadian universities with the aim of revealing limits to academic freedom. The guidelines selected for study were those that were publicly accessible through Canadian university websites in summer 2012, namely those of: Carleton University, Memorial University, Queen's University, Ryerson University, University of British Columbia, University of Manitoba, University of Regina, University of Toronto, and Wilfrid Laurier University. Some of the guidelines (e.g., those of Carleton University) have since been refined or developed; others appear largely unchanged. The analysis was performed in the 2012-2013 academic year, both with the intention to publish a scholarly article thus filling a gap in global scholarship on the production and implementation of social media policy in higher education, as well as to influence future policy in Canadian higher education. Carleton University's guidelines, as at play in 2012 in the nation's capital, are used as the anchor case, while those of eight other institutions are included to reinforce the points raised and to signify a national trend. To this end, the work concludes with a table showing the full picture of threats to academic freedom that emerged from the study. Implications for this work are central to academic labour. In as much as academic staff have custody and control of all records they create, except records created in and for an administrative capacity, these guidelines are interpreted to be especially wrong and alarming. Across the guidelines, framing of social media use by academic staff (even for personal use) as representative of the university assumes academic staff should have an undying loyalty to their institution. The guidelines attempt to blur what is appropriate in what space, revealing a repressive impulse on the part of university administrations. These *guidelines* are read as obvious attempts to control rather than merely guide, and speak to the nature of institutional over-reach in the related names of reputation (brand), responsibility (authoritarianism), safety (paternalistically understood and enforced), and the free marketplace of [the right] ideas.

Literature Review

The intention with the literature review was to find work concerned with the construction, implementation, and consequences of social media guidelines in higher education. More specifically, we were curious to see if any published work was invested in unpacking what the implications of higher education social media guidelines are for academic freedom. The literature review search was limited to English language and translated documents retrieved from the University of Alberta Library system; however, the overall search extended to public domain documents identified through Google.

The search began widely to first acquire a sense of what types of scholarship were being produced on social software and higher education in general. Works consulted that encompassed social software and higher education did not date back past the 2005-2006 academic year, as this is the time in which current popular social media platforms were born. This approach provided the opportunity to have a general sense of what aspects of social media's relationship with higher education have interested researchers since the rise of now ubiquitous media, such as Facebook and Twitter. Much of the work consulted that fit within the broad search of *"social media" AND "higher education"* focused on pedagogy surrounding integrating social media into learning. Subsequent search strings used in an attempt to unearth works related to higher education and social media guidelines included some of the following phrasing: *"social media" AND "university guidelines"; "social media guidelines" AND "higher education";* and, *"university policy" AND "social media".* After conducting these searches, material found was organized into three broad categories: (1) academic staff social media guidelines in higher education (Chretien, et al., 2010; Garber, 2011; Kelly, 2012), (2) student social media guidelines in higher education (Williams, Field, and James, 2011; Sanderson, 2011), and (3) social media, university marketing, and recruitment (Botha, Elsamari, Farshid, Pitt, 2011; Pikalek, 2010; Wandel, 2008; Zaliskaite-Jakste, Kubykaite, 2012).

Searches pertaining specifically to the implications of higher education social media guidelines for academic freedom were conducted next. Sample search strings utilized include the following: *"social media guidelines" AND "academic freedom"; "media policies" AND "freedom of speech"; and, "social media policy" AND "academic freedom".* In terms of finding work that spoke directly to university social media guidelines and academic

freedom, the search only produced one pure hit. McNeil's (2012) scholarship strongly parallels our own in both execution and purpose. He examined the social media policies of fourteen universities in the United Kingdom. He states "At worst, some of the social media policies analysed place serious constraints on academic autonomy and the possibilities for innovation, openness and sharing" (p. 153). Furthermore, he comments his analysis of these social media guidelines exists primarily to "highlight the potential tensions between the academic ideals of openness and the freedom to act and to write as we see fit with social media policies that limit our academic autonomy" (p. 161). He also argues these social media policies are "mainly about enhancing "brands" and protecting institutional reputation" (p. 152) which affirmed our belief that Canadian policies are couched in university branding and risk management. The sentiment of uneasy feelings about university branding trumping academic freedom is echoed by others (Brass, Rowe, 2009; Rowe, Brass, 2011). Wandel (2007) and Garber (2011) also speak to the trepidation of university faculty who have expressed concern over the relationship between their participation in social media and freedom of speech due to strict university sanctioned guidelines.

Analysis

Because the guidelines adopted at Carleton University in Ottawa were the first to raise concern with the Canadian Association of University Teachers' (CAUT) Academic Freedom and Tenure Committee, this analysis section uses Carleton University as the anchor case and then shows how the other eight Canadian university guidelines studied reinforce grave concerns with respect to limits to academic freedom. We include the Carleton University guidelines in the Appendix exactly as they appeared on the Carleton University website at the time we began our study in summer 2012. The guidelines have since been refined (and in our opinion improved). The guidelines of the other eight institutions are not included as appendices, due to article length constraints. However, readers should feel free to contact the authors for full text of the guidelines (again as were available at the outset of our study).

The purview of Carleton University's "Social Media Guidelines", as documented in 2012, is couched in terms of publicity, marketing and branding. For example, they state: "These social media guidelines are intended to share Carleton's expectations of you when using social media on behalf of the University; and to support your use of social media in contributing to the University's online presence. These guidelines are intended to assist you in your professional use of social media and to remind you to consider your reputations and Carleton's when sharing information." But in actuality, the guidelines frame multiple conditions for academic work and clearly cross the academic freedom line in key respects, including in teaching, research and service.

A key failing of Carleton University's social media guidelines, as launched, with respect to academic freedom is how they bump up against multiple core values in higher education – values that are inextricably linked to academic freedom (e.g., collegiality, transparency). To illustrate this point, 10 examples of CAUT general policy are shown below to run counter to Carleton University's initial guidelines. CAUT general policy is used in this work as a testing ground for the strength of the social software guidelines in Canadian universities because CAUT mints leading national policy on academic labour. "Founded in 1951, CAUT is the national academic professionals, CAUT is an outspoken defender of academic freedom and works actively in the public interest to improve the quality and accessibility of post-secondary education in Canada."[121]

Example 1: CAUT's Policy Statement on Collegiality[122] asserts "Collegiality does not mean congeniality or civility." Meanwhile Carleton University's guidelines state unreasonable use of social media includes: "Using University resources to access or post any material that is fraudulent, harassing, threatening, bullying, embarrassing, sexually explicit, profane, obscene, racist, sexist, intimidating, defamatory or otherwise inappropriate or unlawful." We argue an academic engaging in public intellectualism with the use of social media tools about an "embarrassing" decision made by the University administration should be protected by academic freedom. The guidelines state "Carleton does not want to discourage or limit your personal expression or online activities.

121 Canadian Association of University Teachers website. Accessed 2 April 2014. http://www.caut.ca/about-us

122 CAUT Policy Statement on Collegiality. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-collegiality

However, you should recognize the potential for damage to be caused (either directly or indirectly) to the University or your department in certain circumstances via your personal use of social media if you can be identified as a Carleton employee". Nevertheless, the guidelines also instruct academics to "be polite and respectful." In an era of competitive internationalization in higher education, we ask who defines those terms and according to what cultural protocols.

Example 2: CAUT's Policy Statement on Academic Freedom[123] asserts "Academic freedom includes the right, without restriction by prescribed doctrine, to freedom to teach and discuss; freedom to carry out research and disseminate and publish the results thereof; freedom to produce and perform creative works; freedom to engage in service to the institution and the community; freedom to express one's opinion about the institution, its administration, and the system in which one works; freedom to acquire, preserve, and provide access to documentary material in all formats; and freedom to participate in professional and representative academic bodies. Academic freedom always entails freedom from institutional censorship." Meanwhile, the guidelines state "Carleton University is committed to academic freedom of speech", but do not provide a more expansive definition of academic freedom. This presents a loophole of sorts. For example, the guidelines include the suggestion that "If you happen to get a message sent to you from a member of the press via Social media, consider consulting with University Communications before responding." It is also recommended that employees avoid "making any comment or posting any material that might cause damage to the university's reputation." We wonder about possible *subtle* consequences for a Carleton University academic who acts on his or her professional right to critique the University without first consulting with the University.

Example 3: CAUT's Policy Statement on Academic Freedom and Electronic Communications[124] asserts "The rights of academic staff to exercise their academic freedom do not vary according to the medium in which they are exercised. These rights are as essential to academic activities undertaken electronically as to those undertaken in speech, writing, and/or other media." This phrasing puts the existence of the guidelines into question on a most fundamental level.

Example 4: CAUT's Policy Statement on Academic Freedom for Academic Administrators[125] asserts" The exercise of academic freedom serves the common good of society and should not be constrained by appeals to such notions as loyalty to administrative leadership, cabinet solidarity, management rights, commitment to a team, or speaking with one voice." It also stresses "The academic freedom of academic staff continues indivisible and undiminished in all academic and public settings, whether or not these settings are aligned primarily with teaching, research, administration, community service, institutional policy, or public policy." Meanwhile the guidelines "recommend that you avoid: implying that you are authorized to speak as a representative of the university; using your Carleton email address; using or disclosing any confidential information obtained in your capacity as an employee; making any comment or posting any material that might cause damage to the university's reputation." The CAUT policy and the guidelines are out of sync on numerous counts here, perhaps most importantly with respect to academic freedom in public settings, such as social media spaces.

Example 5: CAUT's Policy Statement on Distance Education[126] asserts "Academic staff members shall have the freedom to select and use those teaching and support materials which he/she believes to be appropriate, including the freedom to use or not to use any specific technique or technology." The guidelines state they "are intended to share Carleton's expectations of you when using social media on behalf of the University; and to support your use of social media in contributing to the University's online presence. These guidelines are meant for anyone working for the University and either using social media on behalf the University, or using social

123 CAUT's Policy Statement on Academic Freedom. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/caut-policy-statements/policy-statement-on-academic-freedom

124 CAUT's Policy Statement on Academic Freedom and Electronic Communications. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/caut-policy-statements/policy-statement-on-academic-freedom-and-electronic-communications

125 CAUT's Policy Statement on Academic Freedom for Academic Administrators. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-academic-freedom-for-academic-administrators

126 CAUT's Policy Statement on Distance Education. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-distance-education

media personally but identifiable online as a University employee". While the term teaching is not mentioned in the guidelines, we assume Carleton University academics will opt to use social media in distance education courses (at minimum). Within that activity, they will want to exercise their academic freedom with respect to course resources, which may include social media (e.g., a blog), as well as with respect to the intellectual instructional content they post using social media (e.g. teaching comments posted to a course blog).

Example 6: CAUT's Policy Statement on Academic Freedom and Artistic Expression[127] asserts that artistic expression "merits the same assurance of academic freedom as is accorded to other scholarly and teaching activities" and "Since academic staff and student presentations to the public are integral to teaching, learning and scholarship in the arts, these presentations should be protected by the principle of academic freedom." The guidelines do not specifically address artistic expression. This could create vulnerability for Carleton University academics. For example, an electronic form of a satirical poster or a short video clip produced by a professor (or fellow academic) critiquing an aspect of Carleton University "business" for the purposes of scholarship and/or teaching and learning could bleed into the parameters of what Carleton University deems to be embarrassing. Again, from an academic freedom and labour standpoint, what are the consequences? Could a university teacher face discipline under a code of conduct policy in this scenario?

Example 7: CAUT's Policy Statement on Defamation Actions Arising out of Academic Activity[128] asserts "Academic freedom is essential to the fundamental purposes of post-secondary education institutions. It is essential that academic freedom not be restricted by the threat of legal action for defamation. Academic staff associations and post-secondary employers should promote a culture in which differences of opinion are debated and discussed without resort to litigation." The guidelines state "Carleton does not want to discourage or limit your personal expression or online activities. However, you should recognize the potential for damage to be caused (either directly or indirectly) to the University or your department in certain circumstances via your personal use of social media if you can be identified as a Carleton employee". One should worry about the possibility Carleton University's position on defamation might escalate when a person (e.g., representative of the University or a department) is referenced in the context of social media. Obviously, legal counsel is the final arbiter here.

Example 8: CAUT's Policy Statement on Scholarly Communication[129] asserts scholarly communication "is a public good that should not be limited by commercial or private interests or restrictive institutional policies. Any such limitations threaten academic freedom by restricting the dissemination and discussion of scholarly activity", and "Academic staff should establish and support credible non-commercial fora such as institutional repositories for peer review and distribution of research." We might anticipate that Carleton University academics produce an electronic scholarly communication venue that bumps up against what Carleton University develops as licensing guidelines that are part of the university's copyright policies.

Example 9: CAUT's Policy Statement on Professional Rights and Responsibilities[130] asserts "Academic staff have the right to promote and guide student participation in class discussions as they see fit within the framework of human rights and professional standards." We can foresee a scenario in which, for example, a teacher and a class of engineering students are debating, in a social software context, the merits of a Carleton University policy (e.g., related to patents). There is a potential problem here if the University administration deems someone's comments unflattering. Furthermore, this is problematic for the privacy and security of scholars at risk online. Online course participation leaves a trail in the form of a digital tattoo.

127 CAUT's Policy Statement on Academic Freedom and Artistic Expression. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-academic-freedom-and-artistic-expression

128 CAUT Policy Statement on Defamation Actions Arising out of Academic Activity. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-defamation-actions-arising-out-of-academic-activities

129 CAUT's Policy Statement on Scholarly Communication. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/caut-policy-statements/policy-statement-on-scholarly-communication

130 CAUT's Policy Statement on Professional Rights and Responsibilities. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/caut-policy-statements/policy-statement-on-professional-rights-and-responsibilities-

Example 10: CAUT's Policy Statement on Openness and Transparency in Post-Secondary Institutions[131] asserts "Universities and colleges that receive public funds either from provincial governments or the Government of Canada through direct grants, student loans, scholarship programs, or other means of direct or indirect transfers have an obligation to use those funds in a responsible way. Universities and colleges must be accountable for their trusteeship of these public monies. Accountability demands openness and transparency. Universities and colleges must be open to public scrutiny, open in their accounts, open in their governance, policies and administration, open in their debates, and open in their decision-making processes. Openness and transparency must be the normal operating procedure for universities and colleges." Is it reasonable, then, the guidelines are so prescriptive in what they encourage academics to avoid?

Table

The following table reflects the key terms/phrases of concern identified in terms of infringements on academic freedom for academic staff using social media for both professional and personal purposes. This data is gathered from absorbing the publicly accessible (in summer 2012) social media guidelines of nine postsecondary institutions in Canada, namely: Carleton University, Memorial University, Queen's University, Ryerson University, University of British Columbia, University of Manitoba, University of Regina, University of Toronto, and Wilfrid Laurier University. Some of the threats to academic staff identified are representative of all nine institutions studied (especially those associated with university branding), while others are not as typical. However, while some language has been extracted directly from the analysed documents, other points are the result of a brief 'summary' of themes that permeated multiple documents. As stated at the outset of this article, we went into this study aiming "to reveal limits to academic" embedded in the language of the guidelines. Thus our identification and interpretation of threats found are what we report in the table. To be clear, were we bias to find threats? Yes. Did we find threats? Yes.

The summary points are identified and organized into four emerging themes: (1) university branding, (2) explicit censorship, (3) risk management and privacy concerns, and (4) freedom of speech and 'action.' The "Implications" column is indicative of the authors' interpretations of how these social media guidelines pose a threat to academic freedom. They are firmly rooted in the authors' personal-professional beliefs in the paramount importance of the free flow of information in the academic enterprise – within the framework of the law and recognizing the right to participate in law reform.

Broad Emerging Themes	***Examples and/or Summary***	***Implications***
University Branding	• advance institutional mandate, promote values of institution • manage reputation of institution • follow visual identity guidelines • social media as marketing tool • consult university before speaking with the media	**Social media has resulted in the pervasive idea participation in these spaces can ultimately result in the erasure of the boundaries between private and public. However, the reiteration of framing social media use by academic staff (even for personal use) solely as "representative of the university" assumes academic staff should have an undying**

131 CAUT's Policy Statement on Openness and Transparency in Post-Secondary Institutions. Accessed 2 April 2014. http://www.caut.ca/about-us/caut-policy/lists/general-caut-policies/policy-statement-on-openness-and-transparency-in-post-secondary-institutions

	• representative of university	**loyalty to their institution, and implicitly suggests being critical of one's institution in any context is problematic. Furthermore, social media is now integral to the exchange of ideas and learning. Should academic staff not be able to engage in these dialogues for a myriad of reasons and utilize them to their full potential (e.g., without feeling inextricably fatefully linked to their institution)?**
Explicit Censorship	• remove potentially problematic content posted by public • administration reserves right to remove content	**What message does academic staff AND students receive if content they post on university sanctioned social media sites are removed because they are deemed controversial (overt sexism, racism, homophobia, hate speech as exceptions)? What message does the university send to the public regarding the value of intellectual freedom in Canada if comments are removed? How is it determined what bodies in the university hold the authoritative power to remove content? How does this skew the perspective the university puts out if it ultimately comes from one subjective experience? [Also applies directly to next section.]**
Risk Management & Privacy Concerns	• use disclaimer statement on personal social media sites • administration reserves right to all passwords of social media sites directly affiliated with an institution • if social media policy is breached, administration reserves right to change passwords	**Conceptualizes academic staff primarily as potential threats to the institution (harkens back to university branding) as opposed to integral components to a learning culture. Instils fear of serious repercussions and censure for undermining guidelines. University is positioned as an institution with *complete control* over any output into flow of**

	• do not attach university email to personal social media sites • be mindful of who you follow/friend on social media • have a vested interest in a topic? disclose it • check in with management/admin if unsure whether what you want to post is appropriate	**information that is at all affiliated with the university. Results in the need for discussions regarding *freedom of association*. Implies the university ultimately usurps control over academic staff records that exist within a digital social space, an action framed by what is 'best for the institution'. An erosion of and threat to academic freedom.**
Freedom of Speech & 'Action'	• do not discuss or endorse political or religious attachments • do not discuss legal matters • avoid controversial topics • manage tone of posts • do not criticize other institutions • take time to 'cool down' before responding to anything online that causes passionate emotions • restrain if you have strong opinions • ensure what is posted online would also be said in a classroom, presented at conference • use good judgement • carefully choose profile picture	**Constructs an organizational culture rooted in self-surveillance, policing, and self-censorship which bleeds into personal life. Inhibits critical thinking process in moments of potential greatness in terms of contributing to invaluable discussions (e.g., potentially 'controversial' social justice/human rights issues). Makes it almost impossible for academic staff to negotiate what is appropriate in what space re: professional vs. private (can this even exist?). Are academic staff ultimately expected to assume the role of neutral automatons?**

Conclusion

In his 2011 monograph, *The Fall of Faculty: The Rise of the All-Administrative University and Why It Matters*, Benjamin Ginsberg comments "As in so many other realms, one should never underestimate the prevalence of mindless administrative mimicry enshrined under the rubric of best practices. Should we be surprised or upset to learn, for example, the University of Florida's Internet use code, outlawing behaviour that "would include but not be limited to the use of abusive or otherwise objectionable language and/or materials in either public or private messages," is echoed by Alvernia college's policy banning behaviour that "would include but not be limited to the use of obscene, abusive or otherwise objectionable language and/or materials in either public or private messages?" Perhaps college administrators believe if they are going to violate student and faculty First Amendment rights, their conduct is justified if they are merely copying some other school's violation of the Constitution." (118). National policy discussion on social media guidelines at Canadian universities is in order, so there is opportunity to curtail the earliest alarming trends identified at nine Canadian universities. The negative development signifies a labour virus attacking the health of academic freedom in Canadian higher education.

As stated at the outset of this work, the guidelines selected for study were those that were publicly accessible through Canadian university websites in summer 2012. Some of the guidelines (including those of Carleton University) have since been refined or developed; others appear largely unchanged. Changes warrant close and continued analysis.

The benefit of this study is how it identifies and documents the adoption of social media guidelines in Canadian higher education, thus reflecting the initial thrust in implementation of this development by university administrations. The implications for academic freedom are, in our interpretation, undeniably negative, suggesting authoritarian management of university branding and marketing trumped protection of academic freedom in the shift into 21st century academic labour. An important area for future inquiry is to replicate this study, taking into account changes in social media guidelines' directives. It would also be beneficial to examine guidelines at Canadian universities in addition to those nine institutions studied here. Finally, there is obvious merit in comparing and contrasting the Canadian picture to the international arena.

Appendix

Carleton University

ORIGINAL

Social Media Guidelines

***Important Authors' Note**: The below language is exactly what was posted on the Carleton University website at the start of our study in 2012. The guidelines have since been refined (and in our opinion improved). Of interest, Carleton University indicates it is currently developing a fuller 'social media strategy'. For more information, see: http://carleton.ca/socialmedia/social-media-guidelines/ (accessed 28 June 2014).*

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These social media guidelines are intended to share Carleton's expectations of you when using social media on behalf of the University; and to support your use of social media in contributing to the University's online presence.

These guidelines are meant for anyone working for the University and either using social media on behalf the University, or using social media personally but identifiable online as a University employee.

What is Social Media?

Social media is a catch phrase for internet-based services and sites, such as Facebook, Twitter, Linkedin, YouTube, Foursquare, and blogs. These services and sites share these common attributes:

- **Easy sharing of content** which can lead to exponential dissemination…
- **A sense of community** through targeted audiences, focused subject matter…
- **Engagement** through polls, comments, metrics, alerts for new content…
- **Readily accessible** via smart phones, tablets, laptops, public computers…
- **Low-cost or free** but a large time commitment on the part of your social media account manager.

What is Social Media @ Carleton?

Carleton University currently uses a wide variety of social media tools. As an institution, we maintain numerous Twitter feeds, Facebook pages, YouTube channels, and blogs.

Carleton's online presence supports the University in attracting, recruiting, and retaining students, faculty, and staff. The backbone of the University's online presence is delivered through Carleton's CMS (the content management system) which hosts the public websites of the various departments, faculties, and administrative & research units.

Carleton CMS incorporates components of Social Media: RSS feeds, YouTube-hosted videos, and blogs. University Communications, Faculty Communication Officers, and selected units augment their online presence with additional Social Media services such as Twitter feeds and Facebook pages.

Carleton University is committed to academic freedom of speech. These guidelines are intended to assist you in your professional use of social media and to remind you to consider your reputations and Carleton's when sharing information.

The Office of the Associate Vice-President (Students and Enrolment) provides leadership and support for the use of Social Media at Carleton.

Source: http://www2.carleton.ca/socialmedia/social-media-guidelines/

Home / Social Media Guidelines / Tips on Managing Carleton and Personal Accounts

Using social media on behalf of Carleton

1. Register your Social Media site (e.g. Twitter ID, FaceBook page, …) on Carleton's Official Social Media Directory.
2. Avoid posting anything online that could bring the University or yourself into disrepute. *e.g. do not let the fact that because Social Media is fast, easy, and inexpensive lull you into letting your professional guard down.*
3. Assume that anything you post could last forever, whether it's a Twitter response to a student or a comment on a FaceBook page. *e.g. Twitter content is archived by the US Library of Congress, and even deleted pages can live on in Google caches or in WayBackMachine.org archives.*
4. Conduct yourself in Social Media as you would conduct business on behalf of the University in any other public setting. Your postings should be guided by Carleton policies.
5. If you happen to get a message sent to you from a member of the press via Social media, consider consulting with University Communications before responding.

If you have a Personal online presence

Carleton does not want to discourage or limit your personal expression or online activities. However, you should recognize the potential for damage to be caused (either directly or indirectly) to the University or your department in certain circumstances via your personal use of social media if you can be identified as a Carleton employee.

1. Avoid confusion between your personal and on-behalf-of-Carleton online identities. *e.g. do not use 'Carleton' as a portion of your personal online name.*
2. Where your comments or profile can identify you as a Carleton employee:
    1. only disclose and discuss publicly available information;
    2. ensure that all content published is accurate;
    3. expressly state that the views are your own;
    4. be polite and respectful;
    5. adhere to the Terms of Use of the relevant social media platform/website.

It is recommended that you avoid:

1. implying that you are authorized to speak as a representative of the university;
2. using your Carleton email address;
3. using or disclosing any confidential information obtained in your capacity as an employee;
4. making any comment or posting any material that might cause damage to the university's reputation.

Examples of reasonable use:

1. re-Tweeting content from official Carleton accounts on your personal Twitter account;
2. Updating Facebook status and posting messages during a lunch break;

Example of unreasonable use:

1. Using University resources to access or post any material that is fraudulent, harassing, threatening, bullying, embarrassing, sexually explicit, profane, obscene, racist, sexist, intimidating, defamatory or otherwise inappropriate or unlawful.

University Policies

- Acceptable Use Policy for IT
- Carleton University Privacy Policies
- Carleton University Human Rights Policy
- Visual Identity Policy
- Web Content Policy

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Wilhelm Peekhaus:

Digital Content Delivery in Higher Education: Expanded Mechanisms for Subordinating the Professoriate and Academic Precariat

Abstract:

This paper suggests that the latest digital mechanisms for delivering higher education course content are yet another step in subordinating academic labor. The two main digital delivery mechanisms discussed in the paper are MOOCs and flexible option degrees. The paper advances the argument that, despite a relatively privileged position vis-à-vis other workers, academic cognitive laborers are caught up within and subject to some of the constraining and exploitative practices of capitalist accumulation processes. This capture within capitalist circuits of accumulation threatens to increase in velocity and scale through digital delivery mechanisms such as MOOCs and flexible option programs/degrees.

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  - Resistance Is Fertile: Canadian Struggles on the Biocommons. Vancouver: University of British Columbia Press, 2013.
  - "The Enclosure and Alienation of Academic Publishing: Lessons for the Professoriate." tripleC - Communication, Capitalism & Critique, no. 2 (2012).
  - "The Neo-Liberal University and Agricultural Biotechnology: Reports from the Field." Bulletin of Science, Technology & Society 30, (2010): 415-29.

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Introduction

> *As was the factory, so now is the university. Where once the factory was a paradigmatic site of struggle between workers and capitalists, so now the university is a key space of conflict, where the ownership of knowledge, the reproduction of the labour force, and the creation of social and cultural stratifications are all at stake. This is to say the university is not just another institution subject to sovereign and governmental controls, but a crucial site in which wider social struggles are won and lost.*[132]

Although the metaphor of the knowledge factory (as first articulated by Stanley Aronowitz) may not map on perfectly to the university as an institution, I suggest that some of the latest digital mechanisms for delivering higher education course content are yet another step in achieving best fit and moving us closer to the Taylorist organization of work in the academy.

Most of these new types of digital educational content delivery, which can loosely be grouped under the rubric of open education, seek to harness the power of contemporary information and communication technologies and high-speed networks to share knowledge, ideas, teaching practices, infrastructure, tools, and other resources both within and beyond institutions of higher education. These new modes of educational content delivery are typically celebrated by their proponents for their purported ability to eliminate the spatial, temporal, and financial constraints of the traditional models of instruction in institutions of higher education in ways that facilitate multiple and lifelong learning opportunities for students.

What tends to be less discussed in the literature and celebratory hype are the labor and labor process implications for university faculty (including adjuncts) that attach to digital delivery mechanisms of higher education.[133] This paper seeks to respond briefly to that lacuna by interrogating two types of digital education, namely massive open online courses (MOOCs) and flexible option programs. Stated briefly, the paper advances the case that, despite a relatively privileged position vis-à-vis other workers (albeit one increasingly under attack), academic cognitive laborers are caught up within and subject to some of the constraining and exploitative practices of capitalist social and production relations.

In developing the arguments below, the paper will first briefly elaborate the broader structural context of the contemporary neo-liberal academic ecosystem. The following section will outline the basic characteristics of MOOCs and flexible option programs. Having established this broader structural and technological context, the penultimate section of the paper interrogates critically the implications digital delivery mechanisms portend for faculty work products and processes. By way of conclusion, the final section highlights the major ethical issues excavated by the preceding analysis.

The Neo-Liberal University

In order to obtain a firmer critical purchase on digital education, we need to first elaborate the broader structural context of the contemporary academic ecosystem. As interrogated by a growing corpus of scholarly literature, neo-liberal policies over the previous three decades have imprinted an unambiguous stamp on the nature and functioning of tertiary education. In part, these developments have been facilitated by the opening up of many university boards and other top-level governance structures to members of the corporate community. Similarly, there has emerged an increasingly unquestioned acceptance by legislators and top university administrators of the apparent need to apply private sector business practices to what is often contemptuously dismissed as being a slow, reactive, and inadequate institutional structure mired in antiquated structures of shared governance. Among other things, the effects of neo-liberalism can be seen in the severe reductions in government spending on higher education and the consequent scramble by administrators and some faculty to secure alternative financial sources, which typically come from corporations and private philanthropic organizations.

132 Federici, Silvia, and Caffentzis, George: "Notes on the Edu-Factory and Cognitive Capitalism." 63

133 A notable early exception to this was Noble, David F.: "Digital Diploma Mills: The Automation of Higher Education."

But as a number of commentators point out, close alliances between universities and corporate funding partners are often accompanied by a number of associated quandaries, including: the generation of conflicts of interest within the university; restrictions on internal collaboration within the university; loss of academic freedom; deferral of publication and other information withholding practices; loss of objectivity; emphasis on applied research at the expense of basic research; student exploitation; pressure on faculty to concentrate disproportionately on commercial activities instead of other duties such as teaching; and, abuse of the researcher/physician-patient relationship in the case of clinical trials.[134]

Concomitant with these developments there also emerged the now well-established 'truth' among many governments that economic growth and development depend upon the ability of private enterprise to commercially apply and exploit the knowledge and innovation developed in educational institutions. Thus, universities have increasingly come to be viewed as fundamental components in an underlying innovation infrastructure that is imperative to the expansion of contemporary capitalism; a situation that has led some observers to speak of the 'edu-factory.'[135]

The general point that needs to be made based on this brief account is that the discipline of funding cuts coupled with the expanding emphasis on commodifiable research projects has helped normalize neo-liberal values within academia in a way that has metamorphosed institutions of higher education into sites increasingly characterized by obeisance to and subsumption by capitalist accumulation imperatives. From a labor perspective, such trends have been made manifest in the increase and intensification of faculty teaching and administrative loads and the proliferation of non-tenured and precarious adjunct appointments, all of which might be further exacerbated by digital education delivery mechanisms.

MOOCs and Flex Option Degrees

MOOCs have been heralded as one of the latest technological responses to the spatial, temporal, and financial constraints of the traditional models of content delivery in institutions of higher education. Originally developed by open educators such as George Siemens, Stephen Downes, Dave Cormier, and Alex Couros, MOOCs were followed relatively quickly by open courses from universities (e.g., Stanford) and other Internet-based initiatives from both non-profit and for-profit entities such as Coursera, Udacity, and edX, all of which seek to enrol substantial numbers of students.[136] Yet, the academic rigor of MOOCs remains questionable, even among those faculty members who have designed and delivered such courses. In a recent survey of 103 faculty members engaged with MOOCs, although 79 percent believed that this form of content delivery is worth the hype, only 48 percent considered their MOOC to be as academically demanding as the versions they teach in the classroom and only 28 percent thought that students should receive academic credit for completing the MOOC. Moreover, 81 percent of respondents thought that teaching the MOOC had caused them to divert time from research, service, or traditional course delivery.[137]

The Flex Option Degree is a new mode of education delivery that started in Fall 2013 at the University of Wisconsin (UW) System, which claims to be the first public university system in the United States to offer this kind of competency-based, self-paced learning option. The UW Flexible Option is designed for nontraditional adult students who will be permitted to earn college credit by demonstrating knowledge they have acquired

134 Bekelman, Justin E., Yan Li, and Gross, Cary P.: "Scope and Impact of Financial Conflicts of Interest in Biomedical Research: A Systematic Review." Bok, Derek Curtis: Universities in the Marketplace: The Commercialization of Higher Education. Krimsky, Sheldon: Science in the Private Interest: Has the Lure of Profits Corrupted Biomedical Research? Levidow, Les: "Marketizing Higher Education: Neoliberal Strategies and Counter-Strategies. " Noble, David F.: "Digital Diploma Mills: The Automation of Higher Education." Peekhaus, Wilhelm: "The Neo-Liberal University and Agricultural Biotechnology: Reports from the Field." Slaughter, Sheila, and Rhoades, Gary: Academic Capitalism and the New Economy: Markets, State, and Higher Education.

135 Federici, Silvia, and Caffentzis, George: "Notes on the Edu-Factory and Cognitive Capitalism."

136 Saadatmand, Mohsen and Kumpulainen, Kristiina: "Participants' Perceptions of Learning and Networking in Connectivist Moocs."

137 Kolowich, Steve: "The Professors Behind the Mooc Hype."

through coursework, military training, on-the-job training, and other learning experiences. Students will progress towards a degree by passing a series of assessments that demonstrate mastery of required knowledge and skills.[138] According to former UW System president Kevin Reilly, one of the driving goals of the flex option degree is to respond to the most pressing workforce needs in Wisconsin.[139] Such pronouncements, of course, align with the neo-liberal university, which is increasingly becoming a site for disciplining, training, and credentializing customers for the workforce rather than educating students to become informed, critical, and active citizens.[140]

Along similar lines, University of Wisconsin-Milwaukee Chancellor Michael Lovell sought to assure interested stakeholders that "the UWM degrees … [students] earn through the new Flex Option platform will carry the same prestige in the workplace."[141] However, empirical evidence suggests such optimism may be unfounded. Kennedy, Gonzalez, and Cenzer found that 87 percent of the library and information science distance education graduates they surveyed did not disclose in resumes or cover letters that their degree was earned online and 72 percent of respondents believed that employers were negatively predisposed toward online LIS programs.[142] A Pew Study found that only 29 percent of the public believes that online courses are as valuable as onsite classes.[143] Similarly, a little more than 40 percent of higher education administrators believe that low acceptance of online degrees by potential employers constitutes a barrier to widespread adoption of online education.[144]

The Implications of Digital Education for Faculty

I want to suggest that MOOCs are merely the latest manifestation of the broader neo-liberal structural trends within academia. They, as well as the flex option degree being vaunted by the Wisconsin Walker administration and somewhat uncritically championed by senior University of Wisconsin administrators, represent an expanding trend through which ever scarcer public funds (because actually taxing corporations to support the creation of the skilled workforce they demand is anathema to the normalized 'common sense' of neo-liberalism) are being channelled into programs designed to develop the skill sets of the so-called "knowledge society," which has serious implications for any knowledge not instrumental to business and getting a job. That is, under these conditions, higher education is increasingly regarded as instrumental training for knowledge workers in a way that is closely aligned with capitalist rationality. And again, I think MOOCs and the flex option degree very much align with such goals.

While I am also rather dubious of their pedagogical value, and the celebratory, rather uncritical, rhetoric about democratizing access to education notwithstanding, I want to consider some of the potential labor implications of MOOCs. And here I want to suggest that many of these issues are glossed over by strong currents of technological fetishism that inform much purported digital educational innovation. That is, the liberatory potential of these new technologies tends to be foreclosed as they instead reinforce capitalist social relations.

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138 My own academic home, the School of Information Studies at the University of Wisconsin-Milwaukee, is one of four units on campus offering a degree (B.S. in Information Science & Technology) through the flex option. It warrants mentioning that the decision to pursue this mode of delivery was made by school administrators, who originally contended that a change in mode of delivery rendered the decision beyond the mechanisms for shared governance. Aside from obfuscating for months the true scope of the school's participation in the flex option degree, at least one senior administrator in the school has been actively attempting to re-write the history around the decision through specious claims purporting that shared governance on the decision was honored.

139 n.a.: "UW Flexible Option." Quirk, Kathy: "UW System Unveils First Flexible Option Degree Programs."

140 Giroux, Henry A.: The University in Chains: Confronting the Military-Industrial-Academic Complex.

141 Quirk, Kathy: "UW System Unveils First Flexible Option Degree Programs." para. 11

142 Kennedy, Kathryn, Gonzalez, Sara Russell, and Cenzer, Pamela: "Student Perspectives on Library School Degrees and the Hiring Process."

143 As discussed in Stephens, Michael: "Online Lis Education--or Not."

144 Allen, I Elaine, and Seaman, Jeff: "Changing Course: Ten Years of Tracking Online Education in the United States."

Again, while not perfect, the edu-factory metaphor goes some way in representing how trends from industry have been reflected in the university. The university parallel to industry subcontracting can be seen in the rampant outsourcing of non-academic campus personnel (especially those who had previously enjoyed union protection), the increasing casualization of routine instruction (which MOOCs and flexible option degree programs will only intensify), and, of course, the creation of the academic precariat, that class of permatemps who work on short-term contracts for subsistence wages and typically no healthcare or other benefits; all of which puts downward pressure on salaries and, even more dramatically, on job security, which is manifested in the increasing disappearance of tenure-track positions.

As has been documented by multiple empirical studies,[145] and is well known by those instructors who have taught online, the increased flexibility touted by proponents of online education comes at the cost of intensified productivity of academics, typically without a consequent increase in remuneration or reduction in other aspects of the job. Yet, and perhaps unsurprisingly given their managerial positions, only a minority (44.6 percent) of college and university administrators believes that online course delivery requires more faculty time and effort as compared to face-to-face delivery.[146] The speed-up and intensification of work that accompanies online education delivery represents the academy's digital version of early 20th century Taylorism.

Aside from the unremunerated, increased workloads of digital education, online course delivery poses a more serious risk for the long-term interests of academic laborers. MOOCs, and even more so modes of delivery such as the flex option, will make it that much easier for university administrators (that is, the one percent of the university) to replace tenured faculty lines with MOOC and flex option operators. I posit that we will experience mounting efforts by universities to exercise 'work for hire doctrines,' whereby the intellectual property rights to the intellectual output of their workers (that is, adjuncts and tenure-track/tenured folks) will be claimed by the university. After all, once the heavy lifting of actually designing and populating an online course has been completed, if the university can claim ownership it cares little who actually delivers the course subsequently. Why pay a relatively expensive tenure-track/tenured faculty member to deliver an already packaged MOOC or flex option course when you can get a contract worker to do it for a fraction of the cost? Given the adherence to neo-liberalism within the academy, university administrators have increasingly adopted private sector productivity measures and applied them to research, grants, and student credit hour production. What better way to improve that latter ratio than by opening enrolment to hundreds, or even thousands, of students and paying someone a pittance to act as operator? This has the potential to render academic labor much more susceptible to Taylorist processes of planning, rationalization, and serialization that might finally provide administrators with mechanisms to separate conception and execution in ways that further divide the academic labor force into a handful of superstar forepersons and a mass of 'shopfloor' precarious workers. And so, while I suspect my framing may not be well received by many, I contend that MOOCs and flex option programs portend some very serious implications for the class interests of university faculty. By uncritically jumping on board, or perhaps even worse, by engaging in the ostrich politics of apathy that seems to pervade so much of academia, we run the very real risk of putting, if not ourselves, then certainly future aspirants to the job out of work before they even get here.

Finally, I would assert that MOOCs, and particularly the more instrumental flex option degree that emphasizes job skills, threaten to exacerbate an already stratified and competitive environment within the academy as we begin to narrow even further the focus of what is a university education. An orientation toward short-term education markets and the corresponding prioritization of market share and revenue generation will not only displace concerns about educational quality (lip-service notwithstanding) but also further marginalize those

145 Buchanan, Elizabeth A. et al.: "A Systematic Study of Web-Based and Traditional Instruction in an MLIS Program: Success Factors and Implications for Curriculum Design." Marcella, Rita, and Baxter, Graeme: "Information and Library Studies on a Virtual Campus." Allen, I Elaine, and Seaman, Jeff: "Changing Course: Ten Years of Tracking Online Education in the United States." Kolowich, Steve: "The Professors Behind the Mooc Hype."

146 Allen, I Elaine, and Seaman, Jeff: "Changing Course: Ten Years of Tracking Online Education in the United States."

disciplines in the social sciences and, even more so, in the humanities that are motivated by educational concerns beyond the instrumental rationality of imparting capitalist job skills to a disciplined future workforce.

Conclusion

The preceding brief discussion suggests several ethical issues that these latest mechanisms of educational content delivery portend for students, faculty, and the contemporary university more generally. The first concern arises from the potential to further exacerbate an increasingly stratified system of higher education in which those students confronted by time, financial, and other resource constraints that preclude physical attendance on a campus are offered the latest digital version of 'university lite.' Rather than engage in the difficult politics of developing a structural response to the increasing neo-liberalization and unaffordability of higher education, digital delivery provides university administrators a technological solution that promises to yield increased tuition dollars while reinforcing socio-economic marginalization. Yet, and this represents a second ethical issue, the type of education most easily delivered via digital mechanisms, particularly the flex degree, aligns with the neo-liberal role of contemporary education. That is, the instrumental training most suited to electronic delivery is ideal for credentializing workers being acclimated to the discipline of their future workplace rather than imparting the type of edification required to assist students to become informed, critical, thinking citizens. Put another way, the already circumscribed commitment to social responsibility and social justice within the academy is threatened with further erosion.

A third ethical issue stems from the enclosing effect digital delivery mechanisms and associated intellectual property rights threaten to exercise on the social labor of developing course content. Although typically an individual endeavor, faculty members develop courses by drawing on a wealth of prior knowledge created by colleagues, professionals, and others. The enclosure of these collective resources, be it by for-profit educational entities or universities exercising work for hire doctrines, represents a third party privatization of the collective efforts of past and current generations that threatens to reduce the public domain at the expense of future generations.

A fourth ethical issue effects mainly faculty. These digital content delivery mechanisms offer university administrators an additional tool in their arsenal to control, discipline, and further erode the autonomy of the academic labor force. Finally, and relatedly, we are producing doctoral candidates at a rate that already far outstrips the number of secure and decently remunerated positions available within institutions of higher education. While it is certainly the case that some of those newly minted PhDs will seek employment outside of academia, it is ethically problematic for the current professoriate to contribute to schemes that will further undermine the ability of these future colleagues to obtain employment in the full capacity for which we are training them.

But perhaps to end on a note, or at least a glimpse, of optimism. As the introductory quote from the edu-factory collective makes clear, the university, not yet completely assimilated by capital, remains a critical site of social struggle. Indeed, the fact that this special issue of the journal seeks to interrogate the ethical implications of the evolving digital nature of higher education attests to this claim. We need to problematize the imposition of capitalist social relations in the university without invoking some sense of nostalgia for a romanticized past. By recognizing that the commodification of higher education is a process made possible by social and conflictual power relations, we open up the possibility of glimpsing lines of flight and terrains of resistance. We need to open up more lines of fight that serve to question the dominant, and rather uncritical, knowledge paradigms by producing and communicating oppositional knowledge antagonistic to capital's appropriation imperatives in the context of higher education. And we need to do this in a better, less insular way that seeks to restore the university as an institution that serves all of society and not just business.

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Trent M Kays:

Digital Education and Oppression: Rethinking the Ethical Paradigm of the Digital Future

Abstract:

Digital education seems to often be approached from the perspective of educational structures that existed before contemporary technology. In this way, the old structures of oppression are replicated in the spaces most capable of liberation. This article offers a conversation about a future digital education that not only enacts the goals of liberation but also works to embed social justice concepts into the oppressive structures that liberation seeks to topple. Enacting a new ethical paradigm is needed to address the issues of the digital age and education, and this article attempts to build such a paradigm that can be applied to contemporary and future iterations of educational ventures.

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Introduction

In *Teaching to Transgress*, bell hooks argues, "The classroom remains the most radical space of possibility in the academy" (1994: 12). When hooks argued this point, the pervasiveness of online and digital education did not exist. The rise in such education demands a reinterpretation of the academy's dedication to the radicalness of the classroom space.

The notion of social justice as a topic that can be interrogated within classroom spaces calls for a new paradigm in the digital age. The act of confession—one inherent in social justice-influence classrooms—shows that social justice and liberatory pedagogy are concepts easily and rightly seized upon by students, despite that students often employ the tenets of such concepts without realizing the power structures that dominate their own classroom spaces (Orner, 1992: 84).

The confessional act fundamentally changes when confronted with the speed and reach of the digital age. Therefore, such an act becomes influenced by the disturbed power structures in which it is employed. These power structures call for a new ethical paradigm. Coupled with this new ethical paradigm, the radicalness of the classroom space—and by extension the academy—seeks an uncertain end. Such an ethical paradigm is troubled by the unchartered territory of the digital age, and, thus, said paradigm can only be fully interpreted through past ethical discussions. While Aristotle wrote about ethics over 2000 years ago, the notion of "the good is what everything seeks" is burdened by the pervasiveness and access of information through online and digital mediums (1999: 1.1-2).

Education is guided by an ethic that ultimately values the student, but this ethic is not always present in discussions of classroom spaces. If the notion of oppression is accepted, the practice of liberation must be the concern of education (Freire). These issues are solely based in situated and contextual practices (Derrida, 1997: 158-159), yet said practices can only exist in an educational framework freed of the traditional power structures that regulate the ethical choices of those within it. In short, the oppressed can only be liberated by educational power structures if said structures are hitherto liberated from oppression.

This seemingly contradictory notion of education and oppression is the basis of contemporary and future digital education. Such education provides an opening in which new dialogue about the oppressed and the oppressor can be inserted and through which a new ethical paradigm can be established. The future of digital education is a future dominated by a discussion where the *why* of education gives way to the *how* of education. Meaning, more access does not necessarily mean less oppression.

A digital education that reflects and respects the notions of social justice and liberatory pedagogy can only be understood through an ethical paradigm that accounts for the technological abundance of the 21st century. The future of digital education is bound to the populations it serves. While education certainly can serve populations in need, *education done digitally* must account not only for the populations served but also the technology used to distribute the oppressive power structures inherent in traditional education.

Some Thoughts on the Ethics of Digital Education

The history of digital education is the history of technology. Indeed, the tension arising out of online and technologically-mediated education is one concerned not so much with the distant past but, instead, the distant future. The distinction between perception and happening shrinks because, in many ways, education is a life-long experience punctuated by moments of technological advancement. Such interruptions create "disjunctions" around the very technologies that humanity relies on:

> Tensions about technology surround us. A leading source of our current anxieties about technology is the troubling gap that often exists between what we think and what we see, or, in slightly more precise terms, the *disjunction* between our normative expectations for technology and what we observe and

> experience in the world around us. We perceive technology to be changing quickly, I believe, because we are continually confronted with the social and cultural and economic changes in which technology is clearly involved. (Misa, 2004: 273)

What is to be made of such disjunctions? They are the contested spaces in which technology and education intersect and, often, violently clash. Technology progresses quickly; however, education does not progress so quickly. The ethical subject—one surrounded by the established ethical paradigms of others—is bound to be destroyed by the fraught nature of forcing together technology and education. They are, of course, in a way indissoluble, but they are also complicated by their distinct purposes in 21st century human survival.

The speed and reach that technology affords complicates the function of education. Speed and reach, time and space seem tenuous terms to describe the complications of the 21st century Internet; however, the problems that plagued early iterations of the Internet continue presently. The digitization of worldly affairs means "everything is in the here and now. Before very long, the whole world will be on disk. Salvation is but a modem away" (Bouman, 1996: 1). *Salvation* is a morally burdened term for what the Internet has fashioned. One could argue Western education heretofore has been a practice of monoculturalism. The classroom as educational space is such that the priority of the dominant culture—most often a Western cultural perspective—is valued above and, occasionally, in place of the inherent multiculturalism of students and teachers. The totality of education was one where a single thought, a single way, and a single understanding was forced onto students (hooks, 1994: 35). Alas, digital education may not—though it is possible—offer salvation from the dominant monocultural narrative of Western thought.

If anything is to be gained by a world saturated by digital education, it is access to more profound multiculturalism; however, this does not guarantee that the multiculturalism encountered will be valued. Even more problematic is that there is no promised space in which multiculturalism and education coexist and coincide with the digital. Indeed, digital education—and the communities from which it draws—offers more an opportunity to locate like-minded individuals rather than culturally and socially distinct counterparts. As Stephen Doheny-Farina suggests, "[V]irtual communities offer us an opportunity to construct utopian collectivities—communities of interest, education, tastes, beliefs, and skills. In cyberspace we can remake the world out of an unsettled landscape" (1998: 16). This, then, cannot be a goal of digital education, especially if such education is understood as an ethical enterprise. Ethics in education is a place of defining, and one cannot define ethics in an echo chamber.

Still, this presents an opportunity for understanding the potential of digital education as an ethical project. Is digital education something that seeks good and, thus—according to Aristotle—something that is ethical? Education is not neutral, and it is inherently a political changeling altering its size and goal constantly. Yet, when education and ethics is discussed, often the discussion is based on academic integrity, but this is not the ethics with which digital education should be concerned. Instead, the concern should be put toward the notion of whether education should be digital at all and the meaning of such education.

If digital education reproduces the same oppressive structures from past incarnations of education, then it has already failed. Digital education should be an education that has liberation as its main objective. This, of course, has not always been the case in any vestige of education; however, it must be the main objective of digital education because of the potential for vast liberation. Ethically, the notion of pushing students toward liberation must account for their probable acculturation into a liberatory ethos. If a student is forced into liberation, the very guide said student relies on has become his or her oppressor and the importance of the student-teacher interaction is destroyed.

Take for example massive open online courses (MOOCs). While online education is not necessarily new, MOOCs[147] are a bastardized, if not well-intended, attempt at spreading education. Far from revolutionary, MOOCs offer a special type of profit-driven promise. They are a "business venture seeking to promise educational efficiency—more students served—at lower per students costs" (Carbone, 2014: 193). MOOCs in many

147 The MOOCs in question are those known as xMOOCs or broadcast MOOCs, often operated by Udacity, Coursera, etc.

ways are the warning digital education must consider before progressing into the realm of a complete and transformative pedagogical practice. The only thing MOOCs offer that traditional online education does not is massivity; however, where traditional online education can attempt to value the student-teacher interaction—an interaction vital to the process and goal of social justice and liberatory pedagogy—MOOCs can only postulate on the illusion of newness; MOOCs are, in essence, a temporal phenomena, a "restatement of online learning environments" that existed before such online massivity (Glance, Forsey, and Riley, 2013).

Moreover, the plethora of student information now held within spaces of digital education should be enough to give pause to any discussion of such education. Certainly, the location of and access to student information has always been an ethical question. In the United States, this question posed such a problem that a law was specifically written to address it: the Family Educational Rights and Privacy Act (FERPA), which "protects the privacy of student education records" (United States Department of Education, 1974).

What role education plays in the 21st century is a question of ethics. If digital education can offer salvation to the masses of oppressed, it can also offer unfortunate and expedient methods through which oppressors can continue to exist and enact an ideology bent on a subjugated future. The purpose of educators in the present and future of the digital, then, is to combat the forces of those willing to use education as a tool against liberation and for the captivity of the digitally educated mind. Thusly, digital education cannot be a reproduction of the educational practices of the last century nor can they be completely informed by contemporary educational practices. Instead, digital education must be a practice informed by spaces and futures meant to achieve—though perhaps never attaining—a utopian vision of a humanistic future.

Theorizing a Digital (Education) Future

If digital education cannot simply be a reproduction of past educational practice, then what can it be? Of course, this becomes a definitional issue. "Digital education" as terminology is itself not new, and it does provide a warning on impressing such terminology for acts far from the digital:

> The concept of digital education is being a little too freely applied. Like the child with a hammer, who sees everything as a nail, everything that can even remotely be seen as digital education is being described as such. Without two-way communication and feedback, much of what passes for digital education today more closely resembles reading a book (sometimes a really thin book) rather than taking a course. (Peck, 2000: 52)

Certainly, not every incarnation of education can be digital; however, in the Western world, this may be the case; or, perhaps, every style of Western education has digital components. Briefly and for the purposes of theorizing a future consumed by digital education, three characteristics should be assumed:

1. A digital education is an educational venture connected in some way to the digital tools (computers, mobile phones, tablets, etc.) present within the cultural and societal structures through which it arose.

2. A digital education is an educational venture connected in some way to the tools and technologies (browsing, word processing, etc.) of the Internet and with the means to use said tools and technologies of the Internet.

3. Finally, a digital education is an educational venture averse to and not oriented toward the spatial aspects (buildings, physical classrooms, etc.) of past and, in many ways, contemporary learning.

Since it is the nature of education in the 21st century, these characteristics exist in a state of flux. As mentioned previously, the history of digital education is the history of technology; therefore, as with technology, digital education is—and must be—in a constant state of change, spurning the static nature of past educational ventures and structures. Formal education, as it currently exists, will not end with the simple application of the digital (Male and Burden, 2013: 1-3). It would be foolish to think so because no matter how digital something becomes there is always a need for a guide in some time and some place.

A "digital future" may be too conceited terminology. It assumes that the digital future has not yet arrived, or that such a future will somehow be different from what presently exists. For the most part, technology exists to affect change via a digital education; however, the politics of education—in all forms—seems to prohibit or cloud the pace at which such change could be achieved. For example: It is not difficult for a teacher to assign work that engages cultural and societal differences outside the classroom and through social media.

The problems that often are proffered with social media use runs a gamut from cyberbullying to distraction to in-class disobedience. These are problems that are reported in nightly newscasts and that draw the concern of such newscasts' audiences. In addition, digital education can be subjected to behavior prevalent in most online communication, like flaming, trolling, and other uninhibited behavior. In her 2001 book, *Cyberliteracy: Navigating the Internet with Awareness*, Laura Gurak describes such behavior as "techno-rage" and the "online manifestation of road rage" (47-53). As digital education will most likely use some form of online communication, such behavior becomes critical to digital awareness. Therein rests at least one ethical issue of digital education.

In embracing the digital future, a focus on navigating the treacherous and vitriolic nature of some online communication must be paramount. Moreover, ethically, is it appropriate to subject those most in need of liberation to the oppressive nature of such language? To knowingly place students, teachers, and others in a space where they could be verbally and mentally abused while attempting to fulfill their own liberatory acts is a dangerous precedent; however, this does not mean such issues will disappear, as they are part of the oppressive structure in which liberation is desperately needed.

Instead, it may become unethical to not subject students to such behavior. Meaning, it is unethical to ill-prepare students for an often violent world that awaits them. Thus, navigating such spaces becomes increasingly relevant to digital education and the future it provides. As such, the digital future and education should expressly be the domain of a social justice and liberatory ethos and pedagogy. Most pedagogies are not equipped to deal with the inherent and institutional variables often reproduced in digital and online spaces.

If the connection of digital education and the potential of a digital future are currently representative of the oppressive structures confining students, teachers, and others to their circumstances, a pedagogy based in acts of liberation and social conscience will provide the tools for the oppressed to free themselves from whatever and whomever is their oppressor. Ironically, an educational giant from the 20th century can best speak to systemic oppression: Paulo Freire.

Freire's pivotal work—*Pedagogy of the Oppressed*—directly challenges what it means to educate and how to fight oppression. Freire never had to contend with the challenges of the digital age. Digital education, the Internet, and 21st century technology escaped his critical interrogation; however, Freire's work is equally applicable. For Freire—and the educational activists and thinkers who followed his lineage—liberation is the answer to oppression. Such work must be the goal of the oppressed: "to liberate themselves and their oppressors as well" (2010: 44). For digital education, this Freirean imperative becomes crucial for, as suggested earlier, the great utopian vision. The oppressed are capable of liberating themselves with the correct tools and tactics; the most valuable method of liberation is through engaged dialogue among and through those involved (2010: 65). Indeed, this type of method is one based in a combination of theory and praxis, developing from "the breaks, discontinuities, and tensions in history, all of which become valuable in that they highlight the centrality of human agency and struggle while simultaneously revealing the gap between society as it presently is and society as it might be" (Giroux, 2009: 47). The gap, as described by Henry Giroux, is the place of disjunctions (Misa, 2004: 273). This gap is where the difficult work of theory, praxis, and ethics combine to address the digital education of the present and future. The gap that is formed and in which this difficult work exists embodies the "lived practice" necessary for remolding existing paradigms (Freire, 2001: 40).

The affects of the digital age allow students, teachers, and others to experience lived practice in ways not afforded past educational incarnations. The almost constant connection to the Internet in the Western world provides an opportunity to experience varying cultures and societies once inaccessible to many, especially those from poor and lower class backgrounds. Freirean notions of liberation and social justice become increasingly vital to digital education and the oppressive structures inherent in contemporary society. Social justice provides

a basis to affect change in that it often encourages a reevaluation of the structures that exist (Coates, 2007: 585), whereas liberatory pedagogy alone assumes a somewhat static structure. These approaches are best suited to each other because they both have action as their focus. Within digital education, the ability to liberate oneself should be paramount. The breadth and access of the Internet and other digital devices provide the opportunity to more fully and completely end the domination of the oppressor (Freire, 2010: 183), while reorienting marginalized groups (i.e. often the oppressed) into the center of the ongoing dialogue (Coates, 2007: 586-587).

A New Paradigm

The digital age is dynamic and unflinching in its evolution, moving ever forward and leaving those behind who are unwilling to change. Knowing this, any digital and ethical paradigm offered must embrace the eventuality of both insignificant and significant change. This change is not limited to technology; it must also include the students, teachers, and others who most benefit from the omnipresent connection that is available to a large portion of the world. Critically, this paradigm must account for the application of pedagogy to technology. Too often, the pedagogy employed by teachers can become stale and worn. Meaning, teachers are loath to change and understand their pedagogical practice as in a constant state of renewal.

Pedagogy is both formalized and rebellious. Given the appropriate circumstances, pedagogical practice is such that it needs "to be worked out again and again" (Ellsworth, 2011: 305). Of course, relying on the process of technology does not guarantee the liberatory and social justice project that digital education should embody. It would be foolish to consider such a process as one where the natural output is critical engagement or consciousness (Freire, 2005: 30-31); therefore, a new paradigm must account for this issue while equally empowering students to work toward their own ends.

Through a discursive process, digital education can be continually refined; thus, the following characteristics of a new paradigm must be understood as moments in time: They will pass and new characteristics will arise to meet new challenges. As education continues to live and move in the digital age, three characteristics should guide its ethical and new paradigm:

1. Education in the digital age must employ Internet technologies to encourage the confessional acts that are vital to understanding social justice and liberatory acts.

2. Education in the digital age must address the privileged and complicated nature of technology in the classes, societies, and cultures of not only the oppressed but also the oppressor, so, then, both can be liberated from oppression.

3. Finally, education in the digital age must reimagine the classroom as a global networked environment that is connected to both privileged and impoverished populations and where the pursuit of radical embodiment and student agency is paramount to course content.

These characteristics are easily attainable in any contemporary Western classroom. Unfortunately, the application of this ethical paradigm does not guarantee liberation or the challenging of systemic issues inside and outside the classroom. Students may recognize such liberation and be unable to act; consequently, it is the responsibility—the ethical recourse—of educators to assist students through action (Gabel, 2002: 195-196). Furthermore, it is possible that such liberation, especially when confessional acts à la social justice are used, will result in dichotomized and limited traps: "narratives of victims/saviors and of villains/heroes" (Diab et al, 2013). Despite this, digital education can foster a strong sense of reflection and, in turn, avoid these potential problems. Any serious attempt at a digital education must include critical reflection on the practice of liberation (Freire, 2001: 43-45), and this type of reflection is the foundation of the aforementioned and new ethical paradigm, which seeks to address the fraught and complicated potential of the digital future.

Conclusion

The future—digital or not—waits for no one. It waits for no student, no teacher, and no person. As the present barrels toward the future, the impact of the digital on education will become increasingly complex and dense. It will fall on educators to explore and help students understand the starkly turbulent future of education and said students' role in it. One of the fundamental roles critical teachers can play is to lead students in the direction of a more socially and ethically just world (Giroux, 2010). This must be the ultimate goal of a liberatory and social justice oriented digital education. The digital future is unknown, but students, teachers, and others can be best equipped to meet this unknown terrain with the tools provided by a critical consciousness raising and radical embodiment of education in the 21st century.

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Herman T. Tavani:

Book Review: Honorary Volume for Evi Laskari

Honorary Volume for Evi Laskari. Edited by Maria Bottis (Athens, Greece: Nomiki Bibliothiki, 2013; xviii + 795 pages. ISBN: 978-960-562-158-2).

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The *Honorary Volume for Evi Laskari* is a collection of short essays and full-length articles dedicated to the memory of Evi Laskari (1964-2008), philologist and former Head of the Central Public Library of Corfu (Greece). The volume is organized into two main sections or parts. Part I, titled "Texts on Evi Laskari," effectively serves as a (posthumous) *festschrift* for Laskari; it includes a series of short essays and texts that remark on her many contributions to the field of information/library science (in Corfu and beyond). Some essays in this section also hint at ways in which Laskari's work has influenced aspects of the field of information law/ethics, especially in the Greek academic community. (The eight short essays/texts that make up Part I are printed in both Greek and English.) Some of the essays included in this section also suggest ways in which Laskari's work might be interpreted as supporting the need for a dedicated forum in which scholars could meet at regular intervals to discuss ethical and legal issues affecting information/library science. In that regard, the annual ICIL (International Conference on Information Law/Ethics) Conference series, founded by Maria Bottis in 2008, has responded nicely to Laskari's legacy. Some thematic connections between the essays/texts included in Part I of this volume and the collection of full-length conference papers that follow in Part II will no doubt be recognized and appreciated by the discerning reader.

Part II is comprised of forty (selected) papers originally presented at the Fifth ICIL Conference (ICIL 2012) at the Ionian Academy, Corfu (June 29-30, 2012). This part of the volume is organized mainly into eight (topical) sections or chapters: 1. Copyright; 2. Patents; 3. Privacy; 4. Computer and Information Ethics; 5. Freedom of Speech; 6. Libraries and Open Access; 7. *Varia*; and 8. Women in Academia. The length of the individual sections vary; for example, those on patents and libraries/open access contain only two papers each, while the sections on *varia* and copyright include eight and ten papers, respectively. What is particularly impressive about the papers comprising Part II is the diverse range of specific topics examined within the eight (general) sections or chapter headings. For example, papers included in the section/chapter on copyright examine copyright-related issues affecting particular nation states (such as Albania, Italy, the U.S., and the EU, in general), as well as copyright-specific controversies affecting different kinds of media, such as software (programming languages) and art (art-related Web sites). Unlike the papers in Part I, however, those included in Part II are printed only in English.

From this reviewer's perspective, four articles in Part II are particularly noteworthy: Migle Laukyte's "A Rawlsian Perspective on Copyright and Justice in Italy"; Richard Spinello and Sarah Cabral's "Rethinking Gene Patents"; Litska Strikwerda's "Should Virtual Cybercrime Be Brought under the Scope of the Criminal Law?" (included in the section/chapter on freedom of speech); and Paul Sturges' "The Brain at the Centre of the Universe: Lessons from Popular Neuroscience" (an ICIL 2012 keynote presentation). To comment in more detail on the content of some specific papers at the exclusion of others, however, might fail to do justice to the positive impact that the collection of papers in Part II will likely have, overall, for the readers of this volume. It is perhaps also worth noting that the closing section of Part II, "Woman in Academia," serves appropriately as a "bookend" to Part I; for example, the four papers comprising the final section, which examine a range of issues affecting gender in information/library science (in the Greek academic world) and information law/ethics (more broadly conceived), nicely complement the content in some of the short essays/texts dedicated to Evi Laskari in Part I.

As already suggested, the *Honorary Volume* serves multiple functions – e.g., as a *festschrift* honoring Laskari, as well as a (hardcopy) proceedings for the ICIL 2012 conference papers. Moreover, it succeeds in accomplishing these disparate objectives quite effectively and coherently, via an overall theme (of information law/ethics) that unifies what might otherwise seem to be two distinct works warranting separate volumes. Some readers may note that this edited volume also has a Janus-like aspect in that it both "looks back" (on Laskari's life-long contributions to the field of information/library science) and "looks forward" via some timely papers (in Part II) that anticipate issues and controversies that will likely emerge in the field of information law/ethics in the near future.

Many readers will no doubt be struck by the manner in which this edited volume is so elegantly designed and presented (by its publisher, Nomiki Bibliothiki). I suspect that many readers will also be struck by the (overall) high quality of this volume's content, which was made possible in no small part by the impressive range of international scholars who contributed their papers to it. Not only does this handsome volume succeed in honoring Evi Laskari's legacy through its collection of essays/texts that pay homage to this worthy scholar, whose life's work has contributed significantly to the field of information/library science, but it has also cleverly provided a novel, or at least a slightly alternative, forum for disseminating print versions of papers originally presented at a major international conference. In an era when many conference proceedings now appear to be hastily assembled, sometimes with very little thought given to themes and organizing principles for arranging the content, and are then made available only online or only in digital media, Bottis's volume is a welcomed exception. Her volume should be applauded for bringing together quality conference papers and *festschrift*-like essays (which otherwise might never have been easily available to a broader international audience) in one, very-carefully-conceived book of readings.