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Personal Learning Artefacts: Persistence, Ownership and Privacy

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Abstract

Traditional classrooms have been often regarded as closed spaces within which experimentation, discussion and exploration of ideas occur. Professors have been used to being able to express ideas frankly, and occasionally rashly while discussions are ephemeral and conventional student work is submitted, graded and often shredded.

However, digital tools have transformed the nature of privacy.

As we move towards the creation of life-long archives of our personal learning, we collect material created in various 'classrooms'. Some of these are public, and open, but others were created within 'circles of trust' with expectations of privacy and anonymity by learners.

Taking the Creative Commons license as a starting point, this paper looks at what rights and expectations of privacy exist in learning environments? What methods might we use to define a 'privacy license' for learning? How should the privacy rights of learners be balanced with the need to encourage open learning and with the creation of eportfolios as evidence of learning? How might we define different learning spaces and the privacy rights associated with them? Which class activities are 'private' and closed to the class, which are open and what lies between? A limited set of set of metrics or zones is proposed, along the axes of private-public, anonymous-attributable and non-commercial-commercial to define learning spaces and the digital footprints created within them.

The application of these not only to the artefacts which reflect learning, but to the learning spaces, and indeed to digital media more broadly are explored. The possibility that these might inform not only teaching practice but also grading rubrics in disciplines where public engagement is required will also be explored, along with the need for consideration by educational institutions of the data rights of students.

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Introduction: Naked on the internet

The 'sanctity of the classroom' has been destroyed, like all privacy, by the internet. The pre-digital classroom was a space in which there was both an implicit right of privacy and tolerance of error. In the digital classroom, everything is recorded, and may emerge to be used against you. All personal learning is now public, but we have not fully come to terms with the implications of the confluence of ubiquitous data capture, research based learning and the archiving by learners of their experiential learning as evidence of achievement. This paper summarises several 'old school' positions, outlines the contemporary transformations and seeks to draw those together and offer concepts which might inform future practice.

Privacy and Persistent Personal Learning Archives

The initial issue is based on an assumption not widely stated – that learners portfolios are becoming persistent personal lifelong learning archives. There are two prime reasons for this – maintaining a personal learning journal, and being able to present material either for RPL or as evidence of skills for employers or clients. Ubiquitous use of digital learning environments, easy data capture and cheap storage make the creation of extensive Persistent Personal Learning Archives possible now in a way not hitherto possible. A consequence of this is that a students Persistent Personal Learning Archive will include not only evidence of that students own learning, but also text, audio and video recordings which include other students' personally identifiable information, original intellectual property, and statements not intended for publication outside the 'classroom'; some of which may reflect poorly on other students.

As an example of how this might be problematic, suppose you present in an interview a short video clip of a classroom discussion on a controversial topic in which you demonstrate excellence and I appear to be incompetent or immoral – and I happen to be the next candidate facing that interview board. This is now a plausible scenario, whereas a decade ago it was impossible. The transformation in digital media over the past decade has radically changed things which we formerly took for granted.

Truths Old and New

Sanctity of the classroom

The 'sanctity of the classroom' was traditionally linked to a physical space within which professors held authority, even if they were wrong, and students occasionally had freedom to be stupid – the greater the error, the more the learning. There was a clear space within which 'academic freedom' was

protected. 'Academic freedom' clearly included teaching in texts like the 1940 Statement of Principles on Academic Freedom and Tenure by the AAUP, a defining text which identified extramural space, and, by implication, intramural space. It was extended in 1970 to include teaching assistants, and, since in recent years it has become common to accept that students are important participants in learning, it seems logical to argue that they also enjoy a right of academic freedom. ("1940 Statement of Principles on Academic Freedom and Tenure," n.d.)

The erosion of privacy in the digital age, and the increasing use of online learning, particularly social media tools, make it harder to draw clear distinctions between intramural and extramural spaces, and to map out which conversations are protected by the academic freedom to engage in controversy, and which are not. While the role of the student as an active partner in learning is now widely accepted, formal definitions of academic freedom have not recognized learners rights to 'academic freedom' In class simulations in International Relations, Politics or mock trials, it is usually pedagogically desirable to have learners play the role of the 'bad guy' and enunciate points of view which are ethically wrong, and which might even be illegal outside the 'classroom'

Data Creation and protection

We are now all data creators. Everything that is captured digitally is data. Data protection principles were defined when the creation of digital records was almost exclusively the province of large organisations. Access to that data was controlled, and 'data controllers' could be identified and assigned clear responsibilities under data protection law.

But now we are all data creators, and most data is open.

Advances in technology like voice and face recognition now means that data is not only alphanumeric, but visual and audio. Now, when you capture digital video in a seminar, you are creating data which includes time stamped, geolocated personally identifying information for everyone who might be recognizable in the background. We have seen popular hostility to technology like Google Glass in bars, but it also has implications for the academic seminar.

Content and Process in Learning

Approaches to university teaching have changed profoundly in the past 30 years. Formerly university teaching was heavily content driven. Where it had a relationship to research, it was research-informed rather than research based. Learning is now interactive, student centred, often research based and seeks to develop self-regulated and self-directed lifelong learning skills which demands a transformative engagement with metacognitive issues to cross critical thresholds which will often alter the learners epistemological and even

ontological perspective. It is now clear that students must not only acquire foundational knowledge in their disciplines, but also skills and abilities which require them to engage with metacognitive issues in an experimental way

Knowledge Creation

Whereas universities prepared students for careers in well-defined, and reasonably stable professions, we now life in an era which is 'volatile, uncertain, complex and ambiguous.' Many universities now explicitly claim to be educating students for the 'knowledge economy' or to be 'knowledge creators' Nonaka defines knowledge as 'justified true belief' (Nonaka & Takeuchi, 1995) and explains that making tacit knowledge explicit requires exposing to scrutiny the beliefs which justify or underpin our construction of knowledge.

A key part of knowledge creation is managing the conversations so that this exploration of the 'feelings and belief systems' can take place in a 'caring athnosphere' which free the process from 'distrust and fear, and break down personal and organisational barriers' (Von Krogh, 2000) Creating a learning space in which this can happen is now a key challenge

Research Ethics

Previously, research was something which a researcher performed on research subjects. Any comprehensive approach needs to consider not only the issue of classroom privacy, but also the impact on learner privacy of research on teaching and learning, and of the impact of the move to research-based learning. The first of these treats student learning experiences as a the subject of scholarly inquiry in order to improve the learning experience, with research ethics implications while in the second, students work as researchers, and where part of their research matter is their own personal learning, as well as the personal and collaborative learning of their classmates, the issues of ethics and social responsibility become more complex.

These profound changes in the landscape have already thrown up cases where issues of ethics and privacy arise at the meeting point of pedagogy and new media. There has been discussion about inappropriate student posts on social media, which must affect our use of social media tools for learning, while academic researchers have had problems with legal and ethical issues arising from research and from the public exposure of classroom work.

The Problem: Cases

Angrymath

In this context, MOOCs represent the most radical departure from the traditional classroom. We have seen how 'AngryMath' posted a detailed critique of faults and errors in Sebastian Thrun's famous Statistics 101 course which launched the MOOC as a mass market phenomenon, and forced Thrun to acknowledge the

need for changes and improvements. For those unfamiliar with the discussion, the debate showed points at which the teaching of an experienced academic in statistics were simply wrong.(Collins 2012)(Thrun 2012a)(Thrun 2012b)

Siegel

One of the most high profile recent cases of embarrassing digital content – albeit it social rather than class related, are the Evan Spiegel emails detailing his activities in his college fraternity. Spiegel, now CEO of Snapchat with a market valuation of $2bn, quickly disowned the emails, claiming "I'm mortified by my idiotic emails; they don't reflect my views towards women" (Shontell 2014) Siegel may certainly have matured, but public opinion is often unforgiving.

Lessig

Noted internet scholar, Lawrence Lessig, found himself embroiled in legal action with a record label, over the question of 'fair use' of a music track in class (DeSantis 2013)

Missouri

More relevant is the case of class videos edited for political reasons. In one case some thirty hours of in-class videos were edited down to produce two seven minute videos which apparently showed University of Missouri faculty advocating the use of violence by workers in industrial disputes. The video material was part of a team taught distance education course which included both staff and students and was supposed to be visible only on the password protected university Blackboard LMS. As a result, the posting of the material on a public political website raised issues not only about academic expression in the 'sanctity of the classroom', and the employment security of the teaching staff involved, but also about student privacy. (Schmidt 2011) One consequence of that was a decision by the university that students who wished to record classes "would first have to obtain written permission from their professors and classmates" in order to "to protect "the sanctity of the classroom," so students and faculty can freely express their opinions without worrying about their comments' being posted online." (Huckabee 2011)

T3

On the other hand, internet researchers have proven to be remiss in their grasp of privacy concerns, and in the case of the "Tastes, Ties and Time (Zimmer, 2010) research, even institutional ethics review boards have been found wanting. The T3 research project involved the manual collection by RA (resident advisors) of Facebook data on a cohort of undergraduate students at an anonymous college in the North-Eastern United States. The intention was to gather this data for a cohort of students in each of their four undergraduate years, remove personally identifying information, and release it for research projects, subject to a range of conditions, including one explicitly prohibiting re-identifying the research subjects.

However, the process was flawed. Based on the geographical region, the size of the class and that it was a coed institution, a list of seven possible colleges was quickly identified. Based on the list of majors in the data set, it was easy to identify the institution as Harvard. Since some of the cases in the dataset were unique in terms of home state or ethnicity, it was theoretically possible to identify some of the subjects from other internet sources. (No reputable researcher claimed to have done this, but several pointed out it was possible).

Furthermore, the data collection method failed to recognise that while the data subjects may have shared some personal information within the network of classmates and RAs, publishing that dataset potentially exposed that information beyond the groups with whom those students were willing to share it.

Since university life is traditionally a time of personal transformation through both learning and extracurricular experience, it is possible that publication of the dataset and the risk of re-identification of the subjects could reveal explorations of a political, religious or sexual nature, the publication of which would certainly have been an invasion of privacy, damaging to the university experience and possibly personally damaging to at least some of the data subjects.

The researchers argued that all of the data was on the internet anyway, that they anonymised it, and that they had the college's Committee on the Use of Human Subjects approval, and that

" The complete set of cultural taste labels provides a kind of ''cultural fingerprint'' for many students, and so these labels will be released only after a substantial delay in order to ensure that students' identities remain anonymous." (Zimmer, 2010)

This serves to reveal not so much the failures of the researchers as the virtual impossibility of truly anonymous research in the digital age. It predates significant debates on the erosion of privacy in the digital age, growing awareness of the use of the internet as a tool for surveillance and public concern over the meaning of privacy on social media, as well as the changing terms and conditions governing privacy on social media sites. Finally, it focuses on the old idea of the students as research subjects, rather than as active participants in research based, transformative learning. As digital pedagogy develops, it serves to show how we need a proactive approach to collaborative, transformative digital pedagogy which takes a positive approach to creating a culture of informed and respectful attitudes among students engaged in exploratory learning, and define reasonable conventions to allow deep exploration.

Powers research on Twitter

Powers research on Twitter chats is different inasmuch as twitter is a public space (Power, 2013). Her research was on twitter chats related to education which were linking together with hashtags (edchat, mathchat) and publicly archived on the web for later reference. Power encoded the transcripts using the CoI model; she included anonymised quotations in her research thus:

> Participant 108: @participant186 The one thing admin could do to foster collab is to simply ask teachers, "What needs to happen in our school?" #edchat

Since these chats are archived publicly, (at http://edchat.pbworks.com) unlike the Facebook material in the T3 study, it is easy to track some of these back to the actual participants. In fact, it proved possible in the case of one anonymised participant to find not only her twitter username from the chat transcript, but from there her professional affiliations, profiles on Linkedin, Blogger, Pinterst and, thanks to Google Images, pictures of the research subject.

Power encoded the twitter chat transcripts using Garrisons 'Community of Inquiry' framework, a well known framework which has been widely used to study asynchronous online discussions. The CoI framework (Garrison 2000, 2007) explores the effectiveness of online discussions by looking at the interaction of social, teaching and cognitive presence, with the latter moving from triggering event, through exploration, integration and resolution. In all three samples analysed, Power found few, if any posts which could be coded as being in the resolution stage, a problem which is also seen in other studies using the CoI framework (Power, 2013)

Facebook Emotion Study

The most recent controversy in this area is the Facebook emotion control study, officially 'Experimental evidence of massive-scale emotional contagion through social networks' (Kramer, Guillory, & Hancock, 2014) in which researchers from Facebook, Cornell and the University of California manipulated newsfeeds to investigate impacts on moods. There is some dispute as to how far the study was reviewed by the IRB at Cornell, but in any event, Grimmelmann argues that it was not an observational study, but an experimental study, that as such it did not meet the 'Common Rule' Criteria for informed consent and asserts that "The study harmed participants:" His point that "The study itself is not the problem; the problem is our astonishingly low standards for Facebook and other digital manipulators." is potentially relevant for educators, and students, whose transformative learning may involve manipulation through digital media. (Grimmelmann, 2014). Not surprisingly, it provoked calls for regulation:

"Jim Sheridan, a member of the Commons media select committee, said the experiment was intrusive. 'This is extraordinarily powerful stuff and if there is

not already legislation on this, then there should be to protect people,' he said." (Booth, 2014)

These cases show that there is a problem with privacy in the social and new media space, that it has touched on academic life, research and learning, and there have been initial efforts to deal with it, and calls for regulation. Researchers in the social sciences have bemoaned the application to their research of ethics protocols designed for biomedical sciences (Sikes & Piper, 2010) Two possibilities now confront academics: one is that ethical regulations derived from biomedical research or child protection will be applied to the use of new media in university and life long adult learning; the other is that we recognise that a key learning outcome of a university education is learning to manage transformative, knowledge creating conversations, and build both spaces and practices to scaffold it.

Private, Personal and Public Learning Spaces: Creative Privacy

Having looked at key transformations and at some cases where the meeting of the digital with students, research and learning went wrong, it is now time to look at possible pathways forward.

Creating some explicit practices and methods to deal with managing conversations and the spaces in which they happen may help to make this easier, and make it possible to grade performance in some way. It is difficult to make fully explicit the tacit skills involved in curating knowledge conversations, but some markers may be created on the path along this road less travelled.

Key issues which emerge from these cases are the differentiation of public and private spaces, the nature of informed consent and the difficulty of sustaining online discussion threads to the point of resolution. These are critical since students are being prepared for a world in which social media use for learning and work is pervasive, data creation and reuse is an everyday activity and knowledge creation requires managing conversations to resolution, for which a trusted space is important.

The question thus is: How can we create such spaces? How can we create a set of practices which make learners explicitly aware of the different dimensions of privacy?

A possible model which has successfully addressed complex intellectual property issues with simple rules is the Creative Commons License ("About The Licenses - Creative Commons," n.d.). The Creative Commons license is built on four simple blocks

Attribution
Share Alike
No Derivatives
Non-Commercial

Which build into 6 combinations

Attribution alone	BY
Attribution + NoDerivatives	BY-ND
Attribution + ShareAlike	BY-SA
Attribution + Noncommercial	BY-NC
Attribution + Noncommercial + NoDerivatives	BY-NC-ND
Attribution + Noncommercial + ShareAlike	BY-NC-SA

A privacy scale which might do for privacy what the Creative Commons License does for creative works could look like this:

- Closed discussion where all participants require not to be quoted outside the group. (Sanctity of the Classroom; Confessional Rule)
- Closed discussion where all participants agree that discussions would not be quoted outside the group unless anonymised (Chatham House Rule)
- Closed discussion where the participants were willing to consider being quoted outside the group later only where permission for the quote was sought and given.
- Closed discussion where all agreed to be publicly quotable provided the quote was checked for accuracy.
- Closed discussion where all agreed to be publicly quotable. (Open)
- Open discussion in a public forum (Public)

Traditional conceptions of the nature of the university experience jump from the first of these states to the last – almost all learning was presumed to take place behind closed doors in class, until, on completion of the doctorate, the learner was required to produce not only an original contribution to knowledge, but one which would be of publishable quality. Over time, the bar of public scholarship moved with the expectation that Phd students would present at conferences, and publish during their research. Creative arts moved faster than other areas with the common practice of a public exhibition in the final undergraduate year. However, in the past decade, the use of a wide range of social media tools has radically moved the point of public engagement down into the undergraduate years for many students. It has now the case that learning is a public activity even in first year undergraduate programmes.

It can be argued that since the vast majority of students use social media tools publicly and comfortably, the use of those tools for learning is nothing novel, and university educators are in fact struggling to catch up on the tools used by undergraduates.

This is to miss a profound difference between voluntary participation in arguments about music or football on Facebook, and discussions leading to metacognitive transformations during the undergraduate years which need to be structured and scaffolded. Part of that is maintaining private spaces where learners can be wrong without being publicly embarrassed, either at that time or later.

It is important not only to define the circles of trust in our digital learning spaces, but to equip students with the skills to manage trusted conversations in knowledge creation. As students in their digital learning create data, it is important that they understand the responsibilities that go with that data, and the ethics of research when the subject of their research is their own and their colleagues learning processes. These have hitherto operated in separate silos, but need to be integrated.

Grading to structure discussion spaces

Setting understanding goals for this therefore requires authentic assessment informed by engaging with private and public spaces and treating different types of knowledge in the appropriate space. Academics are familiar with mapping learning to models like Blooms Taxonomy or the Teaching for Understanding model. Mapping public and private space and explicit and tacit knowledge suggests a matrix.

Merging with the distinction between tacit and explicit knowledge favoured by knowledge management, here the revised Blooms Taxonomy adds a more finely grained scale (Krathwohl, 2002). "Spaces" for personal reflection and individual work are added to the proposed list of shared spaces for completeness.

	Explicit					Tacit	
	Factual Knowledge	Conceptual Knowledge (inter-relationships between elements)		Procedural Knowledge (methods of inquiry)		Metacognative Knowledge Strategic knowledge, knowledge about cognitive tasks including self knowledge	
	Remember	Understand	Apply	Analyse	Apply	Create	Self-Knowledge
Personal Relfection							
Individal Work							
Closed discussion where all participants require not to be quoted outside the group. (Sanctity of the Classroom; Confessional Rule)							
Closed discussion where all participants agree that discussions would not be quoted outside the group unless anonymised (Chatham House Rule)							
Closed discussion where the participants were willing to consider being quoted outside the group later only where permission for the quote was sought and given.							
Closed discussion where all agreed to be publicly quotable provided the quote was checked for accuracy.							
Closed discussion where all agreed to be publicly quotable. (Open)							
Open discussion in a public forum (Public)							

In his revision of Bloom, Kraithwohl shows how grids similar to this can be used to locate course objectives with respect to the levels of the taxonomy; adding the space dimension allows specification of which objectives are most appropriately targeted along the personal-public axis. The progression from personal to public may not be linear, and some work may not comfortably sit just one box on a grid of this type.

Traditional assessments have tended to focus solely on the end-product; the terminal examination or essay, but breaking down the research process involved in creating a knowledge product – essay, paper, film, website or other transmedia presentation allows greater clarity not only on the steps of the process of research and knowledge creation, but also which elements can and should be public, and for which a degree of privacy is more pedagogically useful. Personal-public locations in the stages of the process might be:

- Location of Sources: Group or Class activity, probably private but after evaluation of the sources, the production of a curated bibliography would move to the public sphere

- Analysis of Argument in sources is best done by breaking sources down as outlines or mindmaps to separate argument from evidence. If each student in a group is required to mindmap a source and share that with the group, a wider range of reading can be surveyed. However, while some students excel at this and will be happy to have this material become public, others will not. This is a step where some media degree of privacy needs to be agreed by a group

- Literature Review of the existing knowledge on the topic flows logically from the pervious step; this may include a discussion in which learners work out the scope of the debates: this discussion would benefit from being frank and private while the finished product would be public

- Essay plans in various forms would initially be an individual product, refined by group discussion but rarely intended to become public

- Initial writing of drafts would be an individual task but in a collaborative exercise, those drafts would be shared and edited into a combined text by the group. Even though this step is late in the process, it is one which students peer comments on each others writing would need to be most private. Within a group, anonymous commenting might be desirable, much in the manner that academic peer review is anonymous. The process here would thus move from individual drafting through closed group editing to a final, edited product fit for public exposure.

In these stages, 'public' will vary depending on discipline and level of students. First year undergraduates are rarely required to present work in any public space. Senior undergraduates are expected as a matter of course to be able to present their work at least to their class.

Understanding where work stands on a public-private axis should inform grading. Rubrics for grading closed discussions should value honest, insightful and timely contributions to the discussion rather than presentation and literary style whereas public outputs would require attention to those and weight the grading accordingly. Private spaces should be treated as locations for experimenting with new ideas in trusted conversations, without being penalized for mistakes or struggling to express them whereas finished products need to be clear enough to speak to a public audience.

Conclusion

A learning space and a learning conversation can happen in any place, physical or virtual, and can now be archived effortlessly in a persistent personal learning archive for reuse in the future in an unanticipated contexts. What is important therefore is not only the space, but putting effort into making explicit for students practices of discourse designed to allow honest, open exploratory conversations to happen.

Clarity about the nature of a learning space, whether it is physical or virtual will not only help students develop awareness of how to manage knowledge conversations, but also restore spaces in which learners are free to fail because they are in a group which is aware of the appropriate, fair and ethical use of the data created in the learning process.

References

1940 Statement of Principles on Academic Freedom and Tenure. (n.d.). *American Association of University Professors*. Retrieved June 30, 2014, from http://www.aaup.org/report/1940-statement-principles-academic-freedom-and-tenure

About The Licenses - Creative Commons. (n.d.). Retrieved June 30, 2014, from http://creativecommons.org/licenses/

Bowman, N. D., & Akcaoglu, M. (n.d.). "I see smart people!": Using Facebook to Supplement Cognitive and Affective Learning in the University Mass Lecture. *The Internet and Higher Education*. doi:10.1016/j.iheduc.2014.05.003

Collins, D. (2012). AngryMath: Udacity Statistics 101. Retrieved from http://www.angrymath.com/2012/09/udacity-statistics-101.html

Denise Caron,. (21:36:01 UTC). *It's A Vuca World!* Business. Retrieved from http://www.slideshare.net/dcaron/its-a-vuca-world-cips-cio-march-5-2009-draft

DeSantis, N. (2013, August 27). *Harvard Professor's Online Lecture Prompts Fight With Record Company – The Ticker - Blogs - The Chronicle of Higher Education*. Retrieved June 4, 2014, from http://chronicle.com/blogs/ticker/harvard-professors-online-lecture-prompts-fight-with-record-company/65261

EBSCOhost | 17289143 | "To Say or Not to Say:" Teachers' Management of Privacy Boundaries in the Classroom. (n.d.). Retrieved May 31, 2014, from http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=03638782&AN=17289143&h=iteL3Dv96SXEajv7Q84cTqRWzFOVQ%2fA6uO2Wmes1PZafI%2f8fc56CgVBdn3PBEVzfTwlzrArsK87nXm5KEgO5Cw%3d%3d&crl=c

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143–1168. doi:10.1111/j.1083-6101.2007.00367.x

Grimmelmann, J. (2014, June 30). *The Laboratorium : As Flies to Wanton Boys*. Retrieved June 30, 2014, from http://laboratorium.net/archive/2014/06/28/as_flies_to_wanton_boys

Huckabee, C. (2011, November 18). U. of Missouri Seeks to Limit Recording of Classroom Lectures. *The Chronicle of Higher Education Blogs: The Ticker*. Retrieved from http://chronicle.com/blogs/ticker/u-of-missouri-seeks-to-limit-recording-of-classroom-lectures/38255

Kramer, A. D. I., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences*, *111*(24), 8788–8790. doi:10.1073/pnas.1320040111

Krathwohl, D. R. (2002). A Revision of Bloom's Taxonomy: An Overview. *Theory Into Practice*, *41*(4), 212–218. doi:10.1207/s15430421tip4104_2

Mazer, J. P., Murphy, R. E., & Simonds, C. J. (2007). I'll See You On “Facebook”: The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education*, *56*(1), 1–17. doi:10.1080/03634520601009710

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press.

Power, K.-A. (2013, January 1). *Professional Learning on Twitter: A content analysis of professional learning conversations among self-organized groups of educators*. University of Windsor, Windsor, Ontario. Retrieved from http://scholar.uwindsor.ca/etd/4900

Schmidt, P. (2011, April 28). Videos “Ripped” From Online-Course Footage Bring Threats to Instructors. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Videos-Ripped-From/127319/

Schon, D. A. (1990). *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (New Ed edition.). San Francisco: John Wiley & Sons.

Schrodt, P. (2013). Content Relevance and Students' Comfort with Disclosure as Moderators of Instructor Disclosures and Credibility in the College Classroom. *Communication Education*, *62*(4), 352–375. doi:10.1080/03634523.2013.807348

Shontell, A. (2014, May 28). *SNAPCHAT CEO: “My Emails Don”t Reflect My Views Towards Women’ - Business Insider*. Retrieved June 4, 2014, from http://www.businessinsider.com/snapchat-ceo-my-emails-dont-reflect-my-view-towards-women-2014-5

Sikes, P., & Piper, H. (2010). Ethical research, academic freedom and the role of ethics committees and review procedures in educational research. *International Journal of Research & Method in Education*, *33*(3), 205–213. doi:10.1080/1743727X.2010.511838

Thrun, S. (2012a). *Intro to Statistics - Udacity*. Retrieved June 4, 2014, from https://www.udacity.com/course/st101

Thrun, S. (2012b). Udacity Blog: Sebastian Thrun: Statistics 101 will be majorly updated. Retrieved from http://blog.udacity.com/2012/09/sebastian-thrun-statistics-101-will-be.html

Von Krogh, G. (2000). *Enabling knowledge creation: how to unlock the mystery of tacit knowledge and release the power of innovation*. Oxford ; New York: Oxford University Press.

Zimmer, M. (2010). "But the data is already public": on the ethics of research in Facebook. *Ethics and Information Technology*, *12*(4), 313–325. doi:10.1007/s10676-010-9227-5