Social Paper: Retooling Student Consciousness

Erin Glass
The CUNY Graduate Center

Abstract

Among the many emerging forms of digital scholarship, "Networked Participatory Scholarship" (NPS) is garnering increased attention for its potential to liberate scholarly communications from the slow, closed, and expensive methods of the pre-digital era. This paper will argue that different forms of NPS contribute to different forms of student consciousness, or how students conceive of the role of their scholarship, and the means of producing and communicating that scholarship in both the academic and public sphere.

Erin Glass is a Digital Fellow and English PhD student at The CUNY Graduate Center. Her research explores the politics, practice and history of collaborative research and pedagogy with an emphasis on networked writing environments. As a Fellow, she helps develop and facilitate online collaborative spaces for students and scholars using Free ("libre") software. Email: erin.glass @gmail.com

Glass, Erin. (2015). Social Paper: Retooling Student Consciousness. *Scholarly and Research Communication, 6*(4): 0401221, 10 pp.

Introduction

Among the many emerging forms of digital scholarship, Networked Participatory Scholarship (NPS) is garnering increased attention for its potential to liberate scholarly communications from the comparatively slow, closed, and expensive methods of the pre-digital era. George Veletsianos and Royce Kimmons (2012) use NPS to describe the "emergent practice of scholars' use of participatory technologies and online social networks to share, reflect upon, critique, improve, validate, and further their scholarship" (p. 768). Examples of this practice include both the appropriation of popular social media or networked sites, such as Twitter, Google Docs, Facebook, and WordPress, for scholarly objectives as well as the use of sites and services that cater specifically to an academic audience, such as Academia.edu; Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC); MediaCommons; or the MLA Commons. By taking advantage of participatory technologies, scholars are better positioned to collaborate, build academic community, solicit feedback, and develop public relevance for their work without having to rely on a publishing industry that is neither equipped nor mandated to host this rapidly expanding conversation.

The influence of NPS upon higher education and the university student experience is palpable as well, stimulating an ongoing flow of research that suggests its numerous benefits to the academic engagement of students. First, however, it is important to note that educators have emphasized the importance of peer audience and feedback prior to the digital era. In *Rhetoric and Reality: Writing Instruction in American Colleges, 1900 - 1985*, James Berlin (1987) observes that peer editing played an important part in "subjectivist" theories of writing instruction as early as the 1920s (p. 14). More well known, perhaps, is Peter Elbow's 1973 classic work in composition studies, *Writing Without Teachers*, which argues that feedback from a group of seven to twelve peers over a series of months is more useful to a student than feedback from a teacher (p. 77). However, new communication tools have refocused the attention of writing instructors on the potential of peer-facing scholarship in the classroom, resulting in a renaissance, if not an entirely new evolutionary phase, of peer-to-peer-oriented pedagogy. Educators across disciplines report that peer-facing, networked writing results "in students writing more and writing better," facilitates "thinking by writing," engages "support from a relevant community," enhances "critical thinking and problem-solving skills," and helps students build "a broader range of skills pertinent to academic research" (Chong, 2010, p. 800). Finally, it is also notable – although less researched – that many students engage in a form of NPS entirely on their own initiative, through activities as informal as posting research-related questions on personal social media sites to more formalized endeavours, such as tweeting one's dissertation process.

In this article, I assume the benefits of integrating NPS in higher and graduate education are clear, based not only on the aforementioned research but on the fact that, as Johanna Drucker (2013) states, we are in a "world whose fundamental medium is digital," and that education therefore must strive to equip students with the skills to participate, critique, and – ideally – contribute to the shaping of this emerging medium. Through the creative, risky, and time-consuming explorations of emerging digital tools, pioneering educators have made great advances in demonstrating the pedagogical use and possibility of NPS. However, these individually directed experiments not only often

lack institutional support and long-term infrastructural vision, they are typically at the mercy of commercially driven tools whose guiding principles are not adequately sensitive to scholarly values and whose continued availability is uncertain. And so, despite the many advances in theorizing and practicing NPS within higher and graduate education, we have yet to adequately address critical issues regarding sustainability, privacy, control, and ownership. Furthermore, though work such as Kathleen Fitzpatrick's (2011) text *Planned Obsolescence* and the development of the MLA Commons represent important steps for theorizing and developing infrastructure for NPS at the level of professional scholarship, further steps need to be taken to build a sustainable, far-reaching vision of student scholarship in the digital age. Additionally, too little attention has been given to the various interfaces and architectures of NPS software, resulting in a discourse that fails to consider the subtle, yet consequential differences, of various networked online writing spaces. A serious consideration of NPS technologies needs to account for the ways different platform features – such as mobile accessibility, email notifications, or ease of use – can dramatically influence the ways in which students produce scholarship and interact with one another.

This article will argue that different forms of NPS contribute to different forms of student consciousness, by which I mean how students conceive of the role of their scholarship, and the means of producing and communicating that scholarship in both the academic and public sphere. Though NPS has been a prominent contributor to transforming traditional forms of scholarship in both a professional and classroom setting, writing and peer engagement remain core activities of scholarship. And so, despite the many possibilities NPS offers, I will focus on NPS as means for students to develop three critical aspects of their academic identity: scholarly writing, peer collaboration, and public engagement. In the first section of this article I will compare four frequently used NPS tools – Blackboard, Twitter, Google Docs, and WordPress – in order to demonstrate how features of already existent networks hinder and encourage these aspects of scholarly development. The second section of this article will introduce Social Paper, a free and open source software tool in development at The Graduate Center at the City University of New York (CUNY) that builds on the positive aspects of the aforementioned tools and addresses their limitations with the implementation of new features. By giving students the means to share, socialize, and review their writing on their own terms, Social Paper aims to support student scholarship as a vital force in the public sphere.

Evaluating forms of NPS

As the definition provided by Veletsianos and Kimmons (2012) makes clear, NPS describes any form of scholarly engagement with online social networks without distinguishing between the wide variety of forms that NPS can take. Thus, classroom use of Blackboard, Twitter, Google Docs, and WordPress can all be described as NPS, though each offers a radically different type of network experience and thus, scholarly production. My aim here is to demonstrate how these particular network dynamics create different types of user activity. Here I will suggest a means of analyzing networks based on three characteristics. First, at a micro level, what are the prominent network dynamics, i.e., the communication mechanisms, user allowances, and interface designs, that privilege or dictate certain types of user activity? Second, because the value of a

Glass, Erin. (2015). Social Paper: Retooling Student Consciousness. *Scholarly and Research Communication, 6*(4): 0401221, 10 pp.

3

network increases in proportion to the number of members, at a macro level, what is the scope of the network with which those communication mechanisms directly engage? Third, how open is the network – to what extent can users promote their content to users outside of the network?

In order to understand the range of possibilities, I will provide an overview of the four aforementioned NPS tools, beginning with Blackboard, the most restrictive network by all three characteristics, and perhaps the most widely critiqued by students and educators alike (Hensley-Clancy, 2014). In a blog post outlining reasons for developing free software alternatives to Blackboard, Boone Gorges (2011) describes it as an "extremely unpleasant" tool that executes its applications "poorly," "forces, and reinforces, an entirely teacher-centric pedagogical model," and furthermore, stores student content in proprietary formats with no easy export features. Additionally, Blackboard is so notorious for losing student's work that some student tech service centers recommend composing in a word processor before submitting (St. Louis University, 1818-2015). As education writer Audrey Watters (2014a) has commented, "I can think of no other company in education … that elicits as much hatred as Blackboard. Almost across the board: from students, from teachers, from administrators." Besides the fact that its clunky design can be interpreted as a lack of care for the time and labour of its users, the problem with Blackboard is that it is simply out of touch with the evolving needs and values of student scholarship, perhaps stemming from the fact that those who purchase Blackboard university contracts are not those who are required to use it. On a micro level, one can describe Blackboard's communication mechanisms as designed for the "management" and "evaluation" of students rather than for student-directed intellectual growth. User activity is generated almost completely by teacher assignments, with little possibility or incentive for self-initiated NPS, spontaneous collaboration, or discovery. On a macro level, a user's network is highly restrictive, limited to students that are taking the same class with few options to expand one's network, personalize one's connections, or make use of one's network past the time of the course. Finally, Blackboard is a closed Web environment, with little to no options for making content produced within the network publicly available. And so, while Blackboard is indeed "networked," and "participatory," the architecture of Blackboard's network does little to encourage, and in fact typically frustrates or prohibits, the three objectives of NPS outlined earlier. Lastly, while many NPS tools are entirely free, Blackboard is expensive. Though contracts vary per institution, the 2010 to 2016 licensing and hosting contracts for The City University of New York cumulatively totaled almost $14 million dollars (Open Book New York— Office of the State Comptroller, n.d.).

Platforms such as Google Docs, Twitter, and Wordpress and the networks they enable offer many improvements to the rigid system described above; all are open, peer centric, user-friendly (comparatively), and enable users to engage with exponentially larger networks. To start, Twitter excels where Blackboard is most restricted. According to its "About" page, Twitter is principally focused on enabling users to "connect," "discover," and "express" (Twitter, 2015). The activities describe the way users are able to freely choose members of their network (by "following"), browse content outside of their network through searches, hashtags, or other means, and finally, freely determine when

and what they tweet about. Unlike Blackboard's design mechanisms, which encourage interaction only between peers that are currently enrolled in the same class, Twitter makes user interest the driving factor of a user's network and activity. Twitter's communication mechanisms (such as the hashtag) and architecture (such as the Twitter feed) work to constantly expose user-produced content to larger, more diffuse audiences that could neither be predicted by the user nor by Twitter developers. This enables users to "discover" and "connect" to new users and topics of interest not only outside of their already established network but outside of direct conversations with users from within their network. Unlike Blackboard, and even unlike other open platforms such as Google Docs, Twitter facilitates a form of "opportunistic communication," which works more like fishing (and seeing what bites) than personal, targeted user-to-user communication. These features make Twitter a powerful communication tool within the academic field, enabling otherwise unlikely connections, discussions, and collaborations among scholars (Gulliver, 2012). However, despite these successes, Twitter itself can hardly be described as an ideal tool for NPS. While Twitter is extremely successful in enabling scholars to practice peer and public engagement, its content – described by co-founder Jack Dorsey as "short [bursts] of inconsequential information" (Sarno, 2009) – remains a tool much better at drawing attention *to* long-form scholarship rather than producing scholarship itself. For starters, the basic unit of Twitter content – the tweet – is highly constrained. In addition to being limited to 140 characters, the tweet is necessarily authored by a single user in a single instance, with no option for further editing and little thought for future retrieval. Finally, the tweet loses most of its original value when consumed outside of the network. Its value is predicated by and large through its existence within the network, which facilitates its exposure by feeding it into users' Twitter streams and enabling users to retweet or reply.

Whereas Twitter is designed to maximize the communication of highly restricted, short-form messages, Google Docs, part of the free Web-based office suite offered by Google, bundles cloud computing and collaborative features within the traditional word-processing experience. On Twitter, one is limited to composing a tweet that has no antecedent in scholarly forms. Conversely, Google Docs enables the production of all sorts of documents, both collaboratively and individually, and of undetermined length, whose intended consumption is not only often outside of the Google Docs network, but is also facilitated by the platform's easy and flexible export features. Furthermore, unlike the ephemeral nature of a tweet, Google Documents are designed to be easily retrievable, copied, shared, revised, made public or private, and automatically saved. In a classroom setting, these features enable a student (if sustained) to have long-term, easy access to their writing across courses and semesters, which could encourage students to view writing as part of an ongoing intellectual development rather than a mere evaluative task. However, all this is not to say that Google Docs is simply a better tool for NPS than Twitter. Though Google Docs enables users to produce traditional forms of scholarship, such as the term paper, with the added benefit of peer collaboration, Google Docs's network dynamics do not surface user activity beyond the network specified for each document. Thus, unlike Twitter, Google Docs gives little opportunity to grow one's network among a like-minded community, preserve those connections across documents, or effectively present one's work to the public.

Glass, Erin. (2015). Social Paper: Retooling Student Consciousness. *Scholarly and Research Communication,* *6*(4): 0401221, 10 pp.

5

Before offering an overview of WordPress, I want to make two quick observations that might be applied to any form of proprietary software, but have particular resonance with Google services. First, as educators have noted, though Google Docs might be very useful today, there is no guarantee that Google will continue to offer the service (Google Reader, for example, was closed in 2013), meaning that one might think twice about using it to organize a massive, long-term NPS effort (Kraus, 2013). Second, though Google is technically free to use, its services are exchanged for permission to surveil and mine all data generated through its platform. While corporate surveillance and data mining may not (as of yet) directly affect the typical user, it is startling to observe the complacency with which many educators embrace commercial tools with neither criticism nor recognition of this subtle cost. Whereas educators have a unique opportunity and responsibility to critique the exploitative forms of today's most powerful communication tools, we have instead, by and large, surrendered our conversation to them. Commentators such as Audrey Watters and Alan Liu have noted the current failure of educators to address pressing questions regarding the university's relationship with technology. Audrey Watters (2014b) writes, "Education technology has become about control, surveillance, and data extraction," and Alan Liu (2013) writes,

> How the digital humanities advances, channels, or resists today's great postindustrial, neoliberal, corporate, and global flows of information-cum-capital is thus a question rarely heard in the digital humanities associations, conferences, journals, and projects with which I am familiar. Not even the clichéd forms of such issues—for example, 'the digital divide,' 'surveillance' 'privacy,' 'copyright,' and so on—get much play. (n.p.)

Therefore, teaching "new literacies" for the twenty-first century should involve not just teaching technological know-how of new forms of communication, but stimulating a critical praxis that seeks to understand and respond to the social and political stakes of these forms.

In many ways, freely available blogging platforms such as WordPress offer a middle ground between the NPS benefits of Twitter and Google Docs. Blog posts on WordPress sites allow users to write and revise posts of undetermined length and the platform itself, through features such as newsletters, automatic social media posting, and RSS feeds, enables students and educators to experiment with public-facing pedagogy. Users can set up WordPress blogs through its hosted service on WordPress.com or by downloading WordPress's open-source blogging software and hosting it themselves. Though WordPress.com is a fast and easy way to start a blog, WordPress.org's open-source software enables users to customize their WordPress blog far beyond the bounds of a traditional blogging site. Furthermore, the open source status of its software has enabled WordPress to cultivate a robust developer community that is constantly adding new, freely available features in the form of "plug-ins" that transform blogs into sophisticated Web spaces such as e-commerce sites, media archives, and social networks. For these reasons, the Graduate Center at CUNY was able to use WordPress and other plug-ins, such as "BuddyPress," to develop the CUNY Academic Commons (hereafter the Commons), a networked commons space tailored to its specific institutional needs. Developed by academics for academics, the

Commons has a robust set of features that enables students and faculty not only to create WordPress websites for any academic use, but also create member profiles and groups, exchange files, and engage directly with other members through direct messaging, mentions, and "friendships." This set of features has been particularly useful for creating networked course websites, which, unlike course blog sites hosted outside of university networks, connects online class activity among the larger academic community. Additionally, the Commons enables students to keep track of all their course sites in one place over the duration of their education, making it easy for them to revisit discussions and syllabi from prior courses, as well as preserve and grow the personal connections they make with students and faculty from each course. And unlike Twitter, Google, and Blackboard, the Commons is hosted by university servers, meaning that student generated data is not exposed to corporate surveillance.

However, while the Commons represents an enormous advance in institution-based, scholarly directed NPS, the course blog format continues to impose critical limitations on the development of student writing and peer engagement, and furthermore, fails to provide an adequate means of sharing longer-form writing such as the term paper or journal submission. First, course blogs silo and scatter student writing across individual course websites, prohibiting students from building a unified, cohesive, and easily accessible portfolio of their graduate student writing. Thus, blog posts and comments on other students' posts are written, practically speaking, in an ephemeral environment, leaving little incentive for students to engage as earnestly as they might in more permanent environments where reputation rewards might accumulated. Additionally, the architecture of course blogs does not emphasize the importance (and right) for students to control how public or private every individual written post is; instead course blogs are either made entirely private or entirely public with the option for students to password protect individual posts. Though these options point to the general significance of privacy, they do not adequately address the sensitivities and opportunities of peer-facing scholarship. Private blogs frustrate the student's ability to practice public-facing scholarship right off the bat, while public- or peer-facing blogs may not offer a safe enough space for beginning scholars to develop writing skills, confidence, and trusting relationships with other peers. Because intellectual work benefits from different levels of privacy and publicity at various stages, technical infrastructure for student-centred NPS should enable students to decide permissions for every individual piece of written work, thereby enabling them to practice public engagement at their own pace and interest. While password systems enable students to make posts private on a case-by-case basis, they are a clunky and unsustainable solution for building a long-term, easily managed writing portfolio. Passwords must be communicated separately to others, are easy to forget (especially if one uses multiple passwords throughout their student career), and do not capitalize on the benefits of streamlined permissions settings (and their correspondent notifications) that are standard to other communication platforms such as Google or Facebook.

Another shortcoming of the blog for classroom use is that its format is not ideally suited to longer-form writing – such as the term paper – demonstrated by the fact that students who wish or are instructed to share term papers will still email text

Glass, Erin. (2015). Social Paper: Retooling Student Consciousness. *Scholarly and Research Communication,* 6(4): 0401221, 10 pp.

7

documents or upload them to shared group folders. While these methods technically allow for the exchange of writing, this very direct, proactive form of sharing deprives the term paper of the full range of social functionalities of the Commons. Thus, the term paper – arguably one of the most important forms of graduate education – completely misses out on the casual, indirect forms of sharing that encourages vibrant group discussion, community building, and unexpected encounters. And while peer commentary is technically possible within the shared text file, it is so technically unwieldy to facilitate group discussion around an emailed file that it hardly ever happens. Furthermore, neither the course blog nor the shared text file use social activity feeds to incentivize commentary or peer engagement. While social media and collaborative platforms such as Twitter, Facebook, and Github broadcast user activity that responds to or engages with another user's activity widely – or at least make it easy to find – the communication mechanisms of blogs and text files leave peer feedback mostly hidden. This lack of technical infrastructure for promoting peer feedback misses the point that evaluating – not just producing – intellectual work is one of the core activities of the academic profession.

Social paper

The above observations led two graduate students, Jennifer Stoops and myself, to conceive of Social Paper (SP), a new NPS tool with a specific emphasis on writing, to be developed as a plug-in for the Commons. The recipient of a 2014 National Endowment for the Humanities Digital Start-Up Grant, SP springs from the ethos that NPS tools should be designed to cater specifically to scholarly values. The tool itself will attempt to remedy the limitations of the aforementioned networks by providing a centralized space for each student to compose, socialize, and archive not only their writing, but also comments, both received and given.

Of first importance to SP is the facilitation of student "ownership" of the ongoing production of their academic writing. By "ownership," I mean that students should have the security of knowing their data is not exposed to corporate data mining. Furthermore, writing should also be easily exportable into file formats necessary for submission to journals or conferences instead of locked into proprietary formats that make data unnecessarily time-consuming and difficult to export. Finally, students should have a centralized way of managing their writing. Instead of sharing or hosting writing on a variety of different networks, course blogs, and file formats – all with various levels of access, permissions, and social functionality – SP will enable graduate students to store all writing (from weekly course responses to final term papers) on their own personal site. Thus, SP users will be able to easily browse through their evolving portfolio of writing and feedback all in one place, as well as browse through the contents of shared portfolios of their peers. In this way, students will have the ability to build an audience for their work across classes, disciplines, and semesters. Additionally, the concept of ownership will be applied not only to papers and posts, but to comments as well, so that students can easily keep track of and showcase peer reviews within their portfolio, in the hopes of legitimizing the invaluable labor of student peer review as meaningful and integral to the intellectual and social development of students. To facilitate this type of student ownership, course blogs will be replaced by course categories, allowing students to easily associate written pieces with a class while keeping

it within the domain of their own portfolio for easy retrieval and social management. Such advanced control over the terms of sharing their work will enable students to specify the desired degree of publicity for each individual instance of writing, whether it is only with a class, specific members of the network, or the public at large.

In addition to permissions, which protect one's writing from undesired levels of exposure, SP will also facilitate the "socialization" of student writing in a variety of ways in order to help students make new connections, collaborate with peers, and build out a public face for one's work. First, SP will enable paragraph-level commenting that includes the ability to "mention" other users (which will notify the user that their attention is requested) or "tag" topics. Second, these comments, along with other forms of user activity (such as posting a paper) will be surfaced within network activity feeds according to that content's level of permissions. Thus, instead of being siloed to an already established network of peers (such as a class), written content can be broadcast into a site-wide activity feed. By continuously surfacing within the network, the work, and interests of its individual members, SP will work to further break open the black box of graduate education to the graduate student community itself. Finally, because commercial social networking sites are important parts of the public sphere, students will also have the opportunity to easily post links to their work and/or comments on Facebook or Twitter, in order to elicit attention and feedback from outside of the SP network.

In conclusion, I hope to have shown that the current tool offerings are insufficient for meeting the objectives of a vital and publically relevant NPS, making necessary the development of a new tool that fits the unique needs of the graduate student community. The proposed solution, SP, is an attempt to build on the proven successes of commercial and free and open source software in order to provide a platform that will make student scholarship more meaningful and productive for students and the public alike. Such a tool, I hope, will not only help students develop skills in traditional forms of scholarship, but will provide a space in which students might expand upon the role and value of student scholarship within the public sphere. While it is not impossible that Blackboard, Google, and Twitter may at some point incorporate features discussed in this article, their proprietary status will continue to prohibit users from modifying the platforms for NPS-specific use. Conversely, SP's open code will enable students and academics alike to participate in shaping communication software and its terms to meet their evolving needs.

Acknowledgements

Websites

Blackboard, http://www.blackboard.com/
Github, https://github.com/
Google Docs, https://www.google.com/docs/about/
Twitter, https://twitter.com/
WordPress, https://wordpress.com/

Glass, Erin. (2015). Social Paper: Retooling Student Consciousness. *Scholarly and Research Communication, 6*(4): 0401221, 10 pp.

9

References

Berlin, James. (1987). *Rhetoric and reality: Writing instruction in American colleges, 1900–1985*. Carbondale, IL: Southern Illinois University Press.

Chong, Eddy K.M. (2010). Using blogging to enhance the initiation of students into academic research. *Computers & Education, 55*(2), 798-807.

Drucker, Johanna. (2013). Humanistic theory and digital scholarship. *Debates in the Digital Humanities Open Access Edition*. URL: http://dhdebates.gc.cuny.edu/debates/text/34 [December 18, 2014].

Elbow, Peter. (1998). *Writing without teachers*. New York, NY: Oxford University Press.

Fitzpatrick, Kathleen. (2011). *Planned obsolescence: Publishing, technology, and the future of the academy*. New York, NY: New York University Press.

Gorges, Boone. (2011). I develop free software because of CUNY and blackboard. *Teleogistic*. URL: http://teleogistic.net/2011/09/i-develop-free-software-because-of-cuny-and-blackboard [December 18, 2014].

Gulliver, Katrina. (2012). 10 commandments of Twitter for academics. *The Chronicle of Higher Education*. URL: http://chronicle.com/article/10-Commandments-of-Twitter-for/131813 [December 18, 2014].

Hensley-Clancy, Molly. (2014). Blackboard's boss wants you to hate his company less. *BuzzFeed*. URL: http://www.buzzfeed.com/mollyhensleyclancy/blackboards-boss-wants-you-to-hate-his-software-less [December 19, 2014].

Kraus, Steven D. (2013). Discussing JS Dunn, Carrie Luke, and David Nassar, "Valuing the resources of infrastructure." *English 516 Computers and Writing Theory and Practice*. URL: http://engl516.stevendkrause.com/2013/04/03/discussing-js-dunn-carrie-luke-and-david-nassar-valuing-the-resources-of-infrastructure [December 19, 2014].

Liu, Alan. (2013). Where is cultural criticism in the digital humanities? *Debates in the Digital Humanities Open Access Edition*. URL: http://dhdebates.gc.cuny.edu/debates/text/20 [December 18, 2014].

Open Book New York—Office of the State Comptroller. (n.d.). *NMP0141*. URL: http://wwe2.osc.state.ny.us/transparency/contracts/contracttransactions.cfm?Contract=CNY01-NMP0141-3330221 [June 1, 2015].

Open Book New York—Office of the State Comptroller. (n.d.). *T111602*. URL: http://wwe2.osc.state.ny.us/transparency/contracts/contracttransactions.cfm?Contract=CNY01-NMP0141-3330221 [June 1, 2015].

Sarno, David. (2009). Twitter creator Jack Dorsey illuminates the site's founding document. Part I. *LA Times Blog*. URL: http://latimesblogs.latimes.com/technology/2009/02/twitter-creator.html [December 18, 2014].

St. Louis University. (1818-2015). Student FAQs for Blackboard learn. St. Louis, MO: Tech Service Center, Busch Student Center, St. Louis University. URL: http://www.slu.edu/busch-student-center/student-tech-service-center/academic-tools/blackboard-learn/student-faqs#16 [December 18, 2014].

Twitter. (2015). *About*. URL: https://about.twitter.com [December 17, 2014].

Veletsianos, George, & Royce Kimmons. (2012). Networked participatory scholarship: Emergent techno-cultural pressures toward open and digital scholarship in online networks. *Computers & Education, 58*(2), 766-774.

Watters, Audrey. (2014a). Beyond the LMS. *Hack Education*. URL: http://hackeducation.com/2014/09/05/beyond-the-lms-newcastle-university [June 1, 2015].

Watters, Audrey. (2014b). Convivial tools in an age of surveillance. *Hack Education*. URL: http://hackeducation.com/2014/11/13/convivial-tools-in-an-age-of-surveillance [December 19, 2014].