

“Friending” Vygotsky: A Social Constructivist Pedagogy of Knowledge Building Through Classroom Social Media Use

Kalen M. A. Churcher,^{1a} Edward Downs^b, and Doug Tewksbury^a

^a*Niagara University, Niagara, New York 14109*

^b*Minnesota-Duluth, Duluth, Minnesota 55812*

Abstract

Social media and web 2.0 technologies are an attractive supplement to the higher education experience and are embraced as a way to foster intra- and extracurricular knowledge generation among a class community. However, these collaborative media require a re-thinking of the theoretical framework through which we engage student communities of practice. This paper offers a social media-age rethinking of Vygotsky's (1978) conceptualization of social constructivism within learning communities by presenting two case studies of instructor uses of social media platforms through a Facebook community of practice and a wiki-based, student-generated exam. Each examines the pedagogical advantages and disadvantages of incorporating social media in course curricula through the development of social constructivist-based best practices in Web 2.0 course environments.

Keywords: Interactive learning environments, media in education, pedagogical issues, teaching/learning strategies.

The implementation of technology into the classroom presents educators with a myriad of options that were not available as little as a few years ago. While using various technologies to supplement learning is attractive, the use of these tools is not always intuitive. It can be difficult for instructors to maintain best practices of pedagogy while continuously learning and relearning how to incorporate emerging technologies. This has prompted a perpetual lamentation that advances in pedagogy have not kept up with the rapid introduction of new technologies in the classroom (Boling & Robinson, 1999; Notar, Wilson, & Montgomery, 2005). This is likely due to the fact that those routinely employed to implement these technologies are not educators, but more commonly technical consultants and IT staff. Their primary goal is to make the technology function properly and effectively, not necessarily to think of issues such as student learning outcomes or best teaching practices. The remedy to this dilemma is to identify salient features of hardware and software technologies that instructors wish to use, and then use theory to understand how to develop practical pedagogy to maximize the likelihood of successful learning outcomes.

¹ Corresponding author's email: kchurch@niagara.edu

One group of technologies that is increasingly of interest to instructors is social media. Social media are web-based platforms that facilitate collaboration, interaction, and exchange of user-generated content (Surowiecki, 2005). These media fall under the rubric of what O'Reilly (2005) termed "Web 2.0", and are characterized primarily by a shift from viewing the web as a site of information retrieval, to the perspective of the web as a participatory platform. Sites such as Facebook, Twitter, YouTube, FourSquare, and various wiki-style sites are integrated firmly into the personal lives of most students, allowing faculty the opportunity to customize course material to facilitate and accomplish learning expectations and goals (McLoughlin & Lee, 2008).

In terms of usage, social media are indeed popular. A 2010 study conducted by the Pew Research Center revealed 93% of United States teens (ages 12 through 17) and young adults (18 through 29) are online. Of online teens, 73% have used a social networking site (SNS), a figure that has climbed steadily since 2006. Young adults share a similar relationship, with 72% having frequented a social media site (Lenhart, Purcell, Smith, & Zickuhr, 2010). Considering the pivotal role the internet plays in the lives of late-teens and 20-somethings and the cost-effectiveness of these technologies alongside ever-tightening budgets for higher education, it is not surprising online courses have become in demand (Allen & Seaman, 2008; Kim & Bonk, 2006). Nor is it surprising that the use of social media as pedagogical tools should be considered (Palfrey & Gasser, 2008) as colleges and universities strive to maintain "flexible, inclusive, collaborative, authentic, relevant, global and effective" learning environments (Felix, 2005, p. 86).

At the very heart of social media is the ability to generate connections. The community behavior and values that develop in virtual spaces form what Hung and Der-Thanq (2001) term a "community of practice," a communicative forum where an organization can collaborate in order to articulate its common goals and act to achieve them (Guasch, Alvarez, & Espasa, 2010, Lave & Wenger, 1991; Wenger, White, & Smith, 2009). The learning curve associated with various social media does not seem to present overt barriers for the larger body of traditional students and instructors who use them; however, developing a theory of social media use in the classroom in order to maximize student learning outcomes requires further research. Pedagogically speaking, the theory of social constructivism, with its emphasis on groups in the construction of knowledge to promote learning, is a natural pairing for how to use social media.

Social constructivism

A body of literature has developed recently that links social constructivist theory with the use of new media technologies in terms of pedagogical best practices. Some have examined this relationship in the context of web-based and computer-mediated learning environments (Felix, 2005; Hung & Der Thanq, 2001; Pear & Crone-Todd, 2002; Woo & Reeves, 2007), asynchronous distance learning environments (Millard, 2010), virtual learning environments (Guasch et al., 2010), blended learning (Heinze & Procter, 2006), and various social media and networking sites (McLoughlin & Lee, 2007; Romero-Frias & Montano, n.d.).

Russian psychologist Lev Vygotsky, regarded as the father of social constructivism, believed that knowledge was constructed through dialogue and interaction with others (Vygotsky, 1978). He argued that knowledge is co-constructed in a social environment and that in the process of social interaction, people use language as a tool to construct meaning. The use of language between individuals in an environment as an *interpsychological* tool is central to social constructivist thought on the learning process. Successful learning is said to result in an internal dialogue as an *intrapsychological* tool that can be used in the future across varying situations (Marsh & Ketterer, 2005; Vygotsky, 1978). This *scaffolding* can be stored in memory and used by the learner to make sense of his or her environment at a later date.

It is important here to make a distinction between knowledge and learning. According to social constructivist theory, knowledge is co-constructed in the environment (interpsychologically) with others (Vygotsky, 1978). Although learning may occur through collaboration, it is still an internal mechanism within the individual (intrapsychologically). Learning, therefore, occurs at the individual level and is a product of knowledge creation through collaboration, whereas knowledge is co-created in the environment. Internalization of information is regarded then as both an individual and social process (John-Steiner & Mahn, 1996).

As members of a community negotiate meaning, they not only impact the intrapsychological processes, but impact the interpsychological group processes (Chang-Wells & Wells, 1993; John-Steiner & Mahn, 1996). Vygotsky proposed that individual-level learning occurs within the *zone of proximal development* (ZPD) or the area in which intellectual development is still in progress (Marsh & Ketterer, 2005). The ZPD may be defined as “the functions that have not yet been learned – they are the “buds” of development, not the “fruits” of development” (Marsh & Ketterer, 2005: 2; Vygotsky, 1978: 87). These “fruits” refer to already learned knowledge that exists in the *zone of actual development* (ZAD). From Vygotsky’s standpoint, learning may be defined as an expansion of the ZPD into the ZAD.

The ability to learn through dialogue and interaction with others is central to knowledge generation. The benefit of using social media such as Facebook or wikis is that these technologies connect with students where they spend much of their time, thus creating virtual communities of practice and a virtual public sphere for discussion (Lave & Wenger, 1991; Wenger, White, & Smith, 2009). Since each student brings a unique set of experiences to the classroom, the participatory nature of social media allows them the opportunity to take ownership of their scholarship by becoming active in the knowledge-creation process.

For those used to a more traditional classroom, this may be quite a change. When using social media, the role of the instructor is not solely to disseminate information, but rather to moderate the trajectory of user-generated content and community knowledge-sharing (Wenger, White, & Smith, 2009). Although sites such as Facebook or wikis may be familiar to student users who use these technologies in their day-to-day lives, students’ conceptual transformation of these sites from social media to pedagogical agent may be

unclear. Just as the classroom needs its teacher, social media spaces require a skilled moderator for effective learning to occur during the collaborative knowledge creation process (Lazonder, Wilhelm, & Ootes, 2003). With a mediator to keep discussion on track, the community of practice takes a sense of ownership over its own knowledge, while at the same time working within the framework of the instructor's course objectives. In a sense, the endpoint may be the same, but the different approach to generating knowledge can benefit the student learning community in ways beyond simply achieving course objectives. Student response and interest in specific topics allow for more in-depth coverage of select areas of coursework beyond those originally slated for discussion. Ultimately, course learning objectives are not only met (through scheduled course plans), but exceeded based on the discussion direction taken by students and consensus.

Yet, the question of the students' relationship to technology is central to developing best pedagogical practices. Traditional students, the so-called "Digital Natives" born after 1980 (Palfrey & Gasser, 2008, p. 1), are the first generation that has never known a world without the internet. The generation's youngest understand the internet as a mobile phenomenon (Gabriel, 2011). If the social and cultural identity of Digital Natives is constructed through these media, then it is important that instructors carefully leverage the possibilities of these technologies for collaborative knowledge building in tandem with the benefits of traditional classroom instruction.

Methodology

To explore the possibilities of Web 2.0 in forming more relatable and accessible learning environments from which information can be processed into knowledge structures, the authors offer two case studies – one using Facebook, the other using a wiki platform – that illustrate the implementation of social media into traditional-style classrooms to develop communities of practice. Although the specificity involved in the case study method has been debated (Flyvbjerg, 2006; Hamel, Dufour, & Fortin, 1993; Yin, 1993, 1994), contemporary proponents argue the method provides the contextual knowledge for individuals to acclimate themselves to an entire issue or situation instead of having to rely on personal, preexisting knowledge (Flyvbjerg, 2006). Furthermore, in certain disciplines, the case study method appears to flourish as it "strives to highlight the features or attributes of social life" (Hamel et al., 1993, p 2). The field of education is no exception, with the case study method used to address, among other topics, asynchronous learning in mediated environments (Hawkey, 2003; Martini & Cinque, 2011).

Yin's (1994) definition best defines the spirit in which the following case studies were written. He defines the case study method as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident," (Yin, 1994, p. 13). Much like Martini and Cinque (2011) explore the role of *Ning* (a platform for creating community websites) in their case study analysis, this article uses two primary case studies to illustrate the implementation of social technologies into the classroom. Real-life context is supported by the fact that no additional hardware technologies were needed other than computers, which students have access to either in residences or in campus labs and are

required to use daily in other courses. With regard to the social media technology (Facebook) used in Case #1, all participating students already had a viable, active account and utilized it regularly. Conversely, a training session was held for students in Case #2, as most had not previously used wiki technology in a participatory collegiate environment.

The objects of study, as defined by Hamel et al. (1993) in Case Study #1 and Case Study #2, are the reactions and outcomes of using Facebook and wikis in the respective classrooms. However, the fields in which these objects, or more precisely, these processes, are studied are equally important, providing necessary contextual information. Thus, the case studies are written to be explanatory as well as descriptive (Yin, 1994).

When drawing conclusions about the success of the social media usage in the following case study classrooms, care was taken to employ a sense of objectivity, particularly because two of the authors were directly involved with teaching the courses. Survey results and responses from open-ended questions allowed data to be triangulated (Maxwell, 2005; Yin, 1993, 1994) thereby strengthening the validity of the conclusions and applicable theoretical connections. In addition, the authors took care to examine critically social media use in order to better improve their personal pedagogical techniques. Students also offered critiques in response to the open-ended questions posed to them. A sampling of those critiques accompanies each case study.

Case Study #1: Facebook as a Collaborative, Student-driven Platform

Media Literacy is a freshman-level communication studies course of 36 students. The roster pulls from numerous majors at varying levels in the university. This is an asset to the course, particularly as students learn to critically analyze media and deconstruct media messages. Students typically are interested in the material presented, yet they become frustrated and disengaged when discussions must be paused repeatedly to explain major-specific material or kept at an elementary level. Likewise, time constraints permit only a small percentage of students to contribute to course discussions.

Objectives and goals

To encourage continued student discussion, the professor for the course in Case Study #1 created a Facebook page. The students were required to respond via Facebook to specific questions posed during the traditional class period. The professor then asked students to engage in a virtual discussion intended to clarify more advanced comments in a non-threatening, time-unrestricted environment. To further encourage active participation in the course, the professor also asked students periodically to post examples that best represented key concepts and terms. Students were graded on their Facebook participation via a similar rubric to traditional class participation.

Unlike some courses that are taught exclusively online, this particular course was a hybrid of traditional and online components designed to achieve the following goals:

- G1. Increased participation among students.

- G2. Ownership in not only course content, but also course design and structure.
- G3. A shared learning experience where students were encouraged to learn from one another and about one another, the latter serving to increase the diversity of viewpoints.

The professor did not inform the students of the specific goals intended to be met through the use of Facebook. At the conclusion of the course, 30 of the 36 students completed a 29-question survey that spoke to the aforementioned objectives.

Facebook as a community space.

Created in 2004, Facebook reports more than 500 million active users, with approximately half logging on daily (Facebook, 2010). Considering 71% of 18- to 29-year-old SNS users use Facebook (Lenhart et al., 2010), it was not surprising that every student in this particular section of Media Literacy had a Facebook account. Admittedly, the popularity of Facebook played a major role in choosing it for course usage. There was an expectation that students would be familiar with it and could navigate it with ease, thus eliminating a potential learning curve. In the truest sense of social constructivism, students would, as a group, construct the knowledge that was to be processed individually. The Facebook page served simply as the venue for social interaction.

That students were familiar with Facebook did not make its transition from social medium to pedagogical tool any easier. Some were reluctant for their social and academic lives to cross paths;ⁱ others questioned how the site could benefit their education. In an effort to allay concerns and offer students a more participatory role in course logistics, students, with the professor serving as facilitator, collectively created rules applicable to their work on the Facebook page. This process was a learning experience for both students and professor. An immediate concern involved language, grammar and punctuation use on Facebook. Although the professor favored Standard English rules, students quickly countered that the ‘point’ of Facebook was for quick message transmission. The discussion ended with a partial fulfillment of G2, and a list of nine class rules for Facebook use, one of which was:

While abbreviations, emoticons, etc. are OK to use on the Facebook page, they are NOT OK to use in class assignments, papers and exams. In anything other than Facebook, I (the professor) expect good grammar, spelling, word use and punctuation.

This process further enforced the idea of community-based learning as students essentially became teachers when they reminded the professor that community norms and social etiquette of Facebook allow for – and indirectly encourage – the use of informal vernacular.

Implementation and results

Learning as a collaborative activity.

Students ($n = 30$) who participated in the survey at the semester’s end acknowledged the intended shared learning experience, but most readily noted their increase in awareness of classmates’ opinions. Fourteen students believed they had learned more from the class because of their participation with Facebook, while 10 were unsure. When asked about their knowledge of other students’ beliefs, 27 believed they learned more about other’s opinions, while three did not believe that knowledge had increased because of Facebook. Students also responded to open-ended questions regarding Facebook and learning levels. The following represent some of the responses:

- It was quick and made me think about certain media. I saw how different people interpreted different messages.
- It helps me to see other’s opinions...a lot of people in the class do not interact with one another (in class).
- It allow[ed] me to see my classmates’ views on controversial topics. People posted things of all kinds, such as a wide range.[sic] I loved being able to post something I’d seen in my day.

Students’ uncertainty regarding the potential to generate knowledge through Facebook was not surprising, as only one of the 30 students reported taking a class that used SNS with regularity.ⁱⁱ Students had to decide for themselves if they believed a potential existed to gain knowledge from a technology that had previously been relevant only for socialization purposes. Even with instructor guidance, not all students embraced the process, though few elaborated on their reasoning.

- I read some of what people wrote, but I usually became distracted by looking at other things.
- Didn’t like it. Seemed like a waste of time.

A shared learning environment (G3) was achieved with the course Facebook page not serving merely as a discursive space, but as a mechanism for allowing students to operate within their own zones of proximal development (Cole, 1985; Vygotsky, 1978). In addition to course discussion being richer and analysis deeper than what was presented in the text, students were able to apply their understanding of the information to their Facebook posts. If a student posted an incorrect or incomplete example, more advanced students were able to correct, clarify, or add to the statements via responses directly underneath. Of course, the professor had to monitor the site to ensure the correct information was being conveyed. If a discussion point became particularly confusing, the professor entered the conversation to provide the appropriate information.

Student involvement in course logistics, particularly as it pertained to Facebook usage and implementation, decreased the potential disconnect between professor and students and distinguished the different protocols between Facebook and non-Facebook assign-

ments. Guidelines established by the initial students served as a template for future students to change, modify and/or accept. They also acted as a starting point for discussion between students and professor. In addition, Facebook postings and comments provided students with more explicit ownership of the examples used, and topics discussed, in class.

Increased participation.

The Media Literacy course had six objectives with an overarching theme encouraging critical thinking. Three of those objectives included being able to:

- Recognize and discuss the importance of critically analyzing media;
- Identify how mass media have shaped, reinforced, and/or challenged personal perceptions of society and its inhabitants; and
- Articulate arguments (and counter arguments) regarding the need for media literacy and critical analysis of media.

Because critical analysis and articulation were key factors to successful completion of the course, students had multiple opportunities to practice those skills in order to fulfill successfully G1. Course readings, homework and semester projects helped sharpen those competencies but still provided limited settings and practical opportunities for students to use their newfound knowledge. The very nature of Facebook encourages brief discursive exchanges among participants, thereby forcing students to articulate their thoughts clearly and concisely. Because of its popularity, Facebook provided a familiar alternate space for sharing opinions.

Students were asked also to report their overall participation in the course. Fourteen believed they participated more in the course overall; 11 were unsure of their participation; and five felt they did not participate more. A majority of students (26) admitted to lurking on the course Facebook page, reading comments and exploring links, but not personally posting. Students also were asked to gauge their comfort level in sharing (potentially) controversial ideas in a classroom. Twenty students described themselves as very comfortable; three felt nervous; two each did not participate because they did not feel intelligent enough or felt as if others would think negatively of them if they showed disagreement; and five did not participate because they felt others would get angry with their responses. In open-ended questions, students shared the following:

- I think many students use Facebook and it (is) convenient for them. It's another way for students to get involved outside of class, especially those who may be hesitant in the classroom.
- It gives students more (opportunities) to raise their grade. It also relates to students because it's something we all use.
- I feel it was a good way to gain participation for those students that find it difficult to participate in class. I like to express myself in writing better than verbally, so I felt more confident in my Facebook responses.

Even if the Media Literacy students did not have an aversion to participating in class discussions, they recognized that other students might. Confidence gained through online participation seeped into in-class discussions, providing an overall richer learning environment. Students and the professor served as teachers of material, enabling the messages and concepts to be conveyed at various levels, at various times, and in various settings. “Vygotsky proposes the parallel between play and school instruction: both create a ‘zone of proximal development’ … and in both contexts children elaborate socially available skills and knowledge that they will come to internalize,” (Cole, John-Steiner, Schribner, & Souberman, 1978, p. 130). Facebook allowed applicable knowledge to be obtained, debated and retained by students in a non-confrontational atmosphere and then continued in a more formal, traditional, classroom setting.

Case Study II: Wiki-based Collaborative Knowledge Building

Our second case study involves Communicating for Social Justice, a required introductory course for Communication majors at a small, liberal arts school and the establishment of best practices for using a student-driven course wiki. The class, mostly first- and second-year students, utilized several evaluative strategies, including both synchronous and asynchronous testing, writing activities, journaling, and collaborative production projects through this technology.

The wiki is a web-based technology that allows for what Tapscott and Williams (2006, p. 7) call “peer production”. The practice of collaborating in an online setting in order to develop community-based, user-generated content speaks to Vygotsky’s (1978) notion of social construction of knowledge through discourse and dialogue. While most web users are familiar with Wikipedia, the web-based, user-edited encyclopedia, the term ‘wiki’ is commonly used to describe a simplified, web-based architecture that creates a networked discursive community. User-editing of online content is possible through a number of different software platforms, but what separates the wiki is that it uses a web-based, WYSIWYG interface that allows for open and equal access to all participants. Each user has the same level of privileges to create, modify, add to, or delete content from any of the site’s pages, and all previous versions of the page are saved on the site, allowing for users to view and, if desired, to revert to any previous version of the page. In a sense, the wiki-based space of production is a collaborative environment whose content is almost entirely derived from students through the extra-classroom community, within an open-format structure of pragmatic management guidelines developed by the instructor.

Technological possibilities and best practices

One of the challenges in the implementation of new technologies is developing best practices for classroom use. As wikis afford the flexibility of an open platform, they allow for a wide range of applications in course direction and management. The professor experimented with several uses of this technology; however, this case study focused on the application of user-generated content to the creation of course exams as a class community.

Implementation and evaluation

The professor's use of the wiki for class purposes applied the principles of user-generated content or, in a sense, incentivized crowdsourcing (Howe, 2006) to allow students to develop a bank of questions and multiple-choice options for an exam, of which a percentage would be selected for inclusion in the actual evaluative measure. In other words, the students would create their own exam.

Students received detailed instructions: Each exam question submission to the wiki page would consist of the question itself, four or five multiple-choice options, followed by an identification of the correct answer and a few sentences on not only why this answer was correct but also why the other choices were incorrect, along with a page number or lecture reference. There was also a discussion section for each question, where the class community could deliberate over errors or ambiguities in question content or wording, correct misleading answers, revise questions, or provide better alternatives for the multiple-choice options. Students were told it was their responsibility to fact-check and discuss their peers' submissions, and that the instructor would not be involved in the deliberation over right/wrong answers (although in the final selection of questions for inclusion, the instructor would not choose any with incorrect answers, unclear choices, or ambiguous language).

The bank of possible questions was researched, generated, and policed by students, themselves. The class was asked to come to a consensus as a community on how many questions would be on the exam and settled on 40. The professor then asked for at least 80 questions to be submitted into the question bank.

Furthermore, the process of submitting questions was incentivized. Students received extra credit equivalent to one missed question if their submitted questions were selected for inclusion on the exam (in addition to the benefit that the student would hopefully get the question correct on the exam, were it selected). This not only encouraged an increase in quantity of questions submitted but also in terms of quality. The better designed one's question and multiple-choice alternatives, the more likely it would be selected by the instructor.

The professor informed students in advance that several days before the exam, submissions would be closed, and the correct answers and discussion removed from the wiki, leaving only the possible questions and multiple-choice answers. The instructor would mix in several additional questions to fill in the gaps where the goals for student learning outcomes were not addressed, which further required students to study, and also solved the problem of students simply saving the correct answers on their home computers. Creating questions and studying for the exam served as a material-reinforcement tool, and one that was guided by the course objectives set out by both the instructor and by the students themselves.

Evaluating results

An anonymous, voluntary post-test evaluation of the process consisting of qualitative open-ended survey questions was administered after the students had received their scores. In an analysis of the qualitative responses to this survey, of the 24 respondents, 22 responded that their experience with the wiki-based, user-generated exam was positive, with two not responding. Twenty presented comments that this form of developing tests helped them to learn, retain, or reinforce course concepts better than a traditional exam (four not mentioning), and 11 respondents' comments highlighted that their test performance was better or that they were more prepared for this exam than a traditional exam (13 not mentioning). Of the remaining analysis, 8 mentioned that they better internalized comments or didn't just memorize the answers, four mentioned that this approach facilitated collaboration in generating questions or studying with their peer community, and eight mentioned that it was challenging to develop questions and answers.

From the instructor's perspective, the use of collaborative social media-based activities was advantageous and offered a different approach to meeting classroom objectives than traditional testing methods. These media and activities offered several advantages, highlighted here alongside qualitative student comments from post-test surveys.

First, collaborative, student-generated exams encouraged active student learning by granting ownership over course material through social media collaboration, as well as incentivized student participation in the direction of the course. By putting the responsibility of developing the exam in the hands of the students, their investment in the course went beyond the traditional teacher-student power dynamic. Some excerpted comments:

- The more we are involved, the more we want to read and learn, especially for people who need a more hands-on approach.
- Posting the questions prior to the exam gave us more motivation to study because it feels like the exam was primarily in our hands.

Furthermore, having students collaborate to develop their own exam question bank encouraged a careful and guided re-evaluation of course material at exam time rather than simple memorization of assigned text concepts.

- I was able to aptly study and be prepared ... Creating and studying for this exam definitely helped reinforce the concepts because we were constantly looking up the answers to these questions.
- I was forced to go back to the readings and re-read things ... so I got more out of studying for the exam [than in traditional exams].
- It seems to almost mandate student participation in the exam.

This social media-based approach encouraged engagement with course material through the collaborative discourse, dialogue, and deliberation of course concepts, as well as extracurricular exposure to course material. Through discursive interactions, students were learning from each other. The peer-interaction made possible by the wiki allowed stu-

dents to debate, correct and work in a collaborative environment to scaffold information while expanding their zones of proximal development. In constructing potential exam questions and debating possible answers, an online community of peer education developed. When paired with the professor-led classroom instruction to guide students toward key concepts, a dual-approach to learning was established, and based on student responses, was also effective.

- I was able to remember more because even after the exam, I was talking to my peers about what questions they had ... I had to stay on my toes by checking the wiki every day to see if someone posted a new question.
- It was more interactive with students being able to give answers, making them more prone to study ... interaction helps you learn instead of just possible memorization.

Finally, this approach provides an alternative approach to measuring student learning outcomes, and one that takes into account the student perspective (alongside the guidance of the instructor). By putting the responsibility for generating the course exam in students' hands, the reward of points creates an incentive for students to more firmly engage with course material than they might have otherwise.

- I feel like the democratic process involved in creating the exam really facilitates learning. It forces students to work together.
- I felt that no one babied the questions, which was beneficial because the subject matter was challenging. I was forced to go back into the materials that we were assigned ... in writing and studying the questions.
- This reinforced course materials more because it was from the perspective of the students.

The strategies utilized by the professor illustrate how SNS technologies can be paired with theory and transformed into a pedagogical tool. As this case study demonstrates, there are many possibilities that allow students to collaborate, peer-produce, and scaffold course material, and – perhaps most importantly – allow for increased student interaction, ownership, and community building. If students are given broad ownership over the way in which they wish to address course material, it serves as one additional reinforcement strategy, and one that takes the lessons from the classroom into extra-curricular territory by reconceptualizing the traditional separation of students from teachers in the generation of knowledge through the application of social media.

Discussion

If, as Vygotsky (1978: 88) stated, "human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them," then the relevancy of social media such as Facebook and wikis as pedagogical tools is even more apparent. Yet like with any technology, it is important to remember that social media technologies should not be considered to replace traditional guided instruction (whether online or offline), nor are they to be thought of as a cure-all for unsound teach-

ing methodologies. Potential classroom applications of these technologies – so ubiquitous in the non-academic lives of students – are many, but the larger challenge for the development of a pedagogy for social media integration is to encourage research, conversations, and collaboration regarding best practices for classroom use. It also means soliciting student feedback to determine what does and doesn’t work.

We advocate for the continued discussion on how the application of established theories of learning facilitate SNS integration in a variety of contexts in order to help minimize guesswork and enrich student learning. It is important to note that social media integration need not be an all-or-nothing shift: Hybrid courses, such as those presented earlier in the case studies, allow the instructors to retain the ability to include selectively the strongest attributes of both traditional and online pedagogical elements to create an atmosphere that encourages the social construction of knowledge. Of course, it can be somewhat harrowing for the instructor to cede control of one’s classroom in terms of direction, particularly when the burden of generating content becomes decentralized, more “authentic,” and left to the crowd (Davydov, 1995: 13). But granting students the privilege of information gathering comes with the expectation that this opportunity will be used responsibly and that if community standards are violated (either in terms of social decorum or academic veracity), these violations will be remedied by the community itself. In the event of misconduct, the role of the instructor as the mediator of discussion and content would simply need to reassert authority in guiding the community back on track.

Advantages of social media technologies

The lessons learned from the two cases presented in this paper highlight the pedagogical advantages of capitalizing on affordances inherent in social media technologies and pairing them with theory to create virtual communities of practice and generate positive learning outcomes. First, student involvement in course logistics, including the discussion of course concepts and material, immediately created a sense of ownership among students. In the case of Facebook, the deliberation and negotiation process between students and professor as to acceptable Facebook behavior aided in the fulfillment of G2: ownership of course design, content and structure. In addition, the accompanying profile pictures and biographical user information associated Facebook postings, as well as the ‘Getting to Know You’ page on the course wiki, allowed a human touch to be associated in students’ online personae. These humanizing touches allowed students a more direct and long lasting sense of ownership to their words, and allowed the professors to incorporate more identifiable and popular in-class illustrations by culling student examples. In Vygotskian terms, these affordances also facilitated the development of a community of practice.

Secondly, the time and space advantage that social media offer allows instructors to extend the traditional course period beyond the synchronous meeting, allowing students to engage in asynchronous learning at times that are not only convenient to them, but to (potentially) participate more frequently and organically as ideas or questions manifest themselves. With the flexibility of Facebook and wikis in particular, conversations can be

initiated and maintained more easily than similar interactive areas in specialized but hierarchically controlled course management systems such as Blackboard, ANGEL or WebCT. Thus, the implementation of Facebook, wikis, and other social media is not just about the ‘cool’ factor (Palfrey and Gasser, 2008), but about the pedagogical relevancy of these media as active, communal learning spaces.

Third, the social benefits of implementing these media into courses that previously may have been taught using more traditional pedagogical techniques (ex. lecture, discussion, group work, etc.) manifest themselves in the shared experiences, discussions and self-disclosure of the students. Students may learn from one another at their own pace in a potentially less-threatening environment and then process and digest that information on their own. Vygotsky (1978: p. 57) notes that “Every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level.” Thus, an interpersonal learning environment transforms into an intrapersonal one.

Finally, due to the privileged status as grade-giver and evaluator of student work, the instructor retains the free hand to guide student conversations in certain directions while steering away from others. Some courses, particularly where topics may be controversial, lend themselves to the increased discussion environment that these case studies afford. Facebook also has proven to be a successful space for large group discussions and helpful for times when students must come to a consensus on certain material and/or issues prior to class. While we would argue that Facebook should not necessarily take the place (or space) of in-class debates, it does provide an alternate forum so discussions need not conclude at the end of a class period. Similarly, the democratic access of the wiki, along with the open forums for sharing links, web pages, videos, and discussion points, allows students the ability to think about certain course materials outside of the classroom context. Controversy is not always welcome in some settings, but generally speaking, these communities of practice seem to police the boundaries of what is appropriately and inappropriately controversial. In any case, instructor intervention is always a valid option should the direction of these contributions move outside of appropriate realms.

Yet this status can also present a challenge. While hybrid or blended courses increase in popularity (Kim & Bonk, 2006), the use of social media in the classroom remains somewhat new, for both instructors and students. Often, the student is most uncertain of these new technologies in the classroom as the medium where their work will be evaluated. As most students had been conditioned to being evaluated by examinations, written papers, group projects, or other traditional measures, our experiences found a number of students who encountered a degree of internal discord, as they were less certain of how to navigate a successful grade in producing work in an evaluated social media environment. In essence, some students were uncomfortable when they did not know precisely what was expected of them, , a response similar to what Heinze and Procter (2006) found in their work on blended-learning environments.

Similarly, professors, themselves, may encounter a degree of uncertainty in terms of instructing students and providing clear and reassuring guidelines for online activities. Based on a preliminary analysis of personal experiences, the more specific the instruction

is, the more productive and rich the student response. Facebook instruction and assignments proved most helpful when a specific task or question was posed. This is consistent with the observations of other scholars that have used computer-mediated class supplements (ex. Lazonder et al, 2003), and recognize the importance of an instructor or tutor to mediate discussion when necessary to improve the quality of conversational exchanges. Conversely, when students were asked to simply “continue their conversation on Facebook,” results were much more mixed. The experience was similar with the use of wikis, where students had to be reminded that even though it looks and feels very much like a website where they might make comments or informal conversation with their peers, in reality, this is simply a different medium through which to turn in academic-quality work. Though students are familiar with social media sites, their familiarity consists almost exclusively of these as social, non-academic sites. To remedy this situation, instructors may wish to provide examples of acceptable and non-acceptable responses to discussion topics early on in the semester. Doing so will help to build the necessary scaffolding for what constitutes an appropriate academic response within the learning community.

As illustrated by the aforementioned case studies, it is clear that these social media offer many possibilities as relatively new pedagogical tools to be used aside traditional classroom techniques, and our experiences have shown a number of applications that have furthered student learning beyond what could be achieved otherwise. Most exciting, however, are the applications that have not yet been considered and the ideas that have yet to emerge. In this continuing dialogue on the place of social media in the class, it is important to remember that the very nature of social media allows a micro-level, user-based generation of content, the community as a whole body contributing together to give shape to an abstract collection of bits of information. Benefits also include positive outcomes that are more abstract, such as student investment in course material, understanding of broader course concepts, and retention of specific course material. When applied to the classroom setting, the body of information that emerges from this collective community of practice is often greater than the sum of its parts. It is up to the instructor to leverage the uses of these technologies in order to create new spaces for learning, new opportunities for students to use these media as the stuff of integration between established learning objectives and student contribution to the individualized and collective completion of these objectives.

It is also helpful at the instructional level to use theory to guide the development of courses for those wishing to implement social media as pedagogical tools. ‘Guide’ is the key word, however. Although social media may lend themselves as communities of practice, their use as pedagogical tools is far from exclusive. It would be a mistake to assume students will immediately embrace engaging in critical discussions in forums where banal chatter is much more commonplace. An instructor may need to require specific online assignments, or provide examples particularly early in the course, until the students feel comfortable using the social media as a discursive space. However, if a goal is to use the space as a true center for social interaction and meaning construction among students care must be taken by the instructor to facilitate the process only to the extent necessary. Using social constructivist theory in this context has the ability to clarify the roles of stu-

dents and instructors, develop a community of practice, foster inter- and intrapsychological processes, and maximize learning potential.

Acknowledgements

This work was supported by a Committee on College Teaching and Learning grant from Niagara University.

References

- Allen, I. E., & Seaman, J. (2008). *Staying the Course: Online Education in the United States 2008*. Retrieved from the Sloan Consortium, Olin and Babson Colleges: http://sloanconsortium.org/sites/default/files/staying_the_course_2.pdf
- Boling, N. C., & Robinson, D. H. (1999). Individual study, interactive media, or cooperative learning: Which activity best supplements lecture-based distance education? *Journal of Educational Psychology* 91: 169-174.
- Chang-Wells, G. L. M., & Wells, G. (1993). Dynamics of discourse: Literacy and the construction of knowledge. In: Forman, E. A., Minick, N., & Stone, C. A. (eds) *Contexts for Learning: Sociocultural Dynamics in Children's Development*. New York: Oxford University Press, 58-90.
- Cole, M. (1985). The zone of proximal development: Where culture and cognition create each other. In: Wertsch, J. V. (ed) *Culture Communication and Cognition: Vygotskian Perspectives*. New York: Cambridge University Press, 146-161.
- Cole, M., John-Steiner, V., Scribner, S., & Souberman, S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Davydov, V. V. (1995). The influence of L. S. Vygotsky on education theory, research, and practice. Translated by Stephen T. Kerr. *Educational Researcher* 24: 12-21.
- Facebook. (2010). *Statistics*. Available at: <http://www.facebook.com/press/info.php?statistics#!/press/info.php?statistics>.
- Felix, U. (2005). E-learning pedagogy in the new millennium: The need for combining social and cognitive constructivist approaches. *ReCALL*, 17(1): 85-100.
- Flyvbjerg, B. (2006). Five misunderstandings about case study research. *Qualitative Inquiry*, 12: 219-245.
- Gabriel, T. (2011). Speaking up in class, silently, using social media. *The New York Times*, 12 May, p. A1.
- Guasch, T., Alvarez, I., & Espasa, A. (2010). University teacher competencies in a virtual teaching/learning environment: Analysis of a teacher training experience. *Teaching and Teacher Education* 26: 199-206.
- Hamel, J., Dufour, S. & Fortin, D. (1993). *Case study methods*. Qualitative Research Methods Series 32. Newbury Park, CA: Sage Publications.
- Hawkey, K. (2003). Social constructivism and asynchronous text-based discussion: A case study with trainee teachers. *Education and Information Technologies* 8: 165-177.
- Heinze, A., & Procter, C. (2006). Online communication and information technology education. *Journal of Information Technology Education* 5: 235-249.

- Howe, J. (2006). The rise of crowdsourcing. *Wired* 14(6). Available at:
<http://www.wired.com/wired/archive/14.06/crowds.html>.
- Hung, D. W. L., & Der-Thanq, C. (2001). Situated cognition, Vygotskian thought and learning from the communities of practice perspective: Implications for the design of Web-based learning. *Educational Media International* 38: 3-12.
- John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist* 31: 191-206.
- Kim, K. J., & Bonk, C. J. (2006). The future of online teaching and learning in higher education: The survey says... *Educause Quarterly*, (4): 22-30. Available at:
<http://net.educause.edu/ir/library/pdf/EQM0644.pdf>.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lazonder, A. W., Wilhelm, P., & Ootes, S. A. W. (2003). Using sentence openers to foster student interaction in computer-mediated learning environments. *Computers & Education* 41: 291-308.
- Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). *Social Media & Mobile Internet Use among Teens and Young Adults*. Available at the Pew Research Center:
http://pewinternet.org/~media/Files/Reports/2010/PIP_Social_Media_and_Young_Adults_Report_Final_with_toplines.pdf.
- Marsh, G. E., & Ketterer, J. J. (2005). Situating the zone of proximal development. *Online Journal of Distance Learning Administration* 8(2). Available at:
<http://www.westga.edu/~distance/ojdla/summer82/marsh82.htm>.
- Martini, A., & Cinque, M. (2011). Social networking as a university teaching tool: What are the benefits of using Ning? *Journal of e-Learning and Knowledge Society* 7: 67-77.
- Maxwell, J. A. (2005). *Qualitative Research Design: An Interactive Approach*. (2nd ed) (Vol. 41). Applied Social Research Methods Series. Thousand Oaks, CA: Sage Publications.
- McLoughlin, C., & Lee, M. J. W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. Ascilite Conference 2007, Singapore, Malaysia.
- McLoughlin, C., & Lee, M. J. W. (2008). Future learning landscapes: Transforming pedagogy through social software. *Innovate: Journal of Online Education*, 4(5). Retrieved 13 July 2012 from
http://www.innovateonline.info/pdf/vol4_issue5/Future_Learning_Lanscapes-Transforming_Pedagogy_through_Social_Software.pdf.
- Millard, M.O. (2010). Analysis of interaction in an asynchronous CMC environment. Web Science Conference, 2010, Apr 26-27, Raleigh, N.C.
- Notar, C. E., Wilson, J. D., and Montgomery, M. K. (2005). A distance learning model for teaching higher order thinking. *College Student Journal* 39: 17-25.
- O'Reilly, T. (2005, September 30). What is web 2.0? Design patterns and business models for the next generation of software. O'Reillynet [weblog]. Retrieved 29 October 2010 from
<http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>.
- Palfrey, J. and Gasser, U. (2008). *Born Digital: Understanding the First Generation of Digital natives*. New York: Basic Books.

- Pear, J. J., & Crone-Todd, D. E. (2002). A social constructivist approach to computer-mediated instruction. *Computers & Education* 38: 221-231.
- Romero-Frias, E., & Montano, J. L. A. (n.d.). Exploring the use of social network sites on accounting education: A social constructivist approach. Retrieved 15 September, 2010 from <http://personal.us.es/arquero/jornada/docs/25.pdf>.
- Surowiecki, J. (2005). *The Wisdom of Crowds*. New York: Anchor Books.
- Tapscott, D., & Williams, A. D. (2006). *Wikinomics: How Mass Collaboration Changes Everything*. New York: Penguin Group.
- Vygotsky, L. S. (1978). *Mind in Society*. Cambridge: Harvard University Press.
- Wenger, E., White, N., & Smith, J. (2009). *Digital habitats: Stewarding technology for communities*. CP Square Press.
- Woo, Y., & Reeves, T. C. (2007). Meaningful interaction in web-based learning: A social constructivist interpretation. *Internet and Higher Education* 10: 15-25.
- Yin, R. K. (1993). *Applications of case study research* (Vol. 34). Applied Social Research Methods Series. Thousand Oaks, CA: Sage Publications.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed) (Vol. 5). Applied Social Research Methods Series. Thousand Oaks, CA: Sage Publications.

ⁱ This concern was not lost on the professor who designed a second Facebook profile specifically for academic purposes.

ⁱⁱ The one student who noted she had taken a course that utilized a SNS with regularity acknowledged that she was only currently in that class, thus making her familiarity with the pedagogical aspect of the tool limited.