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Using Bloom's Taxonomy To Assess Social Media Assignments

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Abstract

This paper argues that by linking social media assignments to particular levels of Bloom's Taxonomy, instructors can more easily and straightforwardly assess assignments. Much confusion exists over how to best incorporate these tools, and further, how to properly assess student performance related to social media. Often social media is used simply as an additional and optional channel of communication, rather than as an inherent part of a graded assignment, due in part to the difficulties of assessment. Using social media effectively and collaboratively is an important aspect of literacy in the 21st century; it is therefore important to move beyond merely incorporating the tools, but also assessing the use of the tools.

Keywords: Bloom's Taxonomy, Social Media, Assessment

Instructors in higher education are increasingly using social media tools such as YouTube, Facebook, and Twitter in the classroom. Appropriate usage of these tools in an educational environment offers the opportunity for a variety of benefits. Current incoming freshman, who are of the Millennial Generation (or "Millenials", generally understood as those born between the early 1980s and the early 2000s), are already familiar with and enjoy using social media, creating one very common rationale for using these tools in the classroom. However, just because students are comfortable using social media for socializing does not automatically mean that they are comfortable or know how to use social media for education or business-related collaboration. Mullen and Wedwick (2008) argue that being able to use such tools to collaborate effectively will be a necessary component of being considered literate in the 21st century. Therefore, simply teaching students how to use these social tools for productive collaborative purposes is important in and of itself. On another level, instructors should consider social media as a pedagogical tool within their arsenal for helping students understand instructional content, in much the same way as a traditional research paper. In this paper, I explore both beneficial reasons for incorporating social media in the classroom, while also considering possible objections and areas of concerns in implementation. Finally, I explore best practices for successfully implementing social media in the classroom by linking its usage to Bloom's Taxonomy.

Why use social media in the classroom? Dede proposed that a neo-millennial learning style – a learning style "enhanced by mediated learning in distributed learning communities" – helps develop the type of skills needed for the new millennium (2005, p. 15.14). He characterizes the learning style as follows: "

1. Fluency based in multiple media, valuing each for the types of communication, activities, experiences, and expressions it empowers.
2. Learning based on collectively seeking, sieving, and synthesizing experiences rather than individually locating and absorbing information from a single best source.
3. Active learning based on both real and simulated experiences that include frequent opportunity for reflection.
4. Expression through non-linear, associated webs of representations rather than linear 'stories' (*e.g.*, authoring a simulation and a webpage to express understanding, rather than a paper).
5. Co-design of learning experiences personalized to individual needs and preferences" (p. 15.15).

Reading these learning styles, one can already begin to imagine how these might match well with the implementation of social media in the classroom, making it an important tool because it can bolster skills that will be needed by Millennials.. The application section will further explore ways these learning styles can align with the use of social media. Despite the potential benefits of social media, some instructors, who may not themselves be Millennials, are still hesitant to implement it in the classroom. In the next section, I will consider the concerns of these instructors before moving on to the benefits of implementation. Finally, I offer several strategies for implementing social media into the classroom, the most significant of which is aligning and assessing the social media usage in accordance with Bloom's Taxonomy.

Concerns and Opposition to Implementation

What factors prevent instructors from attempting to incorporate social media in the classroom? The age of the instructor appears to make a difference. Moran, Seaman, and Tinti-Kane (2012) found that faculty members, especially those non-Millennials who were born before approximately 1970, have greater concerns about privacy, plagiarism, and the time required to properly use social media. Abe and Jordan (2013) echo the concern that using sites such as Facebook and Twitter will take too much time, asking "will the time spent explaining how to effectively use social media take away from the subject matter educators currently concentrate on in their courses?" (p. 20).

Further concerns raised by Abe and Jordan include the worry that the textual nature of social media will eliminate access to important nonverbal cues that are part of the instructor-student relationship. Additionally, assignments posted via social media are publically accessible and typically archived indefinitely. Discussions that are appropriate in an educational context may not appear that way to employers who are googling students as potential employees in the future: "An educational conversation now may not look 'educational' to an employer long term, particularly if the content of the assignment or conversation is perceived as a sensitive

topic (*e.g.*, politics, religion, gender equality)" (2013 p. 19). Jovanovic, Chiong, and Wiese (2012) also argue that the use of social media may lead to students wasting time browsing Facebook socially when they should be using it educationally. Finally, some students have raised objections to being required to use social media as part of an assignment, noting that they worried instructors would use social media to get information about them, or simply would prefer that their social space not be used for educational purposes (Abe & Jordan, 2013; VanDoorn & Eklund, 2013).

Despite these concerns from both faculty members and students, many are still using social media in the classroom. Cao, Ajjan, and Hong (2013) researched factors that would influence instructor likelihood to adopt social media in the classroom and determined that task-technology compatibility was the most significant positive predictor of the use of social media in college teaching. Perceived usefulness and external pressures also motivated use.

Benefits of Implementation

As with all tools, social media has potential drawbacks. The question, then, is whether or not there are also significant benefits to using this particular tool. Research has shown that the use of social media positively influences both student satisfaction and learning outcomes, and these increase the more that instructors used social media (Cao, Ajjan, & Hong; Cao & Hong, 2011). Jovanovic et al. reported additional benefits to using Facebook groups as part of a course: "More than half of them [the students in the study] reported that it enhances the sense of community within the learning environment, the learning process, and class discussions, makes the classes more interesting, and – as a learning tool – engages students" (p. 41). This type of community supports the type of collective activity that matches the second neo-millennial learning style.

VanDoorn and Eklund (2013), in a study of social media tools, determined that rapid responses by instructors facilitated by social media is important to students and heightened the sense of immediacy. Additionally, the study showed that in contrast with faculty members' concerns that important nonverbal information would obstruct communication, many students appreciate the comparatively low pressure and "faceless" communication opportunities afforded by text-based media, even making up for some of the nonverbal communication through the use of emoticons. Although learning management systems such as Canvas or Moodle also offer this type of textual interaction, Tess (2013) reports that engagement, as measured by the number of posts, can be as much as four times higher on social networks than a traditional learning management system.

Social media tools also allow access to information in a more immediate manner than something like a textbook, allowing for greater flexibility (VanDoorn & Eklund, 2013; Jovanovic et al. 2012). Thomas and Thomas (2012) argued that "alongside traditional teaching techniques, social media can be continually developed around any topic and incorporate current business events in the learning process as the events themselves unfold" (p. 365). Presenting up-to-date information and helping students understand material in the context of current events is one aspect of the classroom that can benefit greatly from the addition of social media.

Suggestions for Use

Creating an appropriate instructional process for social media usage can mitigate many of the drawbacks associated with such assignments. Drawing upon both my own use of social media in the classroom and relevant research, I offer several suggestions for using social media in the classroom, before exploring how the use of Bloom's Taxonomy can support these suggestions in the next section.

1. Discuss Privacy Explicitly

Many popular social networking sites, and specifically Facebook, offer extensive privacy settings that would allow students to keep their social media profiles hidden from faculty members even while engaging in a class-related group. Further, these postings can be excluded from search engines that would allow employers to find them. Making students aware of these settings and discussing how to set them appropriately would help overcome many concerns. Educational conversations would not be publically available to future employers, and instructors would not have access to students' personal profiles. Even students who frequently use these social media tools may not be aware of these settings; therefore, explicitly discussing them is an important step in successfully using social media. Even if using a particular tool where these privacy settings are not available, it is important to make students aware of the fact that their postings will be public and what the possible implications of this may be.

2. Model Best-Use Practices

It is important for instructors to remember that students primarily use these tools socially. For many, an academic or professional use will not come naturally. Therefore, the instructor ought to use the social media tools in a way that demonstrates its best uses. For example, in online courses I've taught, I have commented and been much more active in the discussion board during the beginning of the course as a way to model the type of interaction I expect on such a forum. A similar strategy can be used with any social media tool, and doing so is much easier if it is a tool the instructor is already comfortable using. Along those lines, I recommend only assigning social media tools to students if the instructor is comfortable using them. For example, if an instructor never used Twitter before, he or she should not assign it to students! Instead, learn about it and begin to use it professionally before attempting to implement it in the classroom. This commitment can make a big difference and will be apparent to students. This advice is not meant to discourage instructors from using any particular social media that is well suited for an assignment, but rather to encourage them to become personally familiar with it *before* they assign it to students.

I use Twitter as a way to network with others in my field and to share the work I am doing as well. Because I follow people who work in the same field, my Twitter feed serves almost as a customized newspaper. Unlike Facebook where I have met most of my friends in person, I use Twitter to connect to professionals I have never met personally. I see links to the latest work and news in my field, often directly from the authors themselves, and I can retweet these and reply to the original posters to discuss them. Allowing students to see the way I use this social media tool can serve as an example of a way to use it in a more professional manner for those who may not have experienced that particular way of using the site.

3. Make Assessment Strategies Clear

Bennett, Bishop, Dalgarno, Waycott, and Kennedy (2012) make the important observation about the use of social media in the classroom that while there are surface similarities to educational objectives, there are also deep incongruities. The web emphasizes the product and allows for easy linking, remixing, and mash-ups. Academia, on the other hand, places high value on authorship and citation as an aspect of the qualification process for students toward a degree or instructors toward tenure or promotion. At the institutional level, instructors ultimately have to assign grades, and so they need a way to evaluate the assignments. Being clear up front about how these assignments will be assessed will not only make grading easier for the instructor, but also make the assignment clear for students as well. Many social media projects will be multi-modal, and thus need to take into account more elements of the work required for the project.

Ball (2012) highlights several strategies for grading multimedia assignments, such as suggestions from the Institute for Multimedia Literacy. These suggestions include assessing the conceptual core of the project, the research component, the form and content, and the creative realizations. Although there are many alternative ways of assessing such assignments, I believe these guidelines offer a good general outline of what instructors need to consider in addition to the traditional research component of assignments. Additionally, Ball suggests that instructors should remember when implementing multimedia – or social media - that the project should achieve something not possible on paper. This leads directly into the next recommendation.

4. Ensure Task-Technology Compatibility

One of the major obstacles to implementing social media successfully in the classroom is a problem of abundance – in other words, the large variety of tools that are included under the umbrella of the term "social media," as well as how often these tools evolve and update. Because of this, my recommendation is that instructors stop thinking in terms of "social media" as a whole, and instead start thinking about individual tools, such as Facebook, YouTube, Twitter, *etc.* Task-technology compatibility is one of the greatest predictors of social media success in the classroom setting, but this compatibility is best determined on the level of the individual tool. In other words, instructors should incorporate a discrete tool like Facebook into an assignment, not a vague tool like "social media."

In order to do this, an instructor can think about how a particular tool can help achieve a particular course objective or learning outcome. Looking over the objectives, some tools might make more sense than others; if the objective includes better communication and interaction with peers inside the class, a Facebook group presents itself as a more compatible match. However, if the objective includes students communicating with other professionals in the field and seeing how the topic is relevant in contemporary terms, an assignment utilizing Twitter would be a more compatible match.

Finally, although the novelty of technology itself has long been enough to engage students in an assignment, this is no longer always the case: "the Internet is no longer inherently cool, and is even a little boring" (Perry, 2013). Bennett et al. (2012) found this attitude in students who participated in a study on using Web 2.0

tools in the classroom: "While students indicated they enjoyed identifying chemistry concepts in everyday phenomenon [through image sharing on Flickr], they also complained that this did not help them do better in their assessment tasks. So, although there was a high level of engagement in the activity, students felt it did not fit clearly into the dominant educational practices in their course" (p. 533). When creating assignments using social media, it is extremely important for an instructor to make sure he or she is not simply integrating technology for the sake of technology; instead, ask what objective or outcome it will support.

Incorporating Bloom's Taxonomy

Bosman and Zagenczyk (2011) suggest one of the best strategies for beginning to make the connection in task-technology compatibility. They propose "each of Bloom's [Taxonomy] components can be highlighted using different social media tools" (p. 3). Bloom's Taxonomy, originally published in 1956, gave explicit definitions for each of the major categories in the cognitive domain. Instructors create learning outcomes based on the Taxonomy because it offers a straightforward way to align particular student actions to the various levels of the cognitive domain. Although the Taxonomy also includes the affective and psychomotor domains, I focus here on only the cognitive. Revised in the 1990's, the cognitive domain includes, in order of lower to higher order thinking skills: remembering, understanding, applying, analyzing, evaluating, and creating (Bosman & Zagenczyk; Anderson, Sosniak, & Bloom, B., 1994; Krathwohl, 2002; *Writing Learning Outcomes*, n.d.).

In writing a learning outcome, an instructor can optionally begin with a phrase such as "The student will be able to…", which reinforces the idea that the learning outcome should be focused on what the student should be able to do rather than the instructor. Next, the instructor can select an action verb that aligns with the level of the cognitive domain they are attempting to teach. For example, at the application level, an outcome may require a student to demonstrate, prepare, or solve something. Finally, adding the skill the student should master completes the outcome (*Writing Learning Outcomes*, n.d.). Put together, a learning outcome based on Bloom's Taxonomy might read: "The student will be able to demonstrate the use of pathos for persuasion while speaking."

Along these lines, Bosman and Zagenczyk (pp. 5-11) suggested the following task-technology example matches for Bloom's Taxonomy and social media:

- Remembering and social bookmarking (Delicious, Pinterest)
- Understanding and social blogging (Wordpress, Tumblr)
- Applying and social file sharing (Google Docs, Wikis)
- Analyzing and social collaboration (Skype, Oovoo)
- Evaluating and social decision making (Kluster, Doodle)
- Creating and social creativity sharing (Scribed, YouTube)

Application

What might this look like as an actual assignment? The key is to tie this task-technology example to a well-constructed learning outcome. Consider an example using Pinterest, a digital hybrid of a pin board and a bookmarking service. For a public speaking course, I might write the following learning outcome: "The student

will be able to identify the use of ethos, logos, and pathos in speeches." In this case, the ability to identify would fall under the remembering level of the cognitive domain and match up well with the social media tool Pinterest, which allows the creation of collections of pins. Each of these pins features either a video or image from the page being pinned, and allows users to add a description. Matching this task with a technology, I could then create an assignment that asks students to collect ten examples of speeches where the speaker demonstrates a skillful use of ethos, pathos, and logos, then pin each speech to a group Pinterest board, and finally identify how the speaker demonstrates this skill by adding a written description to the pin.

By creating assignments based on specific learning outcomes that connect task and technology, assessment of such assignments becomes more manageable. In the Pinterest example above, I can now more easily create assessment criteria and provide these to the student along with the original assignment so that the instructions and expectations are clearly stated. Remembering the inclusion of the 21st century skills as a part of a new understanding of basic literacy, it is also important to make sure that as an instructor, I am evaluating both the content of the project, and how well the social media tool itself has been used.

This assessment strategy actually aligns well with a more traditional understanding of the goals of the research paper. When an instructor grades a research paper he or she is usually grading both the content of the paper – how well the student has understood the material – as well as the mechanics – how well the student has used a word processor to format, add citations, etc. For the Pinterest assignment, I am grading the content of the descriptions students wrote for their pins. Do these descriptions reflect the ability to identify ethos, logos, and pathos? However, I am also grading the use of the social media itself.

The Pinterest example offers a straightforward and relatively simple use of social media, also reflecting its usage on the lower end of the critical thinking skills in the cognitive domain of Bloom's Taxonomy. Other tools, such as YouTube, which are matched with the higher order thinking skills, offer a much broader variety of possible uses. In addition to the elements of creativity opened up by editing video in general, YouTube offers many other possibilities for technical enhancement including descriptions of the video, tags, linking together multiple videos through annotations, and much more. Depending on the learning outcomes in the assignment, instructors can integrate some or all of these elements into the assessment rubric.

To take a second example, in an Introduction to Science, Technology, and Society course that I teach I have created the learning outcome: "the student will be able to invent a new technology using critical making technologies such as 3D printing and microcontrollers." Inventing would fall under the create level of the cognitive domain in Bloom's taxonomy. This ambitious, semester-long learning outcome is part of a larger course objective that aims to help students understand the ways technologies are invented and the social influences that impact them. As part of this, assignment, I ask students to post pictures of their work in progress to either Instagram or Twitter using two specific hashtags related to the course and the university. Both Twitter and Instagram allow the posting of photos and videos,

along with text; however, uploading video to Twitter requires the use of a second application such as Vine. I offer a choice in this case because some students have strong preferences regarding one service or the other, and both facilitate image and video sharing in a similar way.

This process of sharing fits the task well because students are attempting to understand theoretical concepts such as the social construction of reality and Robert Merton's ethos of communism in science. By first finding guides and Instructables on the web that help them develop their projects, and then sharing the advances those projects make, the students are able to actively participate in this ethos of scientific communism.

I have selected this type of social sharing for two other reasons, which, although specific to my particular class, may serve as an example of criteria that others may use when selecting a social media platform for the classroom. First, I have gamified the entire course, and one important element of gamification is sharing achievements across the player's social graph. Because students share these projects through their Twitter and/or Instagram accounts, their family, friends, and acquaintances see the technologies that are being invented and have left encouraging and positive feedback. Second, my university is currently hosting a hashtag challenge, selecting a winning Instagram picture each week that features the #thinkanddo hashtag, reflecting the university motto. By using this hashtag, the students are automatically entered into the weekly competition. One student project won the weekly contest and was featured on the main university social media account. I archived these projects using Storify, which can be accessed here: https://storify.com/JJSylvia/sts-214-intro-to-science-technology-and-society.

Using Bloom's Taxonomy in this way can help ensure task-technology compatibility. The tools matched with each level are merely suggestions; it is certainly possible that various Web 2.0 and social media tools can be used for multiple levels. However, beginning to think of social media tools in this manner has been very effective for me in brainstorming ways to incorporate these tools in my own assignments. Instructors who are considering using social media as part of classroom assignments for the first time should consider using tools with which they are most familiar and then matching those to appropriate tasks. Because these social media tools are so flexible, they can be incorporated with any subject area.

Conclusion

Social media is an exciting and constantly changing tool that is available for use in the classroom and is beneficial because it engages students through a medium in which they are already interested and present. Additionally, social media opens up a greater variety of assignments that can help achieve outcomes at various levels of Bloom's Taxonomy in a way that is vibrant and current. As we saw in the section on the benefits of implementation, students are engaged by these assignments, feel a greater sense of instructor immediacy, and are more connected and collaborative with their peers(Cao, Ajjan, & Hong, 2013; Cao & Hong, 2011; Jovanovic et al, 2012; Tess, 2013; Thomas, M., & Thomas, H., 2012; VanDoorn & Eklund, 2013;). The affordances of social media track closely with the neo-millennial learning styles that are important for Millennial students.

Early adoption of social media in the classroom has seen mixed results, but instructors can learn from these early uses and improve the uses of social media in higher education. A major part of these improvements will come from simply being more explicit and clear in the assessment of such assignments and in the ways that instructors model their own use of social media to students. As with all assignments, it is important to connect the assignments to course objectives and learning outcomes. Using task-technology compatibility through the perspective of Bloom's Taxonomy offers clear strategy for this making this connection.

Finally, though not typically appearing explicitly in most course objectives, gaining experience in using social media as a professional tool is an important 21st century literacy skill for students that can be translated to future careers, much like reading and writing. In light of these benefits, the concerns regarding implementation of social media seem to pale in comparison. Imagine if a researcher were to make the claim that instructors should not teach writing in school because it would allow the possibility that students could publish something that would embarrass them, or if read by potential future employers, might be detrimental to their getting the position. Such a scenario is not a reason to avoid teaching writing. It is a reason to teach students how to write well. This same framing should apply to social media. Rather than seeing the potential for difficulties with privacy, instructors should see a teachable moment. Just as writing is an important part of every discipline in higher education, so too, should be social media.

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