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# Exploring the Use of Social Bookmarking Technology in Education: An Analysis of Students' Experiences using a Course-specific Delicious.com Account

Tricia M. Farwell

Richard D. Waters

*University of San Francisco*, [rdwaters@usfca.edu](mailto:rdwaters@usfca.edu)

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## Exploring the Use of Social Bookmarking Technology in Education: An Analysis of Students' Experiences using a Course-specific Delicious.com Account

**Tricia M. Farwell**

Assistant Professor  
School of Journalism  
Middle Tennessee State University  
Murfreesboro, TN USA  
[tfarwell@mtsu.edu](mailto:tfarwell@mtsu.edu)

**Richard D. Waters**

Assistant Professor  
Department of Communication  
North Carolina State University  
Raleigh, NC USA  
[rdwaters@gw.ncsu.edu](mailto:rdwaters@gw.ncsu.edu)

### Abstract

With more than 4.6 million people, mostly undergraduates, enrolling in at least one online course in fall of 2008, students are showing that they are comfortable with the concept of technology in education. Many students in online classes, however still have to deal with the high cost of textbooks and supplemental materials. Online technologies, however, can provide other alternatives to costly coursepacks and textbooks. Faculty and students may be able to replace or supplement coursepacks and textbooks with social bookmarking sites. This study shows how social bookmarking, specifically Delicious.com, can be used in a course to provide an inexpensive answer to the question of rising course materials costs. Through a series of online focus groups, 53 students enrolled in a "Social Media and Public Relations" course revealed their apprehension toward using an unknown technology and discussed their positive and negative experiences with using the course-specific Delicious.com account. Implications for how social bookmarking can impact online and offline learning are discussed.

**Keywords:** Social bookmarking, higher education, focus groups, Web 2.0, e-learning, Delicious.com, Digg, textbook replacement, coursepack replacement, online resources, social media, online education

### Introduction

As the price of higher education keeps increasing and budgets keep decreasing, universities are seeking new outlets to try to cut costs. One such outlet, online classes, has seen a strong increase in enrollment over the past six years. With more than 4.6 million people, mostly undergraduates, enrolling in at least one online course in fall of 2008, students are showing that they are comfortable with the concept of technology in education (Allen & Seaman, 2010).

In an attempt to find the right reading materials for their class and, in some cases, to reduce costs, professors may turn to using coursepacks, photocopies of materials they select. While coursepacks may help to incorporate information from news magazines, trade publications, hard-to-locate copies of book chapters and case studies into a course's required readings, they do not always result in a lower cost to the students due to copyright issues.

Online technologies, however, can provide inexpensive, and often free, alternatives to printed materials. Podcasting has become a common method of providing audio and video content to students, and Apple has launched iTunes University to allow instructors to manage, distribute, and control access to educational material, such as lectures, announcements and news, and special sessions with guest speakers (McKinney, Dyck, & Luber, 2009).

Both students and instructors have embraced new technologies in educational settings after receiving proper training on various applications and exploring them with others (Minocha, 2009). Piontek and Conklin (2009) introduce a variety of social media applications that can be used in higher education and show how blogging, web-conferencing, and wikis can be used in virtual and traditional classroom environments. While these social media applications have been praised for increasing interaction, Payne (2009) points out that there are times when one-way communication is necessary.

Behan and Boylan (2009) point out that social bookmarking should be considered by instructors in higher education because it brings together traditional one-way strategies of information dissemination, but it also allows for the sharing and evaluation of links by users. In essence, social bookmarking is an online catalog of hyperlinks that users have found helpful and want to share. Many social bookmarking applications allow individuals to vote on a link's usefulness or comment on the accuracy of the information it conveys. Because of this interaction, social bookmarking has been considered one of the most powerful Web 2.0 tools for higher education (Page & Ali, 2009). However, social bookmarking may be the least known form of social media applications by students today (Grosbeck, 2008).

This purpose of this study is to examine how familiar with students are with the concept of social bookmarking and to explore their reactions to using the social media application after using Delicious.com for supplemental course readings.

### **Literature Review**

#### *The Rising Costs and Proposed Solutions of Higher Education*

The cost of college textbooks for students entered mainstream knowledge in 2005 when the U.S. government and media revealed that first-time full-time students at 4-year private universities spent an average of \$850 in 2003-2004 on course materials ("United States," 2005; Buczynski, 2006; Christie, Pollitz, & Middleton, 2009). For first-time full-time students at public universities the cost was \$898. This number has continued to rise. Estimates put textbook and material costs for 2009 at \$1077 at four-year institutions (D'Amico, 2009).

The General Accounting Office determined that the increase stemmed from publishers bundling materials, such as CDs and workbooks, along with the primary text and issuing new editions too frequently (United States, 2005; Buczynski, 2006). Publishers responded that they did provide a wide range of textbooks at various prices. However, one report found that the lower priced books were not advertised and were difficult for faculty to find ("Textbooks," 2006). Thus, the option of the less expensive book may be realized by neither faculty member nor student.

Other solutions that may help students to find affordable textbooks have come to the forefront. For example, textbook rental services allow students can rent the textbook for a specific time period, saving as much as 70% on books ("Renting," 2009). Perhaps the biggest drawbacks to this service are that students are not allowed to write marginalia in the books and are charged fees if the book is not returned in good condition.

Some have pointed toward e-books and libraries to help reduce costs. While most publishers provide digital copies of their books, those books have not been adopted as widely as hoped. The National Association of College Stores found that e-textbooks are only 2-3 percent of the market (Young, 2009a). While the digital copies usually cost students less, students and faculty members find the books do not fit their methods and access to the materials is time sensitive (Carlson, 2005). These books, however, do have benefits. Students with access to the online books can find a built-in dictionary, a search engine, and, in some cases, the ability to write marginalia. Faculty requiring these texts have access to quizzes being graded online and the possibility of lecture capture with some publishers (Young, 2009b). However, there is concern that if the e-texts were more widely adopted, the prices may increase (Young, 2009b).

Another, more problematic, option that some have taken is using pirated copies of textbooks. One study found that 27 percent of the respondents admitted to seeking illegal copies of textbooks online and 8 percent reported in succeeding in the download of the textbook (Young, 2008). While the study sample was small, only 500, it may be pointing to larger trends. Textbook torrents, online sites pointing towards free shared downloads, are easy to find online.

In order to help cut back on piracy, the Association of American Publishers Online Piracy Working Group released a draft of the best practices to put an end to textbook piracy. Included in those

recommendations are items such as having the site management provide the publishers with a list of pirated titles and removing people from the site who have pirated more than once ("AAP," 2009)

At some universities, libraries have been asked to fill the gap by asking them to carry at least two copies of each required textbook (Christie, Pollitz, & Middleton, 2009). Not only would this put a space strain on the majority of libraries, but one study also found that students rank going to the library to find a copy of the textbook third after buying used books and sharing/borrowing books (Christie, Pollitz, & Middleton, 2009). Interestingly, libraries have been quick to reach out to the online world to help them provide the services users require by embracing the functions of social bookmarking sites.

#### *Using Web 2.0 Technologies to Reduce Higher Education Costs*

In reviewing the impact of technologies on mankind, Friedman (2005) demonstrated that technology has had a tremendous impact on education. In particular, he noted that as technologies become more widespread they have a flattening impact in regards to financial barriers to higher education. Although he did not specifically examine the social media applications previously mentioned in this literature review, other scholars have. They concluded that social media applications have aided in educating large numbers of people because information spreads easily from person to person and because it facilitates conversations through blogging, video-sharing, and being able to comment on Web-based materials (Mason & Rennie, 2007; Rollet, Lux, Strohmaier, Dosinger, & Tochtermann, 2007).

Solomon and Schrum (2007) advocate that Web 2.0 technologies will revolutionize learning, particularly in the realm of higher education. Their support comes in the form of administrators' desires to reduce costs. Striving to reduce educational budgets, many colleges and universities have embraced Moodle, a free e-learning platform, that allows instructors to manage their courses rather than engaging in costly software contracts for similar services (Bremer & Bryant, 2005). The adoption of free resources has also led to many instructors to use podcasting as a way to deliver material to larger numbers of students rather than having multiple sections of the same course (Hulsmann, 2009). Institutions ranging from the University of California-Berkeley to East Carolina University have developed YouTube channels to deliver educational material to tuition-paying students as well as to individuals who simply want to learn (Snelson, 2009).

Social bookmarking may also be tool that will allow faculty and students to cut down on costs while getting the most up-to-date information. Sites, such as Delicious.com and Diigo, serve as repositories for user bookmarks much as the Internet browser bookmark ability does. However, since these sites are online and not linked to a specific computer, the information becomes available from any computer with Internet access. Through tagging, the user can label and organize the information according to his or her own vocabulary and use, not having to conform to an established order of classification (Etches-Johnson, 2006). These sites allow for more interaction with the information as users decide what information to tag and share (Rokolj, 2008; Pack, 2007; Stephens, 2007).

Social bookmarking sites have some clear advantages that facilitate learning. First, the social bookmarking account is independent from specific platforms. The site and account can be accessed using any operating system or Internet browser that the individual uses to access the Internet. This independence allows the site to be accessed on any Internet-ready device in the world. The site is also easy to use as no special knowledge of HTML programming is needed to save sites, and the search function that allows a user to explore others' bookmarks is similar to using an Internet search engine. Finally, social bookmarking allows the user to see how many other people have found a particular bookmark useful because it shows how many people have added a resource to their own account (a la Delicious.com) or have given it a thumbs-up rating (a la Digg.com).

Social bookmarking does, however, have its disadvantages. One of the biggest obstacles to using social bookmarking in a learning environment is that it requires an active Internet connection. While this may not pose problems for distance education and courses taught in an online learning environment, it does create situations in a classroom where resources saved to a social bookmarking account may not be easily accessible. Other problems exist surrounding the consistency (or lack thereof) of terminology used for classifying links. Vander Wal (2007) created the term, "folksonomy," to describe the phenomenon seen on social bookmarking sites whereby one common Web site is described using hundreds of different labels or tags based on the differing perspectives and languages. Language and word choice also have the potential to create user frustration when people misspell terms or use multiple variations of the same word. For example, a search for "blog" would only return links that were tagged with the "blog" label even though relevant information may also appear under the "blogs," "blogging," "blogger," and "blogosphere"

tags. One final disadvantage of social networking, according to Grosseck (2008), is that social bookmarking may create feelings of information overload for users due to the large number of links and significant amount of time needed to browse through the links.

Despite these limitations, social bookmarking has been identified as one of the best social software resources for instructors (Bryant, 2006). Social bookmarking allows students to explore relevant, timely material to their coursework (Olaniran, 2009). However, despite this support, Grosseck (2008) feels that most students are still largely unaware of social bookmarking and the impact that it could have on their educational experiences. This current study seeks to examine how students view social bookmarking in relation to the learning process through the following three research questions:

**RQ1:** How aware are students of social bookmarking?

**RQ2:** How do students describe their experiences with using a centralized social bookmarking account as a replacement for a course packet?

**RQ3:** What are the biggest advantages and disadvantages of social bookmarking in higher education from students' perspectives?

## Methodology

At a large Southeastern university, 59 students enrolled in a "Social Media and Public Relations" course to learn how different social media applications could be used in organizational communication and public relations campaigns. The instructor assigned readings from both a traditional textbook and a social bookmarking account that was made available to everyone in the course. Each week, the students were required to read one or two textbook chapters or research papers from academic journals as well as read between eight and 10 relevant bookmarked Web sites.

Half-way through the semester, the instructor asked for the students to participate in one of six online focus groups to discuss their reactions to social bookmarking. Originally, the instructor had not planned on conducting online focus groups; however, students had expressed initial hesitation with social bookmarking, and input was sought before the midpoint of the semester to determine if the supplemental readings were found to be helpful. The Institutional Review Board at the instructor's institution granted permission to collect the data through online focus groups since it was not a required portion of class and students had the option to withdraw from participation at any point.

Students signed up to participate in the online focus groups that were moderated by the instructor. On average, the focus groups lasted slightly more than one hour (63 minutes) to answer four open-ended questions concerning the course's social bookmark and the students' learning experience. In addition to these questions, the focus group moderator allowed the students to detail their positive and negative experiences with using Delicious.com, which housed the course's social bookmarking account.

The focus groups were transcribed by the research team to ensure that the students' exact language to describe their experiences. This method of transcription, as opposed to outsourcing the task, allows for more careful thematic analysis of the data. Thematic analysis involves reading the transcriptions and comparing each one with other focus group sessions while looking for similarities, which are then grouped together by category (Lindlof, 1995).

To ensure that the data was interpreted correctly, a validity check was conducted by asking the students to ensure that their words and experiences were accurately transcribed (Lincoln & Guba, 1985). Member checks were conducted within three weeks of completing the transcription.

## Results

Though the participants in this study came from different academic backgrounds and had varying levels of experience with social bookmarking prior to the course, they shared many experiences. The participants in the focus group consisted of 14 graduate students (eight females, six males) and 45 undergraduates (32 females, 13 males). Roughly one-half of the students were studying public relations (27) while another quarter studied other communication-related topics. The remaining one-third of students came from education, business, and sports management departments on the University's campus.

The first research question provided insight to one of the students' first shared experiences. Of the 59 students in the class, only 3 had said that they had heard of social bookmarking before the class. Two others acknowledged having heard of Delicious.com before, but had never explored the Web site or its offerings. Most often, focus group moderators heard comments such as, "Delicious was something I had never heard of" or "I had heard of bookmarking sites before but had never used one myself before this class." Both statements came from undergraduate females studying public relations.

A female graduate student studying technical communication admitted that she had never heard of social bookmarking before the course, but now uses Delicious.com regularly and added, "I actually use my account all the time! Social bookmarking helps me organize all my links, so that when I am in the midst of a busy work day, I can find them quickly."

Only one student—a male graduate student studying instructional design—admitted knowing and regularly using Delicious.com. He was very pleased to see that the service was being used for the course:

Being an avid Delicious user myself—and a self-proclaimed tech dork, I was incredibly psyched to see that our course would be using a Delicious account. I picked up on it at a tech education conference – and all of the presenters were offering their handouts via Delicious. So, I now naturally associate using Delicious with valuable and trusted resources and looked forward to using it for class readings.

Before proceeding to the second research question, it might be helpful to understand how Delicious.com was used for the "Social Media and Public Relations" course. One female public relations undergraduate summed up the course Delicious account as "a centralized place where we can go to get the weekly readings, and the tags make it easy to separate out the readings for each week. It doesn't require us to register or have a separate login." Essentially, the professor would select 8-10 links from trade journals, relevant blogs, and popular news pieces that touched on various topics or relayed helpful information.

With that information in mind, the second research question sought to determine how the students reacted to having a social bookmarking account rather than traditional materials. The response was overwhelmingly in favor of the social bookmarking account, but their reasoning was not solely based on cost although that was referenced several times. Students were pleased that the professors were using relevant, free resources. One male media studies student said, "Considering how much we pay for our other textbooks for all other courses, it is nice to be able to access course information for free, not to mention there are endless amounts of relevant and up-to-date information." Another male sports management graduate student noted that "I would most definitely not rather have a course packet put together by the bookstore. Many course packets cost a lot of money, and they are normally outdated."

Students had mixed reactions on the social bookmarking account being available only online. While some offered congratulatory messages, such as "great job on going green and saving paper" from a female marketing undergraduate, a few wanted to have something they could hold. One male psychology undergraduate noted, "The only thing that is nice about course packets is sometimes people like having something they can feel and touch while reading." Another female student from the graduate technical communication program added that she liked being able to highlight and take notes on the material itself, which cannot be done using Delicious.com.

A female public relations undergraduate added that she has never had to purchase a coursepack but, "it sounds awful, expensive, and environmentally un-friendly. While I still have a tendency to print out articles when they're particularly dense and academic, I think delicious is a great way to share lighter reading and interesting tidbits."

One added bonus of using social bookmarking emerged from these online focus groups that might not have emerged in others because of the nature of the course, which was being conducted through the University's distance education department. One graduating senior who was completing a public relations internship out-of-town was able to take the course while living more than 1,000 miles away from campus. She added that she would not have been able to purchase the coursepacket since she left for her internship before the semester started.

The final research question simply sought to explore the advantages and disadvantages of using social bookmarking by asking the students to reflect on their experiences with the course Delicious.com account. Overall, the major areas identified by the students concerned the content of the course account, the technology behind social bookmarking, and scope of the material available on the Internet.

Overwhelmingly, the students appreciated that the professor took time to pull together up-to-date, relevant links. One male public relations student said that he liked the Delicious account “especially since the information for this course is constantly evolving and changing. If you had made a course packet over the summer, most of the information would be out of date by the start of the semester.” Another female undergraduate student noted that because everything was online, “the bookmark can be updated every hour if needed.” One female English student acknowledged that this is also a potential downside for instructors considering social bookmarking. She added, “Because the topics for our course are constantly changing, some of the pages are out of date. It’s not exactly a history class, you know? (Social media usage) statistics from 2008 are already outdated.”

However, this negative should not prevent professors from using social bookmarks in their courses. Students, such as this male MBA candidate, said, “I appreciate the delicious account because it provides us with real life examples to the topics that were discussing in class.” An undergraduate male public relations student provided a different perspective on why the content was helpful, “I especially like getting the perspective of online resources like blogs and news stories, rather than really boring literature reviews and scholarly journals that I am usually forced to read at some point during each semester.”

The content of the social bookmarking account, however, was not warmly embraced by everyone. A few commented that they did not enjoy links to trade journals or news sites that required a separate login. A female graduate student in strategic communication requested, “If it’s possible, providing a class username/password for sites that require that information would be helpful because I wasn’t interested in filling out the information and having to sign up on another site.”

Students also noted that they valued knowing if others thought a particular link offered important information by looking at the links’ ratings. A female journalism student noted, “I like how it shows how many total users have saved a link to their own accounts.” Other students wanted to see a stronger rating system than Delicious.com provides. A female public relations undergraduate added that “it would be more beneficial if it showed how many people found that link useful and how many did not. Basically, I want to see an actual rating.”

In addition to the content of the bookmarks, the students also expressed advantages and disadvantages concerning the technology associated with social bookmarking. Students appreciated using the Internet-based application. This female public relations undergraduate said, “Using Delicious in the classroom setting is a great idea. Having an online database that I can access from anywhere to get the course readings is a great convenience.”

However, this was not the only benefit of using social bookmarking. The first research question found that most students were unaware of social bookmarking and Delicious.com. One female graduate student in strategic communication said, “I was skeptical about the Delicious account because I’m not the most computer friendly person, but it really lays everything out nicely and is similar to other sites and Web functions that I know.” An undergraduate media studies student noted that, “If you know how to use a search engine like Google or Yahoo, you can use social bookmarking to get the week’s readings.”

A female public relations student said, “I liked using the Delicious Web site. There is no confusion about where to find the information I need because of the tags. Everything was all in one place conveniently bookmarked.” The course account used tags, such as “ Blogging” or “Twitter,” so that students could click on that tag and retrieve all of the weekly readings. However, tagging did cause some minor headaches for students that created their own accounts to save the professor’s bookmarks. One female graduate student in English noted:

I feel like people should be able to create tags that are full phrases that don’t get broken apart. For example, if I were to search for “social media monitoring,” I would retrieve all tags that had the worlds “social,” “media,” or “monitoring.” And, that would pull up several links that aren’t relevant at all when I only want information about “social media monitoring.” I find that highly annoying.

Another female undergraduate studying interpersonal communication said, “you can save phrases by running all the words together like social bookmarking just take the space away like ‘socialbookmarking,’ but you can’t really make sure others are saving it that way.”

Despite these concerns about tagging, the students felt this technology was much easier to use than going through a system such as a course management system or the library’s e-reserve system. A male marketing undergraduate student said, “E-reserves are the best way for a professor to make sure I don’t

read the material.” His frustrations were echoed repeatedly by students who noted that “Delicious.com is way better than library e-reserves because that changes so much and a lot of times it doesn’t work right.” A male English graduate student preferred Delicious.com due to frustrations experienced as both an instructor and student:

I can’t count how many times I’ve had students go to my library e-reserve account for my English class to read a short story and then have them tell me it was “unavailable.” I’ve had similar experiences in my own graduate courses for journal articles that professors have set aside for our convenience. I think it’s a complete waste of teachers and students time due to the malfunctioning of the systems. Social bookmarks would be much easier since there’s no username or password needed. All you do is click.

Students, such as this female public relations undergraduate, noted that “Delicious is a lot quicker to access than the e-reserves, which requires numerous click-throughs and downloads to access one article. However, students, such as this female English graduate student who referred to themselves as “old-fashioned when it comes to course work,” found the technology to be cumbersome at times. She noted that “I’d rather look through a text book, highlight, underline, take notes, and put little colored sticky notes on pages than read an online book. To me, it’s just more hands on that way, and easier for me to retrieve the information I’m looking for.” A female undergraduate interpersonal communication student said that she enjoyed the Delicious.com account for the distance education course, but “if this was a regular classroom setting, I would like articles that are more printer friendly.”

Overall, students seemed to enjoy the account because of its underlying technology. This male sports management student said, “It’s really easy to use and it’s organized well. You can go directly to the links that you need to read, and you can also easily copy those links to your own delicious account making it even easier to keep up with them.”

In addition to bookmark content and technology, the scope of the material available generated vivid discussions about the use of social bookmarking in education. The first section of the research question noted that the content available was up-to-date and constantly changing. The scope of the information available was equally important to students. A female undergraduate in interpersonal communication said, “I’m glad that professors realize that there’s value in resources that aren’t textbooks or journal articles.” Another male public relations undergraduate agreed noting that “we all grew up with the Internet mostly. Blogs and online news are things we read regularly. It’s nice being able to bring that into the classroom.”

One female graduate student in strategic communication said:

The types of sites that are linked on the Delicious account are relevant and yet also ... cooler? I’m not sure of the word I’m looking for. It’s still important to read more scholarly stuff, but the news pieces, the tips and blog posts seem much more appropriate for a course like this that’s focusing on how technology can be used by organizationally.

Ultimately, this is a tremendous benefit for professors. The ability to link to current events and connect those issues to bigger theoretical concepts and illustrations of using social media techniques, for this particular course, helps solidify information in the students’ minds more than an outdated textbook or course packet could. As one undergraduate female education major said, “I knew a lot about how individuals use social media, but I hadn’t thought about organizations using it before. The examples in the Delicious readings helped me understand the strategies from the lecture even more.”

It is important to note that a social bookmarking account has to be created with the total amount of weekly readings in mind. Otherwise, it is possible to overwhelm students with the amount of information for the week. One male graduate student in sports management admitted that “It is sometimes overwhelming and intimidating to go through all the links and try to grasp the main ideas.” A female undergraduate in public relations added, “Even though it’s only a handful of links each week, I end up spending way too much time browsing when I click through the links for any particular topic and then explore what others have saved about that topic.”

Several students noted that information overload was a shared experience, and one female media studies undergraduate said, “I have to admit, I don’t take full advantage of [the class Delicious account]. I skim through the topics, but it’s hard for me to decipher through a lot of links on a computer screen.”

Although not falling into one of the three categories of content, technology, or scope, a handful of students expressed a desire to see one change in how the course's social bookmarking account was managed. One female undergraduate student in public relations said, "I think that one of the ways it could be used more is to make one for the course and allow everyone in the class to log in and upload relevant information and websites that could help us all learn." This approach would allow students to experience searching for and adding new links to the course readings, but it also risks severe information overload if every student enrolled actively participates in the account's management.

### Discussion and Conclusions

Considering all the comments expressed by the students, it appears that using social bookmarking in an educational setting, particularly online learning and distance education courses, is a positive approach to enhancing students' learning experiences. Even though the students that participated in these online focus groups largely were unaware of social bookmarking prior to the start of the "Social Media and Public Relations" course, the vast majority felt it was a worthwhile experience afterwards. Based on the focus group findings, social bookmarking was preferred over printed coursepacks, course management systems, and library-based e-reserves accounts. This preference emerged based on a variety of factors, including cost, the provision of relevant and up-to-date information, the ease of social bookmarking technology, and the broad range of materials available via the Internet that can add to the educational experience.

Given the significant amount of students unaware of social bookmarking, it can be assumed that some educators are also unaware of the topic. For this reason, it is necessary to briefly outline how to establish a social bookmarking account. First, it is helpful to have a variety of links already in mind that can be shared with students, research and teaching assistants, or other faculty members. This list could be created from scratch, or it could be an existing Internet browser list of favorite sites. Next decide which social bookmarking service offers the desired options desired. While not the purpose of this paper, it should be noted that resources exist to compare and contrast the leading social bookmarking services (Pandya, 2006; Hammond, Hannoy, Lund, & Scott, 2005). Once a service is decided upon, join the site by providing personal contact information or by merging existing free e-mail accounts with the site (e.g., Delicious.com is a Yahoo! company). Depending on the service, there are a variety of ways to create the links to share either through automatically copying an existing list or manually copying and pasting URLs into the directory. Once the links are in place, it is imperative to label, or *tag*, the links so that they can be easily accessed by your directory of tags.

With an account established, it is easy to use social bookmarking to help reinforce course learning objectives. For example, each lecture session or each week in the semester could be affiliated with a particular tag that is shared on the syllabus so that students can read the material ahead of time. As the students noted, these readings could be current events that echo the bigger principles of the course material or they could be tips and hints that help with completing course assignments.

Social bookmarking sites can be more advantageous for sharing reading materials than using closed course management systems (such as WebCT, Blackboard, D2L, among others) provided by schools in that they easily allow for further investigation on a topic of interest or a topic with which the student is struggling and provide students with skills they may find useful in their chosen career. With sites such as Delicious, students can easily navigate information on the topic that was tagged by others, not just the professor, thereby gaining additional depth and viewpoints. In addition, students can quickly tag and add content they find relevant thus promoting further interaction and participation. Finally, many organizations are expecting their new employees to be up on technologies and how to incorporate them in day-to-day operations. With the students being able to work with social bookmarking in a classroom environment, they may feel more confident when asked to operate the sites in a work setting.

Grosbeck (2008) suggests that faculty members create an account for the entire class using a common user name and password, divide the class into groups, and then assign groups different weeks or lectures throughout the semester that they are responsible for uploading different links to the class account so that it reflects the students as well as the educator adds. These small groups, or learning communities can help create a solid understanding of the benefits of social bookmarking because it requires that they be an active participant rather than solely clicking on readings passively. The contribution of and tagging links is a constructive cognitive activity that engages students in the learning process. This can only bring benefits to students who have problems learning and have difficulty in organizing materials (Martin, 2008).

Grosbeck (2008) suggests that educators not only use social bookmarking accounts to provide course readings, but also create assignments using the social media technology. Possibilities for assignments include researching how information is stored and shared on the sites (e.g., how do people categorize materials) and what do social bookmarking accounts with large followings have in common with one another (e.g., notes about links, tags, rating systems). The "Social Media and Public Relations" course that the participants in the focus groups completed had a social bookmarking assignment where students had to create an account for an organization of their choice and then create a tagging directory that represents 100 links of a variety of information relevant to the organization's stakeholders.

Regardless of how social bookmarking is used in an educational setting, its usage contributes significantly to the learning experience by exposing students to a technology which they have had little exposure. While students may be more familiar with more well-known social media applications, such as blogging, video-sharing, and social networking sites, Delicious, Digg, StumbleUpon and other social bookmarking services provide unique contributions for students. Through the provision of extremely up-to-date information and practical readings, the students in these online focus groups embraced the technology despite a few hiccups involving the difficulty in taking notes on a Delicious account and feelings of information overload. Perhaps the social bookmarking experience is best summed up by this female public relations undergraduate:

When I saw that we would be using social bookmarking in the course, I was ready to drop the class. I didn't want to have to learn another social media platform. But, I decided to stick it out and at least try it. And, I'm glad I did. I wish more professors would use social bookmarking. I can access the account from the library, my dorm room, my parents' house, and anywhere in the world. I've created my own account and have saved information from this course to use later because it made class lectures relevant to what I want to do after graduation.

As of the writing of this article, sites such as Delicious, Digg and StumbleUpon are still prevalent modes of sharing and tagging links. While Stumble Upon has a higher Alexa ranking than Delicious, there does not seem to be an influx of new social bookmarking sites stepping up to create a situation such as MySpace faced by being ousted in popularity by Facebook. However, as tools become integrated in browsers and e-readers, the popularity of specific social bookmarking sites may wane. Even if those sites do drop in popularity, the concept of tagging and sharing information is around to stay.

#### *Limitations*

This study, like others, suffers from some limitations of methodology and design. First, the results reflect the opinions of a single group of students in a single course at a single university. While the findings do indicate the thoughts and feelings of that sample, they may not be generalized across different populations or universities. Additionally, although member checks were done to ensure that students' words were interpreted and used appropriately, the nature of focus groups may have caused some students to remain silent if they disagreed with the prevailing attitudes. However, the online nature of the focus groups and encouragement of the moderators helped ensure that some students, who disagreed with the positive comments about social bookmarking, could speak out and remain anonymous.

#### *Future Research*

Future studies should investigate responses received regarding social bookmarking with a larger sample size across majors and universities. This would reveal whether thoughts and opinions are localized by geographic area and major. Additionally, it may be beneficial to poll professors concerning their use, thoughts and opinions of social bookmarking sites thus providing a picture from a faculty perspective.

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