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Implications of social media use on instruction and student learning: An exploratory study

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ABSTRACT

Despite being a norm in contemporary organizations including in academia, there is limited understanding how multimedia technology use might impact learning. We have also seen a rise in the use of social media applications such as Facebook, tweeter, Instagram, skype, flickr, and blogging among students, but it is unclear the extent to which the academe embraces these applications. In this study, we examine the potential role of multimedia technology and social media use in the learning process. We explore the potential implications for instruction and on student learning of the marriage between multimedia technology and social media use. Focusing on the content delivery component of instruction, we explore potential relationship between the rich multimedia content in Multimedia Information Networks (MINets)-- the structured media collections such as documents, images and videos that are linked by nodes, and the ongoing developments in social media to the learning process. We propose a framework that links instructor to students through social media-- supposing that learning impacts of social media depend upon the interface of the content, particular medium adopted, instructor and student demographics including learning style, teaching style and instructor skills. That is, social media becomes a channel through which learning occurs. Classifying multimedia technology as tools and social media as interactive Web 2.0 Internet-based applications, we employ case studies in developing the framework and we follow up with a discussion of potential implications of social media applications in academia.

INTRODUCTION

Content delivery is a major component of instruction in learning institutions from elementary school to higher education. Indeed, teaching or instruction may be viewed as a systematic delivery of content for mastery. The purpose of instruction is the delivery of content to enable knowledge conveyance from instructor to student. Its effectiveness depends upon instructor and student factors, delivery medium, the learning environment and the nature of the content to be delivered. Incessant attempts to improve learning involve developments in all these elements. For instance, accrediting bodies such as the Association to Advance Collegiate Schools of Business (AACSB) requires programs to demonstrate continuous improvements in processes as well as in the achievement of specified learning outcomes in ways that involve these elements. Programs attempt to indicate: Continuous improvements among engaged faculty who employ effective novel pedagogical approaches, well-rounded and involved students who are exposed to a variety of learning opportunities, enhanced and vibrant learning environments, innovative modes of content delivery, relatable contemporary contents, etc. (e.g., BizEd, 2017).

Modes of instruction delivery continue to evolve at an accelerating rate due to incessant advances in technology. For instance, the smart classrooms that are equipped with state of the art multi-media technology give instructors a wide range of options to suit nearly every instruction style. It is normally left to instructors to decide "what technology" to employ. In fact technological advances have widened the communication gap between instructor and students (Griffin-Famble, 2006) in ways that might impact learning. Walsh (2012) identifies some emerging instruction technologies that might impact learning such as the flipped classrooms, smart phones, Cloud apps for file storage, note taking and more, learning analytics and the list continues to grow with time.

In the recent past, a wave of social media use and its overwhelming popularity, especially among the Millennial, raises the question of how/whether to integrate this technology in the

curricula. Key challenges are how institutions can assess instructor social media skill set and the 'gap' that may exist between these and students' skills, and how to manage this gap. Without disregarding these challenges, we propose a framework for social media technology as medium for content delivery. The proposed framework aims at embracing the benefits of engaged students through social media while by-passing potential instructor-student social media gap and non-education related elements of social media. When fully developed, the model could enable instructors to identify types of social media that are compatible with specific content so they can determine how, when, and where it might be used in the learning process.

We have divided this paper into four sections. In the first section we discuss the basic definition of social media technology and we provide some examples of the same. In the second section we discuss each of the social media technology addressed in the first section with examples of applications according to literature. We follow with the development of the proposed framework in the third section and we suggest ways that social media might help instructors expand learning space outside the classroom while increasing student engagement. We conclude the paper with a discussion of the need for comprehensive survey of the status of social media applications in academia.

Social Media Technology

There is no standard definition of Social Media Applications or Social Media Technology since these continue to evolve and their uses change and expand over time. However, it is generally agreed that Social media consists of various user-driven (inbound marketing) channels such as Facebook, Twitter, blogs, and YouTube (Cohen 2017). For this study social media technology is defined as the integration of user-driven media applications such as Facebook, Tweeter, WhatsApp and such, and the platform necessary to run these applications such as the Internet browser. Thus, Twitter could be run on a Google chrome browser on a Windows or Mac system. Social media technology provides means for users to add contents and exchange these contents with other users for social or business applications. Such applications enable creation of a social network site (SNS) that connects users with each other for information sharing. Since introduction, SNSs such as MySpace, Facebook, Cyworld, and Bebo have attracted millions of users, many of whom have integrated the use of these sites into their daily practices (Boyd and Ellison October, 2007). We expect SNSs, particularly Twitter, the seeming preferred medium of communication in current high political circles, to continue to play influential role in society.

Social Media Technology use for learning

We confine our definition of social media as any technology that allow users to create, share and exchange contents within the constraints and capabilities of each type of platform. In this respect, the terms social media sites, applications, platforms, and technology are used interchangeably as long as the specific purpose for which each of these technologies are aimed are included in their definition. We sample Facebook, Twitter, Instagram, LinkedIn and Pinterest as the social media applications to help illustrate the proposed learning framework and we discuss their implications for the curriculum.

Facebook

Although it is primarily viewed as a social application for private use, users do employ Facebook in the context of work, to take a mental break on the job or to seek out employment. The use of Facebook for academic purpose is open to debate though its basic architecture embodies

relationships that can be adapted to facilitate elements of e-learning such as the incorporation of social networks in the classroom (de Villiers, 2010). Facebook is particularly suited for distance learning since it enables student contact with colleagues (ibid). It can also be a productive tool in facilitating certain skills among learners. For instance, in their study of Facebook use and writing skills, Ponnudurai and Jacob (2014) found indications of a positive correlation between writing online via Facebook and reduced anxiety levels, whilst resulting in overall positive attitude towards the use of Facebook in the course. Similarly, Michikyan et al. (2015) study that employed a mixed-methods approach to examine the relation between online academic disclosure and academic performance revealed that academic performance may determine college students' Facebook use, rather than the reverse. These studies suggest that employment of social media applications such as Facebook in certain classroom practices might enhance learning.

Regarding student factors, we also find mixed indications. For instance, in their study of personality traits of students on their presence on Facebook, Rouis et al. (2011) concluded that trust determines use of the Internet but does not impede Facebook usage. The study also found that self-regulation and performance goal orientations characterize students who are more in control of their social activities, which in turn limits the apparent negative effect on their academic performance. Similarly, Ketari and Khanum's (2013) study of the impact of Facebook usage on academic grades found slight indications of adverse effects. The study showed that 55% of the students surveyed felt that the use of Facebook or Social Networking Sites (SNSs) had adverse effects on their academic performance. However, the study did not specify the percentage of time students used Facebook for academic purpose. Though limited, this literature seems to indicate that the use of Facebook for academic purpose needs to be guided and carefully managed for students to reap learning benefits of such usage.

Though limited, the interface with Facebook provides tale-tale pointers that, as in all areas of their lives, students experience include traces of their academic journey online. Instruction can harness these interactions on students' online social spaces for enhanced learning. There is need for research to review the nature of learning activities online, the extent that SNSs applications might enhance or hamper learning, and ways in which learning institutions might harness SNSs to improve learning experience. In this regard, Vivian et al. (2014) study of 70 university students' use of Facebook over a 22-week study period is in a positive direction. Despite the scanty literature and findings that might be spurious at best, there are pointers that the use of Facebook is positively linked to academic performance of students who manage their social activities effectively but is adverse otherwise. It appears from this limited literature that the use of Facebook in curricular requires careful evaluation and learning institutions need to exercise care in harnessing these SNSs to minimize potential adverse effects on learning.

Twitter
Twitter is a free social messaging service for sending and receiving short messages in real time (Walker 2011). 'Tweeting' is about broadcasting daily short burst messages with the hope that the messages are useful and/or interesting to someone (Gil 2016). It is used for self-promotion, work promotion, literary resource, news, jobs, events, teaching, research, and social networking (Scoble, 2015). Recent developments in Twitter enable users to link pictures, quoted tweets and handles without breaking the 140-character limit (Iber, 2016), features that could make it a potentially versatile productive educational tool. For instance, instructors can share with students their online reading links with highlights and short comments (ibid). They can also enhance collaborative

learning habits among students through Twitter. Accordingly, students can share material that pertains to class content through Twitter.

In his blog, Llorenz (2014) suggests certain strategies and tactics for integrating Twitter into the coursework. Samples include: assigning appropriate course #hashtags, providing training on Twitter and the twitter language, providing glossary, identifying influencers, integrating external speakers on Twitter, live tweeting lectures, releasing course material and resources on Twitter, and involving students in documenting/gathering new developments and trends. For such suggestions to work in nurturing the knowledge creation endeavor, institutions need safeguards and boundary guidelines that protect freedom of expression and allow flexibility and idiosyncrasies among their constituents. Such structure can help delineate the difference between use of Twitter as a general-purpose social media tool and its academic use (Marshall, 2015). Accordingly, interactions through Twitter would complement educational experience and expand learning space outside the classroom (Hawks, 2012)).

Higher education generally has an ambiguous relationship with email communication. While some instructors use it for class communication, some discourage its use because it is time consuming, clogs systems and is disruptive. Twitter can be used to supplement class communication and due to its brevity and purpose specificity, properly used Twitter can help reduce the load on email communication with students. Chapman (2015) provides findings by researchers who investigated the use of Twitter in the classrooms that encourages instructors who are curious about using Twitter to enhance the students' learning. Although her review sets a positive tone for Twitter use in the classroom for most disciplines, Marshall (2015) cautions that extreme care is needed for Twitter use in coursework. Clearly, further research is needed to help our understanding of the potential for Twitter as a learning tool.

Instagram

Instagram is an online photo-sharing and social networking app that launched in 2010. It enables its users to take and share photos publicly or privately on the app as well as other SNSs. According to Kirst (2016), Instagram is the most popular social network for American teens that can make the educational process unique, interesting, and insightful. Among the list of reasons for using Instagram, Kirst suggests that it could help promote creativity, could improve tech-savviness, point users to *gurus* who might inspire one, help improve outcome from online studying, and virtual team building. Lytle (2012) reports feedback from graduates and university officials about the benefits of using Instagram in their programs. According to the report, three ways emerge of how educational institutions employ Instagram to connect with their audiences: asking questions, feeding other social networks, and encouraging participation during major events. The report indicates that alumni believe in Instagram as a good tool for connecting with their universities.

Phillips (2013), the educational blogger for EmergingEdTech, also provides some uses of Instagram in education; suggesting that it can enhance spatial, linguistic, logical mathematical, interpersonal, intrapersonal intelligences and iPhonegraphy in art and photography classes. Similarly, Leishman (2013) and Hudson (2014) also discuss how colleges and universities could employ Instagram. The MIT social media strategist, Leishman, argues that Instagram allows one to show different points of view, review history, and to showcase facilities, students, and alumni. She suggests that universities might consider employing Instagram to introduce *fun* to enliven sober university enclaves, start hashtags, spotlight (permitted) photos, challenge followers, share quotations, celebrate special days, direct focus on details, capture extraordinary moments, etc.

These suggestions indicate the potential for Instagram for enabling enriched and improved communication among administration, alumni, instructors and students in ways that can enhance the learning environment. That is, Instagram can become useful as an extension and an enhancer to other social media tools such as Facebook and Twitter in improving the education process and potential students' learning experience and ultimate performance.

LinkedIn

LinkedIn is a social network for professionals that was founded in December 2002 and officially launched in May 2003. Defined as a social networking site designed specifically for the business community, LinkedIn connects professionals with each other and allows for exchange of knowledge, ideas and employment opportunities (Rouse, 2016). It also provides professionals with avenues for promoting personal brands online (Loretto, 2016). Since LinkedIn provides access to employment prospects, it can be used for preparing students for internships, scouting for placement for graduates and alumni, and for effective HRM training purposes (Kane, 2013). According to a Pearson survey, a majority of Faculty agree that online and mobile technologies create a better learning environment but due to privacy concerns, most do not use such social media as LinkedIn for classwork (Nouraini, 2014; Seaman and Tinti-Kane, 2013). Indeed, the survey indicates that faculty are somewhat more likely to use blogs and wikis on a daily basis (6.3 percent) than they are to use LinkedIn (3.3 percent) (Seaman and Tinti-Kane, 2013). There are indications that higher Education trails other sectors in the use of LinkedIn and there is a need for these institutions to revamp efforts at training and encouraging students to use the tool (McKenna, 2015). In fact, McKenna suggests that offering courses that suitably address/capture contemporary issues and technologies such as LinkedIn, Excel, Google Docs, Evernote, MailChimp, WordPress and other digital tools could enhance student preparation for jobs in sales, marketing, finance, operations and HRM. Strategic integration of LinkedIn and other network tools in college courses can enhance employment prospects in a crowded job market.

Pinterest

Pinterest is a media platform where users can upload, save, sort and manage images and other media contents (*pins*). It is broadly defined as a web and mobile application firm that operates a photo sharing website. According to a teachthought (2012) report, several college faculty use Pinterest in their classrooms. In one case, a digital and online media college professor is shown demonstrating to students how to use Pinterest for producing web content. Another case has a college professor employing Pinterest for students to find boards for specific classes or groups. In some colleges students are required to employ Pinterest to add a new element to create text and multimedia for a class blog in a semester-long project. Staff writers at Best Colleges Online.com provide sample ideas for using Pinterest for class activities such as instructors having students *pin* ideas on a board that relate to specific planned projects. In Rao (2012) we find sample ideas for using Pinterest such as students creating research boards for sharing relevant articles, images, and videos related to classwork or creating boards where multiple group members can post elements of a class project. Since it is a third-party platform and all *pins* may not be safe or secure, caution and close monitoring is necessary so students avoid stumbling upon inappropriate content (ibid).

Proposed Framework

We have discussed potential employment of several social media applications from Facebook to Pinterest as coursework tools for enhanced student learning. In this section we discuss a proposed framework that envisions social networks as medium for instructional content delivery. Figure 1 shows the proposed framework that captures key elements of the learning environment: Social media application, instructor factors, student factors, multimedia technology, instruction process, and content. Each element of the framework has impact on student learning. Therefore, it is imperative that we understand the implication of each so these can be managed accordingly to effect learning.

In academe timeframe, social media is a relatively new factor in the learning process whose role is still unclear. Therefore, we deliberately limit the scope of this paper to the social media applications such as those discussed above. Presently, there are more social media applications such as Google+, YouTube, Tumblr, Vine, Snapchat, Reddit, Flickr and so on (Moreau, 2016) that we have not even touched on. We focus on just a few social media applications to demonstrate how the medium can function for instruction content delivery for learning enhancement. We believe that any social media application that adheres to the tenets of these tools as we know them presently—sharing text and audio-visual imagery or representations, is likely to fit in the proposed model. The proposed model provides for social media application as a channel that facilitates conveyance of instruction content from instructor to students. Therefore, we shall discuss elements of the learning process as depicted in Figure 1.
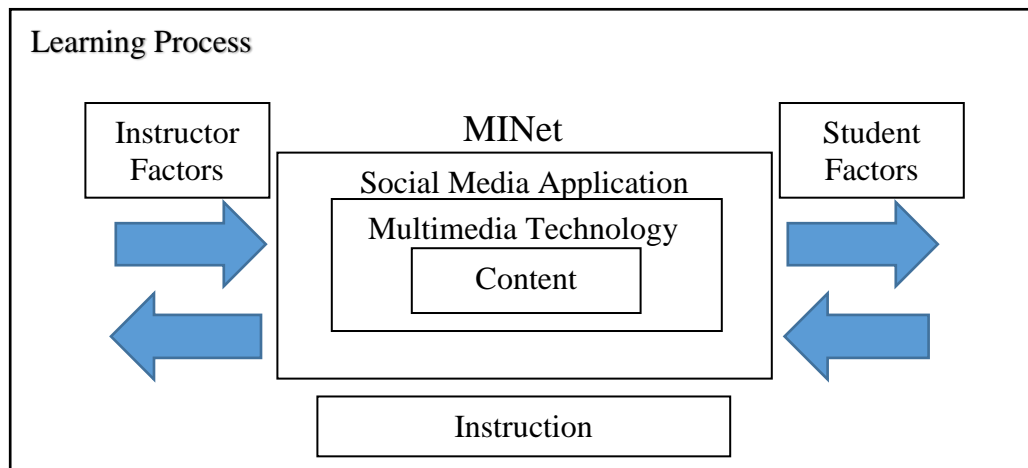

Figure 1: Learning Process and Social Media Applications Framework

Instructor Factors:

In most learning situations, instruction is highly dependent on the instructor. That is why higher educational institutions, particularly those that hold some sort of accreditation, insist on the most qualified and competent instructors. This trend is not just apparent in the Western or developed economies only but even emerging and developing economies such as those in Africa, like in Kenya, are following similar trends by instituting rules and policies that limit instruction at universities to be delivered by PhD holders only. The logic underlying this trend is that instructors be sufficiently competent to be relied upon to 'deliver' the right kind of instruction that results in optimal learning. Our proposed model honors this thought and provides for required weight to be

given to instructor factors. It is imperative that instructors have proper training and skill sets to be able to leverage the use of social media tools for enhancing student learning.

Instruction Content:

Multimedia Information Networks (MINets) arose from the influx of web images and the popularity of online community as a result of overwhelming growth of various forms of social media such as Facebook which host billions of images that are linked to each other via users, groups, and tags. Despite such increase in general usage, the relative newness of social media in academia means that we have limited data or awareness of impacts and potential implications on student learning. However, given that content delivery is a major component of instruction, the MINet technology invites the academia to leverage these forms for content delivery and knowledge transfer. The proposed framework envisions social media as a channel for content delivery that can enhance student learning.

Although there may be overlap with the nature of content that can be placed on social media, each application is suited for certain content type for which they were developed. For example, both Pinterest and Instagram are visual-sharing social media applications where one can upload and share photos and images with others. However, the difference lies in that Instagram is about sharing user's own photos whereas Pinterest is about sharing curated photos from the Internet (Zimmerman, 2015). This distinction is important for instruction that involve photo sharing so users (e.g. students) get specific instruction on the contents and the appropriate corresponding social media application employed. It is also noteworthy that in some instances in disciplines such as photography, the distinction between content and social media mode of delivery may be unclear. In such instance, social media particularly lend themselves not just for content delivery but as part of the content. We suppose that a mapping of the learning process on the proposed framework can help unravel how social media, acting as a channel for content delivery, can help improve learning outcome. However, it is critical that we remain realists that no amount of tinkering with the delivery channel is going to absolve from the quality of pedagogy and the content. It is also possible to match specific social media application with corresponding content type and treat each pair as independent variables so we might study their influence on the learning process and subsequent impact on learning outcome.

Student Factors:

If instruction is highly dependent on the instructor, then it is highly targeted at the student. The student ultimately determines whether learning has occurred. It is therefore critical that we understand who our students –the Millennials, are. Quite a bit has been noted about the Millennials, who happen to be known as *digital* natives for whom social media is as valid life and learning tool (Nevid, 2011) much like the lecture theater/hall was in the past. It is our contention that if social media plays such a prominent role in student lives then we are obligated to embrace the tool and use it effectively to enhance student learning. Viewed as a tool—a proposed channel for content delivery, social media does not replace content and neither does its use absolve the instructor from pedagogical responsibility. Rather, it should help facilitate effective pedagogy that results in improved learning outcome among the Millennials.

Millennials are also famed as active learners with proclivity to community, features that lend social media use a more 'natural' choice for certain content delivery than the traditional lecture/discussion delivery mode. For instance, in teaching about the HRM function of recruitment, having students role play and engage in actual 'recruitment' of their colleagues based on their

colleagues *web prints* or otherwise (presence or absence on various social media sites) can be more memorable and an effective approach than a lecture of the same. The proposed model focuses attention on this fact—that social media should be viewed as a learning facilitation tool that releases instruction time and space so instructors might focus on developing effective pedagogy and quality content.

Conclusion

In this paper we propose a framework that views social media as a potential channel for instructional content delivery that can help enhance student learning. We provided a brief discussion of various social media applications and some suggestions for incorporating each of these applications in the classroom. The study emphasizes the role of instructor in effectively utilizing these applications in their classrooms to enhance students learning. It is assumed that, being *digital* natives with propensity toward self-directed learning, millennial students already embrace social media applications in their lives. It seems a waste of natural experimental opportunity for instruction to ignore this phenomenon. It is our opinion that the role of the instructor should be to explore the potential of these channels for effective delivery of quality content for expanded learning space and enhanced learning.

It is important to acknowledge that institutions may have to manage social media applications gap that might exist between students and instructors that might impede learning otherwise. If instructors are unable/unwilling to cope with developments in the use of social media applications then it is possible that the gap with their social media savvy digital native students might persist, and that can compromise learning. On the other hand, adventurous instructors who are willing to utilize opportunity that social media presents for improved content delivery, might reap enthusiastic and engaged learners. At the moment, we have anecdotal evidence that social media use might impact learning but we lack a comprehensive map of the situation. We need a survey of how institutions of higher learning address social media applications and some potential insight on student learning.

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