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Exploring the Relationship Between Student Engagement, Twitter, and a Learning Management System: A Study of Undergraduate Marketing Students

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Because student engagement is believed to be a predictor of academic achievement, there is significant interest in discovering methods that will improve and increase student engagement at all levels of education. This study investigated the relationship between digital and social media usage and student engagement. In particular, this study sought to investigate how adding (1) a learning management system (LMS) and (2) a dedicated marketing Twitter feed influenced the self-reported engagement levels of undergraduate marketing students. The results show that students were more engaged when the LMS and Twitter feed were used. Specifically, Twitter usage had a positive impact on engagement with a marketing course while LMS usage had a positive impact on engagement with the School of Business. Seniors significantly used the LMS more than underclassmen but there were no differences in Twitter usage between these groups. The results also showed that students were most engaged with their marketing course, followed by the College, and the School of Business respectively.

Introduction

Digital and social media are increasingly important topics for marketers. For example, more than three quarters of marketing practitioners report that they regularly use social media in their work (Gil-Or, 2010; Smith, 2011). Organizations are seeing solid return on investments from making contact with the customer via social media (Okazaki, Katsukura, & Nishiyama, 2007). Despite the widespread usage of digital and social media marketing among marketing practitioners, there is little usage of digital and social media within the marketing classroom (Finch, Nadeau, & O'Reilly, 2013).

This study sought to explore how educators might close this usage gap by exploring how digital and social media tools can be applied to the marketing classroom. In particular, this study incorporated a (1) Twitter feed and a (2) Learning Management System and assessed the possible relationship with self- reported student engagement levels. This study also sought to provide insights and information about adoption and usage of these tools, to assess student engagement on multiple levels, and to evaluate differences among different student populations.

We begin by describing student engagement, Twitter, and learning management systems. Next the article discusses the research method, followed by the data analysis and findings. Last, the article discusses the conclusions of the study and provides recommendations for using Twitter and a LMS to improve and increase student engagement.

Student Engagement

Alexander Astin wrote perhaps the seminal piece on student engagement which he originally termed "involvement." He defined the concept as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 518).

Astin provides some specific forms of involvement that include where the student lives, the amount of time a student spends studying, student interaction with faculty, and athletic involvement. The conceptualization of student engagement has been researched and undergone modification and refinement since 1984. Engagement remains a somewhat ambiguous term, without a uniformly accepted definition within the literature. However, commonalities exist among the different conceptualizations. An engaged student has been described as one who makes a psychological investment in learning and strives to learn (Newmann, 1992). Additionally, Kuh (2009) states that engagement can be described as the time and effort students invest in educational activities that are empirically linked to desired college outcomes. Furthermore, McCormick, Kinzie and Gonyea (2013) posit that student engagement could be described as a student's exposure to, and participation in, effective educational practices in use throughout their college experience.

Research over the last 30 years has shown positive associations between engagement and desired college outcomes (Kuh, 2009). More specifically, research has discovered relationships between technology use and engagement (Junco, Heiberger, & Loken, 2011). Because researchers have shown that student engagement can be a predictor of academic achievement, there is significant interest in discovering methods that will improve and increase student engagement at all levels of education (Marks, 2000). Getting students more involved in a course has been reported as one method to improve the level of student engagement (Handelsman, Briggs, Sullivan, & Towler, 2005).

In recent years higher education has experienced a notable shift away from "teaching as instruction" towards "student centered learning" (Jonassen, 1994; Trowler, 2010). The explosion of web-based technology has created new platforms that have helped to fuel this shift away from the instructor as the sole knowledge delivery mechanism toward a more collaborative model that allows students to contribute, create, and distribute knowledge (Cole, 2009). These activities can take place both in class and while the students are away from the classroom, thus creating a learning community that is not completely dependent on the instructor. One platform that can facilitate this around the clock active learning is the popular microblogging platform Twitter.

Twitter

Twitter is a microblogging social media platform. It is similar to text messaging but each message is limited to 140 characters. Twitter users can follow other Twitter accounts and can also allow their accounts to be followed by other Twitter accounts, thus providing quick and easy interaction among message generators and their followers. Even with the limitation of 140 characters, tweets can contain URLs that link to articles, graphs, pictures, videos, etc. In a college-level class this substantially increases the usefulness of the Twitter platform. Within a short message, a professor can direct students to additional material that may enrich the course, remind students about upcoming projects, or invite students to share their opinions about a topic that is salient to the course(s).

Pew Internet Research indicated that in 2012, 26% of internet users aged 18-29 used Twitter, which was almost two times the rate for those age 30-49. Among younger internet users (age 18-24), 31% were Twitter users (http://www.pewinternet.org/2012/05/31/twitter-use-2012/). A 2013 Pew Internet Research survey found that Twitter still had a particular appeal to younger adults (http://www.pewinternet.org/2013/12/30/social-media-update-2013). These younger adults, also known as Millennials, have been immersed in technology since elementary school and are often referred to as "Digital Natives" (Palfrey & Gasser, 2013). They have a desire to form communities that are active with discussions and information, thus they gravitate to web based platforms where this occurs (Williams, Crittenden, Keo, & McCarty, 2012). Today's college students desire personalized technology, constant synchronized connection, immediate communication, and social interaction (Fructuoso, 2014; Veletsianos & Navarrete, 2012).

Undergraduate college students are commonly already engaged on the Twitter microblogging platform. Therefore, Twitter seemed a prime candidate to explore with respect to the relationship it might have with student engagement with the course, the school, and the college. Furthermore, Twitter is an emerging tool of businesses and marketers. Many firms maintain Twitter accounts and incorporate these accounts into their marketing efforts (e.g. @deltaairlines, @WholeFoods, @Target). Therefore, Twitter can be used to improve and enhance marketing education by demonstrating emerging marketing practices and how firms are using new technology to further their tactical and strategic marketing plans (Hannon & D'Netto, 2007). Thus, Twitter is frequently viewed as an emerging ICT (Information and Communication Technology) in higher education (Fructuoso, 2014; Junco et al., 2011).

Learning Management Systems

Learning Management System(s) (LMSs) have been adopted by many universities around the world (OBHE, 2002). Within the United States, over eighty percent of colleges and universities use a learning management system (Harrington, Gordon & Schibik, 2004). Usage of LMSs is expected to increase as universities try to accommodate today's students who expect a technologically rich learning environment (Lowry & Flohr, 2004). A LMS can be defined as an enterprise-wide and internet-based system that integrates a wide range of pedagogical and course administration tools (Coates, James, & Baldwin 2005). Some examples of LMSs are Blackboard, Moodle, Desire2Learn, Learning Space, and Next Ed.

LMSs are designed to provide a medium where faculty and students can communicate. Most LMSs include communication tools, course content tools, student assessment tools, and a gradebook tool (Costen, 2009; Morgan, 2003). The course content tool allows faculty to upload documents such as syllabi, assignments, and readings. The communication tool allows faculty to communicate with students and students to communicate with other students. The typical communication tools include email, discussion boards, and chat rooms. The student assessment tools allow faculty to administer quizzes and exams to students using any computer. The assessment tool also allows faculty to grade assignments and provide written feedback to students. The gradebook tool allows faculty to post grades for exams, assignments, and activities. With this tool, students are aware of their grades in real time.

Usage of a LMS and its tools can provide many benefits to both students and faculty. First, LMSs provide access to course materials and assist in creating a virtual learning environment for both online and traditional courses (Hershey & Wood, 2011). Second, LMSs make it easier to disseminate information and communicate with students (Harrington et al., 2004). Many college professors use their school's LMS to

distribute documents, issue assignments, and assign students to groups as well as other administrative tasks. Third, LMSs can facilitate asynchronous collaboration among students (Hershey & Wood, 2011). Via LMSs students can meet online and interact with other students. Fourth, LMSs can provide a permanent record of student grades and graded activities and/or assignments. Students can assess their overall performance in the course at any time. Last, LMSs can help students feel more satisfied with a course because their expectations about computers and technology are being met (Green & Gilbert, 1995). Because of an "information age mindset" many traditional students have an expectation that advanced technologies will be used in the classroom (Frand, 2000).

In addition to the capabilities and benefits of LMSs, research has shown that LMS directly impact student outcomes. Research studies on LMSs have shown that they increase student involvement (Stith, 2000) and deepen the learning experience (Carmean & Haefner, 2002). Research has also shown that LMSs improve teaching and learning (Coates et al., 2005). Other studies on LMSs have shown that LMSs enrich student learning (Gillani, 2000) and help students develop a sense of community with other learners (Al-Busaidi, 2012). Overall, the effects of LMS usage are very beneficial to the student.

Because of the many benefits discussed previously and because of the widespread adoption of LMSs among many universities around the world, we chose to explore the relationship between a LMS and Twitter with respect to the relationship they might have with student engagement with the course, the School, and the College. Research on the pedagogical effects of LMSs is somewhat limited, and this study seeks to fill this gap within the literature (Coates et al., 2005).

Purpose of the Study

Prior research has demonstrated a robust linkage between student engagement and student success (Kuh, 2009; Pascarella, Terenzini, & Feldman, 2005). Additionally, the proliferation of Web 2.0 social media platforms and mobile devices with internet connectivity have made today's college students more connected than ever before (Fructuoso, 2014). It seems prudent then that scholars and teachers who are interested in student success investigate, from the student's perspective, how these phenomena may interrelate. Furthermore, due to the rapid growth of business spending on the social media component of the marketing mix, it seems imperative that social media use and participation find their way into today's college classrooms (De Vries, Gensler, & Leeflang, 2012).

The intent of this research was to explore the following questions.

1. *Usage of Twitter*: What percentage of students followed the class Twitter feed? How many were frequent users of the dedicated Twitter feed? Are there differences in Twitter usage among different types of students?
2. *Usage of LMS*: What percentage of students used the class LMS? How many were frequent users of the class LMS? Are there differences in LMS usage among different types of students?
3. *Student Engagement*: How engaged were students with the marketing course, the School of Business, and the College? Are there differences in student engagement among different types of students?
4. *Relationship between Twitter and the LMS with student engagement*: Is there a relationship between Twitter and/or LMS usage and student engagement? Does Twitter usage have a stronger relationship with student engagement than LMS usage, or does LMS usage have a stronger relationship with student engagement than Twitter usage? Were students more engaged if they used both Twitter and the LMS?

Method

Three marketing courses at a small southeastern college were utilized for this study. No student was in more than one section, so there were no duplicate research instruments submitted. During the first class of the semester, after a course introduction and a review of the syllabus, the students were informed that the professor would be an active user of the LMS constructed for the course, including the gradebook module. Students were encouraged to visit and explore the LMS site before contacting the professor with any questions. The students were then informed that a Twitter feed had been created for all of the instructor's classes, and the Twitter handle was written on a dry erase board in front of the students. The students were told that participation and interaction with the Twitter feed was voluntary and that all official communication would also be communicated via the campus email system. The Twitter handle remained on the board for the rest of the class (approximately forty five minutes) and was erased at the end of the class session. This procedure was repeated in all three marketing classes on the first day.

During the semester, the instructor actively used Twitter and generated 587 tweets. The instructor tweeted about the following items: (1) marketing in general, such as tweets about the most popular ads of the week or a retailer's latest online marketing strategy; (2) student-related tweets such as congratulations to

students about awards or sports victories; (3) business such as the latest unemployment figures and closing stock market numbers; (4) college related tweets such as upcoming campus activities, campus photos, and weather announcements; (5) marketing tweets specifically related to current course content, such as pictures of store brands while branding was being discussed in class, as well as reminders about upcoming exams and grades posted; (6) and career information and advice such as job postings and resume tips.

During the semester, the instructor also actively used the LMS in each marketing class. The instructor actively updated the content, posted unannounced bonus opportunities, and shared job postings. The instructor also posted visuals and lecture materials in a timely manner. The LMS gradebook was used throughout the semester so students could see their current grades. The instructor also tried to direct students to the LMS via email and via the Twitter feed with announcements about upcoming readings, access to recent exam scores, and other course related items that were available on the LMS. The instructor tried to make the LMS as active, useful, and accessible as possible given the constraints of the college and the LMS platform.

On the last day of scheduled class, the research instrument (see Appendix) was distributed and collected by a student assistant. The survey consisted of demographic questions and questions about (1) usage of the course LMS and Twitter feed and (2) about what could be done to increase or improve their level of engagement in any course. The survey also asked students to read a description of engagement provided by the researchers (see Appendix) and then indicate their engagement with respect to (1) the College, (2) the School of Business, and (3) the marketing course that the student was about to complete. A total of 54 surveys were completed.

Data Analysis and Results

The Statistical Package for the Social Sciences (SPSS) was used to assess the research questions. Tables 1, 2, 3, 4, and 5 provide the results of the statistical analyses. Table 1 provides the means and standard deviations for variables in the study. Table 2 provides the results from the t-tests. Tables 3, 4, and 5 provide the results of the regression equations. See Tables 1-5 on the following pages.

Usage of Learning Management System and Twitter

We began our data analysis by examining the reported usage of the Learning Management System (LMS) and Twitter feed. One hundred percent of the students reported that they used the LMS. The mean usage of the LMS was reported to be 5.54 on a 7 point scale (never = 1 to very frequently = 7). Eighty-nine percent of the students reported being frequent users of the LMS where frequent users were categorized as those who rated their usage as a 5, 6, or 7 on the 7 point scale. Almost half of the student sample (46%) reported that they had used or interacted, on some level, with the course Twitter account. The mean participation level with the Twitter feed was 2.57 on a 7 point scale (never = 1 to very frequently = 7). Of those who said they were Twitter participants, 29.7 % indicated that they were high or frequent users of the Twitter feed.

Next we assessed differences among student groups and their reported usage of the LMS and interaction with the Twitter feed. The first variable investigated was student classification. A t-test was conducted among seniors and underclassmen (non-seniors) and their usage of the LMS. The mean usage of the LMS for seniors was 6.20 while the mean usage of the LMS for underclassmen was 5.30 (never = 1 to very frequently = 7). These means were significantly different at the .03 level. These results indicate that seniors used the LMS system more frequently than did the underclassmen. Another t-test was conducted among seniors and underclassmen and their interaction with the Twitter feed. The mean Twitter interaction for seniors was 2.53, and the mean usage of Twitter for underclassmen was 2.59 (never = 1 to very frequently = 7). These means were not significantly different at the .05 level and thus indicate no significant difference between seniors and underclassmen with respect to their reported level of Twitter interaction. Overall, these results show that there were differences between seniors and underclassmen and their usage of the LMS with seniors reporting that they used the LMS system more than underclassmen. However, there were no significant differences between seniors and underclassmen in their reported interaction with the Twitter feed.

We also assessed differences among student athletes and non-athletes and their usage of the LMS and Twitter. T-tests were conducted among athletes and non-athletes and their reported level of usage of the LMS and interaction with the Twitter feed. The results show that the mean LMS usage for athletes was 5.65, and the mean LMS usage for non-athletes was 5.09 (never = 1 to very frequently = 7). These means were not significantly different at the .05 level and thus there was no significant difference in the LMS usage among athletes and non-athletes. For Twitter usage, the mean reported level was 3.0 for athletes and 2.5 for non-athletes (never = 1 to very frequently = 7). However, these means were not significantly different. Overall, there were no significant differences in the student sample between athletes and non-athletes and their reported level of LMS usage and Twitter interaction.

Table 1
Means Table

Variable	Mean	SD	N
LMS Usage	5.54	1.41	54
Twitter Interaction	2.51	2.05	54
Engagement with Course	5.31	.93	54
Engagement with School of Business	4.37	1.55	54
Engagement with College	4.98	1.28	54

Table 2
T-Tests

Source	Dependent Variable	T Value	df	Sig.
Classification	LMS Usage	-2.20	52	.00
	Twitter Interaction	0.09	52	.93
	Engagement With Course	-1.08	52	.29
	Engagement with School of Business	-2.57	52	.01
	Engagement with College	-0.30	52	.77
Athlete	LMS Usage	1.18	52	.24
	Twitter Interaction	-0.77	52	.45
	Engagement with Course	-0.19	52	.85
	Engagement with School of Business	0.23	52	.82
	Engagement with College	0.23	52	.32

Table 3
Regression Analysis on Engagement with Course

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.09	.48	No Relationship
Twitter Interaction	0.42	.00	Positive Relationship
Adusted R Square	0.135		
F Value	5.12	.00	

Note. Dependent variable: Engagement with Course

Student Engagement

Student engagement is a point of emphasis at many colleges and universities. Therefore, engagement was assessed in three different ways. Student engagement was assessed with (1) the marketing course, (2) the School of Business, and (3) the College. The first level of analysis was to examine the descriptive statistics for each of the three engagement categories. As seen in Table 1, the mean level of engagement was 5.31 for the marketing course, 4.37 for the School of Business, and 4.98 for the College (1 = not at all engaged to 7 = very engaged). These results indicate that students felt most engaged with their marketing course, then the College, and last with the School of Business.

The next level of analysis investigated whether the reported levels of engagement were significantly above 4 (the scale point indicating neutrality or indifference). We conducted one-sample t-tests to determine the significance of the reported levels of engagement with the course, the School of Business, and the College. The results showed that engagement with the course and engagement with the College were significantly different from 4 at the .05 level. Engagement with the

Table 4
Regression Analysis on Engagement with School of Business

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.35	.00	Positive Relationship
Twitter Interaction	0.02	.90	No Relationship
Adjusted R Square	0.09		
F Value	3.53	.03	

Note. Dependent Variable: Engagement with School of Business

Table 5
Regression Analysis on Engagement with College

Variable	Standardized Beta Coefficient	Sig.	Conclusion
LMS Usage	0.18	.19	No Relationship
Twitter Interaction	0.17	.22	No Relationship
Adjusted R Square	0.04		
F Value	2.05	.14	

Note. Dependent Variable: Engagement with College

School of Business had a significance value of .08. Students reportedly felt significantly engaged with the College and their marketing course, but not with the School of Business.

We also assessed differences among groups and their reported levels of engagement with the marketing course, School of Business, and the College. The first variable investigated was student classification. A t-test was conducted among seniors and underclassmen (non-seniors) and their reported levels of engagement with the marketing course. The mean engagement level with the marketing course was 5.53 for seniors and 5.23 for underclassmen (1 = not at all engaged to 7 = very engaged). These means were not significantly different, indicating little difference in engagement with the marketing course among seniors and underclassmen at the .05 level. Next, engagement with the School of Business was analyzed. A t-test was conducted among seniors and underclassmen and their reported levels of engagement with the School of Business. The mean engagement level for the School of Business was 5.2 for seniors and 4.0 for underclassmen (1 = not at all engaged to 7 = very engaged). These two means were significantly different at the .01 level. Thus, seniors reported that they felt more engaged than did the underclassmen with respect to the School of Business. Last, engagement with the College was analyzed. A t-test was conducted among seniors and underclassmen and their reported levels of engagement with the College. The mean engagement level for the College was 5.07 for seniors and 4.95 for underclassmen (1 = not at all engaged to 7 = very engaged). However, these means were not significantly different at the .05 level. Therefore, we can report no significant differences in the reported level of engagement with the College among seniors and underclassmen.

We also assessed differences among student athletes and non-student athletes and their reported levels of engagement. T-tests were again conducted for engagement with the marketing course, the School of Business, and the College. We found no significant differences among athletes and non-athletes on any of these three levels of engagement.

Relationship of LMS and Twitter with Student Engagement

A primary focus of this study was to assess the relationship of LMS and Twitter usage with student engagement. It was speculated that both LMS and Twitter usage would have a positive relationship with student engagement. Because engagement was measured at three different levels, the following paragraphs will separately discuss the relationship of LMS and Twitter usage with these three levels of engagement.

The first set of analyses sought to assess the relationship between LMS and Twitter usage with the reported levels of engagement with the marketing courses. A regression analysis was conducted using the student's reported levels of LMS and Twitter usage as the independent variables and their reported level of engagement with the marketing course as the dependent variable. The adjusted R^2 was .135, indicating that LMS and Twitter usage explain 13.5 percent of the variance in reported engagement with the marketing

course. The standardized beta coefficient for LMS usage was -0.093. However, it was not statistically significant. The standardized beta coefficient for Twitter usage was .42, and it was significant at the .00 level. The standardized beta coefficient of .42 illustrates that Twitter usage had a positive and significant impact on the reported level of engagement with the marketing course. Therefore, Twitter usage related positively to students' reported levels of engagement with the marketing course.

The second set of analyses assessed the relationship between LMS and Twitter usage with reported levels of engagement with the School of Business. A regression analysis was conducted using LMS and Twitter usage as the independent variables and student reported engagement level with the School of Business as the dependent variable. The adjusted R^2 for this equation was .087. The standardized beta coefficient for LMS usage was .35, and it was statistically significant at the .00 level. The significant beta coefficient of .35 demonstrated that usage of the LMS had a significant and positive relationship with the student engagement level as it related to the School of Business. The standardized beta coefficient for Twitter usage was .02. This finding showed a positive relationship between Twitter usage and student engagement level with the School of Business; however, this coefficient was not significant at the .05 level. Interaction with the Twitter feed did not appear to significantly influence students' perceived engagement with the School of Business. Overall, student reported usage of the LMS influenced engagement with the School of Business while Twitter usage did not.

The last set of analyses assessed the relationship between LMS and Twitter usage with engagement with the College. A regression analysis was conducted using LMS and Twitter usage as the independent variables and engagement with the College as the dependent variable. The adjusted R^2 for this equation was .038. The standardized beta coefficient for LMS usage and Twitter usage were .18 and .17 respectively. Both beta coefficients demonstrated a positive relationship with engagement level as it pertained to the College, but neither of these beta coefficients was statistically significant at the .05 level. Overall LMS and Twitter usage did not appear to significantly affect students' reported engagement with the College.

Conclusions

This study was conducted in order to gain further insights into how digital and social media might influence student's reported levels of engagement. In particular, this study sought to study how LMS usage and interaction with a dedicated Twitter feed might influence student engagement levels with a marketing course, with the School of Business, and with the College. The results of this study show that students reported that they felt more engaged when the LMS was used and when the Twitter feed was used. Specifically, Twitter usage had a positive relationship with student engagement perceptions at the marketing course level while LMS usage had a positive relationship with student engagement perceptions at the School of Business level. Usage of the LMS, at some level, was reported to be 100 percent. Nearly half (46%) of the student sample reported some interaction with the Twitter feed. Seniors reported that they used the LMS significantly more than underclassmen while there was no significant difference in Twitter usage between these groups. The results also showed that students reported that they felt most engaged with their marketing course, followed by the College and the School of Business respectively. There were no significant differences in engagement levels with the marketing course among seniors and underclassmen, but there were differences between these groups and their levels of engagement with the School of Business. Seniors felt more engaged with the School of Business than did underclassmen. There were no significant differences between athletes and non-athletes on any of the three types of engagement.

Extant research has shown that student engagement is a major predictor of student success, and thus colleges and universities are searching for new and innovative ways to get their students more involved, connected, and engaged. This study provides insights on how Twitter and LMS usage might be incorporated in a college setting in order to positively influence student engagement with a course, a school, and a college.

Suggestions for Using a LMS and Twitter feed in the Classroom

The major findings of the study provide additional insights on how to better use Twitter and a LMS and how these platforms may improve student engagement. Additionally, the research instrument included an open ended question asking the students to provide one thing that they felt would increase or improve their level of engagement. Using these student ideas and comments along with the quantitative analysis previously outlined, we would like to offer some suggestions for colleagues exploring the use—or expanded use—of social media and digital platforms in their college courses.

1. *Consider using or expanding the use of social media in courses*. Many of the students voluntarily followed and interacted with the Twitter feed. They were told at the outset that other forms of communication would be used

Table 6
Categorized Tweet Content – Instructor Generated

Subject	Percentage of Tweets
Marketing (General)	21
Student Related	18
Business (General)	15
College Related	12
News/Sports General	12
Marketing (Course Related)	11
Marketing (Course Admin)	4
Marketing (Research)	4
Career	3

for official communication. A major finding of this study was that Twitter usage did significantly influence engagement levels, so professors might consider at least trying some type of social media in their courses.

2. *Schools and colleges could consider using social media to promote engagement and possibly improve retention of students*. Social media is relatively inexpensive to use and can be an effective way to stay connected with students. Several of the students in this study wanted the School of Business to create a Twitter account that they could follow. Frequently, colleges will allow graduates to keep their school email accounts in the hopes that it will improve their connectivity with them once they leave campus. Social media may be a better option.
3. *Use the LMS more*. Several students stated that they wanted more widespread usage of the LMS across their classes with many of these students stating that they wanted all of their professors to use the LMS. Increased usage of the LMS was the most frequent suggestion mentioned by the student respondents.
4. *Provide variety when using social media platforms such as Twitter*. This study provided many different types of tweets such as tweets on marketing, business, news/sports, course info, and career. Individuals, being multifarious, like and respond to different things, so a variety of tweets and topics can provide opportunities for all students to engage, interact, and connect with the class. See Table 6 for the list of subjects that were tweeted about in this study.
5. *Use the grade book function of the LMS*. According to student responses, this was the most important function or aspect of the LMS. Students wanted to see their grades posted online, and they wanted the grades to be up to date. If faculty members are going to only use certain parts of the LMS, they should consider using the grade book function as it appeared to be important to many students in this sample.
6. *Analyze the LMS user statistics, if available, to see what modules students are frequently accessing.* For example, one might examine how often they are using the LMS, and how long they are staying on the LMS. Most LMSs will provide aggregate user statistics that can be used for creating a LMS strategy. While activity does not indicate engagement, it is a metric that can give an instructor a good starting point.
7. *Consider the audience when designing a social media and LMS strategy.* This student population was comprised of millennials. That may have been why Twitter seemed to have a positive influence on engagement levels. However, different audiences such as nontraditional or graduate students may prefer other types of social media and digital platforms. This is an idea that is worthy of further study.
8. *Consider using the LMS or social media to provide more practical applications or real world examples*. Many of the students suggested that they wanted more examples and applications. Social media and LMSs

are good platforms for providing this type of content.

This exploratory study provided important insights and several ideas on how to more effectively use social media and an LMS to influence student engagement. Professors, especially marketing professors, should at least try to incorporate more social media and LMS use in their classes. Marketing practitioners are using social media and digital marketing more and more to reach their customers. Professors should also start using these tools to more effectively reach their target market: the marketing student.

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Appendix

Research Instrument

1. What is your current classification at xxxxx College? Circle your answer choice – only one answer.

Freshman/first year
Sophomore
Junior
Senior

2. Are you a student-athlete on a team sponsored by the xxxxx College athletic department? Circle your answer choice – only one answer
   Yes No

Please read and process the following description of "Engagement":

Engagement is defined by some as the frequency with which students participate in activities that represent effective educational practices, and conceive of it as a pattern of involvement in a variety of activities and interactions both in and out of the classroom and throughout a student's college career. Additionally the phrase "student engagement" has come to refer to how involved or interested students appear to be in learning and how connected they are to their classes, institutions, and each other.

For questions 3, 4, & 5
Thinking about the "engagement" description above, rate your level of "engagement" with the following by circling one number choice:

3. xxxxx College

1	2	3	4	5	6	7
Not at all Engaged						Very Engaged

4. The xxxxx School of Business

1	2	3	4	5	6	7
Not at all Engaged						Very Engaged

5. This course you are about to complete (MKT 301A, MKT 301B, or MKT 424A)

1	2	3	4	5	6	7
Not at all Engaged						Very Engaged

6. In which generational cohort do you consider yourself a member? Choose and circle only one.

Silent Generation	(born 1925 - 1945)
Baby Boomer 1	(born 1946 - 1955)
Baby Boomer 2	(born 1956 – 1964)
Gen X	(born 1965 – 1980)
Millennial	(born 1981 – 2000)

7. xxxxx College hosts its Learning Management System on xxxxx. This is where a student would go to look at their grades, download any handouts or PowerPoint slides, review the course syllabus etc. Thinking only about this course – rate **your** usage of the Learning Management System available on xxxxx. Circle only one answer choice.

1	2	3	4	5	6	7
Never						Very Frequently

8. This course had a Twitter feed available to any students that were interested in voluntarily following it throughout the semester. The Twitter handle was @xxxxx_MKT. Your level of interaction with this Twitter account could have ranged from none at all, to being a "Spectator" that read postings, a "Creator" who published Tweets on the account, a Re-Tweeter who shared tweets from the account etc. Thinking of **your** interaction only, **on any level**, with the @xxxxx_MKT Twitter account this semester please rate your participation level. Circle only one answer choice.

1	2	3	4	5	6	7
Never						Very Frequently

9. Thinking now about any xxxxx **School of Business** course. What one thing could be done to increase or improve your level of engagement with, in, or to a course in the xxxxx School of Business? You may use the back of this page if necessary. You may also choose not to provide any answer.