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"Leave Me and My Facebook Alone!" Understanding College Students' Relationship with Facebook and its Use for Academic Purposes

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Abstract

Facebook is by far the most ubiquitous social network in the world. While it has been studied extensively in its native social context, only recently has its use for academic purposes begun to be examined in earnest. In this study we utilize both qualitative and quantitative methodologies in multiple sections of required freshmen and senior courses at a liberal arts college (n = 245). To help delineate factors that cause students to accept (or resist) the use of Facebook by their professors, we draw from the well-established technology acceptance literature, adapting constructs known to predict acceptance and use of technology. Further, we develop new measures of "appropriateness" and "social purposes" to account for the unique context of integrating Facebook into college coursework. We provide recommendations for best practices, find a possible negative "Facebook Effect," and show that the use of technology acceptance models is a promising avenue for future research.

Keywords

Facebook, Technology acceptance, Student perception, Social network, social media

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Introduction

The current generation of students is often called the Net Generation; they are digital natives, born in the digital age, who have been interacting with this technology almost from infancy (Prensky, 2001, 2010; Tapscott & Williams, 2010). This has transformed the way they communicate, relate and learn (Hartman, Moskal, & Dziuban, 2005; Selwyn, 2009). A significant part of these changes has stemmed from the emergence of social networking sites, which allow users to gather, share ideas, and collaborate (Brown & Adler, 2008; Maloney, 2007).

By far the most pervasive social networking site is Facebook with a reported over 1 billion active users (Fowler, 2012), and it has been found to be the most common social networking site used by college students (Cheung, Chiu, & Lee, 2011; Hargittai, 2007; Selwyn, 2009; Smith & Caruso, 2010). Facebook has been the subject of much research and reporting, and has recently begun to be examined in earnest in the academic context (Bosch, 2009; Hew, 2011; Mazman & Usluel, 2010; Yang, Wang, Woo, & Quek, 2011). Indeed, while Facebook is generally considered by its users to be a social technology as opposed to an educational tool (Madge, Meek, Wellens, & Hooley, 2009; Mazman & Usluel, 2009; Selwyn, 2009), it has been shown to have some positive impacts on college life (e.g., higher levels of self-esteem, social acceptance and adaptation to university culture, which can improve their learning outcomes; Madge, et al., 2009; Wang & Wu, 2008; Yu, Tian, Vogel, & Kwok, 2010).

Some educators argue that we professors need to go where the students are, that we need to go with students into these social media in order to stay effective as teachers (Hartman et al., 2005; Prensky, 2010; Tapscott & Williams, 2010). Others are more cautious about this endeavor, cautioning college faculty and staff from invading a social space where they're not wanted (Madge et al., 2009), and have urged that more research into how students use technology is necessary (Hurt et al., 2012; Kalin, 2012; Mazer, Murphy & Simonds, 2007; Teclehaimanot & Hickman, 2011).

The research so far has determined that students view Facebook primarily as a social tool, and generally are not enthusiastic about the idea of formally introducing it into college classes (Baran, 2010; Madge et al., 2009; Selwyn, 2009), though this finding isn't universal (Roblyer, McDaniel, Webb, Herman, & Witty, 2010; Smith & Caruso, 2010). Despite all its well hyped potential, faculty are typically even less enthusiastic about using Facebook than are their students (Ajjan & Hartshorne, 2008; Cloete, de Villiers, & Roodt, 2009; Roblyer et al., 2010), and the research on the effectiveness of using Facebook for academic purposes has also been mixed (Irwin, Ball, Desbrow, & Leveritt, 2012; Schroeder & Greenbowe, 2009).

In spite of ambivalence of faculty and students, and the inconclusive results about its effectiveness, Facebook IS being used in higher education. It appears that students commonly and organically use Facebook as an informal academic tool to work with each other to organize class projects or exchange information about coursework (Bosch, 2009; Madge et al., 2009; Selwyn, 2009). Further, while the numbers are limited, some faculty have begun to formally bring it into their classes in various ways (e.g., supplemental help; for class discussion boards; provide course related information; and encourage student interaction; Hurt et al., 2012; Irwin et al., 2012; Schroeder & Greenbowe, 2009). At this point it appears inevitable that faculty will continue to introduce and experiment with the

use of Facebook (Junco, 2012), so it is important to determine guidelines and best practices, based on careful examination of experience, theory and research, for its use (Irwin et al., 2012; Kabilan, Ahmad, & Abidin, 2010; Lockyer & Patterson, 2008; Mazman & Usluel, 2010; Roblyer et al., 2010). Even if the best practice turns out to be not to use Facebook for academic purposes at all, the knowledge gained in understanding this most ubiquitous form of social networking should provide invaluable information as we continue on to the next, even more networked, generation.

Therefore, our purpose in this study is to investigate and build on best practices and principles for the use of Facebook, especially in regard to student acceptance of its use. Further, we aim to contribute to the existing literature via the addition of unique approaches to examining this question, including incorporating theories and constructs from the well developed technology acceptance literature, adapting and adding to that work to fit the unique context of integrating Facebook into college coursework.

Literature Review: SoTL and Technology Acceptance

SoTL
To this end, we turn to the literature on the use of Facebook for academic purposes that has begun to address the question of best practices and appropriate uses of Facebook. There has been considerable discussion and investigation about the types of use for which Facebook is best suited, and under what conditions students are more likely to embrace (or reject) its use.

Researchers have suggested that Facebook is well suited for a number of purposes, including: developing connections amongst fellow students or creating a sense of community (Beaudoin 2012; Hurt et al., 2012; Kaliban et al., 2010; Moeller & Nagy, 2013); promoting discussion amongst students (Hurt et al., 2012; Schroeder & Greenbowe, 2009); facilitating student communication with instructors outside of class (especially to ask questions of the professor they might not feel comfortable asking in class, such as in large lecture courses; Bosch, 2009; Selwyn, 2009). Additionally, there is some evidence that students adopt Facebook more actively when they are provided autonomy and can take initiative (De Villiers & Pretorius, 2013; Hurt et al., 2012) and when the instructor is *less* involved or is a passive participant (Hurt et al., 2012; Teclehaimanot & Hickman, 2011).

We also look to the research on students' perceptions of Facebook as an academic tool, and their comfort with interacting with their professors on Facebook as a formal part of the course. As mentioned above, students generally report resistance to the idea of introducing Facebook into their classes. Their reactions give us a wealth of information about what might cause them to reject or not fully utilize these uses of Facebook. Some common themes that arise are: Facebook is very distracting (Jacobsen & Forste, 2011; Junco, 2012); Facebook is a tool for social purposes (Roblyer et al., 2010, Madge et al., 2009); students are uncomfortable with faculty being in what they consider personal space, and they feel as though it invades their privacy or the interaction is somehow inappropriately personal. Students do however report some benefits to Facebook (e.g., convenience, an easier medium to get to know classmates), but generally, their attitudes have been found to be mixed at best.

We also take note of an intriguing finding called the "Facebook Effect." Hurt et al. (2012) found that while students were largely resistant to the use of Facebook at the beginning of the semester for the usual reasons, in one of the courses the students had significantly more positive attitudes at the end of the semester, *after* having used Facebook for class. (Note, they did not directly test students' attitudes about Facebook, but rather attitudes

about online discussions which took place on Facebook in some sections and regular course management system (CMS) in others. The classes using Facebook for discussion saw significantly greater increases in positive reactions than those that used CMS. This raises the question whether students' negative *perceptions* of using Facebook for academic purposes might not match the *reality* of doing so. This is consistent with Baron's (1999) description of reactions to new literary technologies across history (from "pencils to pixels"). He posited that most people resist the introduction of new technology because it is not similar to how it has been done before, but that eventually the resistance fades as the new and unfamiliar becomes old and familiar. If this is the case, it paints a hopeful picture about the prospect of successfully harnessing this popular social networking tool for college coursework. Perhaps students just need to try it to like it?

Technology Acceptance Literature
There already exists a well-developed, theoretically grounded and extensively validated literature on factors that impact the acceptance and use of technology that is relevant to our examination of student acceptance of Facebook for academic purposes. A wide range of theories from psychology and sociology have been used to explain the adoption of new technologies, focusing on individuals' motivational and decision making processes and how technological innovations meet individuals' needs (Technology Acceptance Model, Davies, 1989; Unified Theory of Acceptance and Use of Technology, Venkatesh, Morris, Davis & Davis, 2003). They have found that there are a number of beliefs about, and attitudes towards, the use of a particular technology in a particular context, which drive individuals' use of that technology. These antecedents of a technology being adopted (or not) generally fall into these (simplified) categories: (1) its difficulty / ease of use, (2) the benefits the individual sees in using the technology (generally, will it help them perform better or get some outcome they desire), (3) its compatibility with their job and their style of working, and finally, (4) whether influential people think they should use it (e.g., their boss, their organization).

We borrow, and adapt to the educational context, three antecedents we believe most relevant to examining the use of Facebook: beliefs about the technology's "compatibility" with an individual's job, "effort expectancy" (the level of ease/difficulty associated with using the technology), and "performance expectancy" (the degree an individual believes the technology is useful in helping them perform well). Further, based on the literature on student reactions to the use of Facebook, we believe two additional factors are necessary to account for the unique situation of repurposing an existing popular social networking platform for academic purposes. The first is the belief about the "appropriateness" (or inappropriateness) of the technology for an academic setting, to capture students' oftexpressed discomfort in using Facebook with their instructor. The second factor is the belief that Facebook is primarily for personal or "social purposes" as opposed to a work or school related purposes. We would expect student beliefs that Facebook is not appropriate and that it is primarily for social purposes, to negatively impact its acceptance. Therefore, we put forward these five "antecedents of Facebook acceptance" as constructs to help us explore and understand students' perceptions and attitudes about the use of Facebook for college coursework.

Research Objectives
Our objectives in this study are:

- To explore what factors make students more or less comfortable with the use of Facebook for academic purposes, and relatedly, empirically examine student comfort with specific ways of using Facebook for academic purposes.

- To further investigate the idea that students might become more comfortable using Facebook for academic purposes *after* they have actually used it. That is, we ask the question if the generally negative reaction of students to the prospect of using Facebook for academic purposes in fact matches the reality of doing so.
- To introduce modified technology acceptance variables to help elucidate causes for students' acceptance and use of Facebook.
- Finally, to add to the growing survey data on current uses of Facebook for academic purposes, and student attitudes/perceptions of use of Facebook for academic purposes.

In order to address these objectives, we conducted a two part study, utilizing both qualitative and quantitative methodology. We first conducted a focus group to both explore students' thinking on the use of Facebook as well as to get feedback on our measures. We then conducted a survey study with a larger sample of students.

Focus Group Methods

Based on our review of the literature we created a preliminary survey we intended to administer to students, including the antecedents of acceptance, questions regarding comfort with specific uses of Facebook, as well as open ended questions about the use of Facebook for academic purposes. Before administering the survey, we conducted a semi-structured focus group with students to explore their perceptions of the use of Facebook for academic purposes, and then to have them review the items and measures we had chosen. Specifically, we talked to 5 students, who ranged from sophomores to seniors, and asked them generally what they thought about the use of Facebook for educational purposes to explore if we were missing any important concepts. We also asked them if a professor had ever used it, and if so, (1) in what ways they used it, (2) whether it was useful and (3) how they felt about its use. If they hadn't had a professor use Facebook, we asked them if they thought it *would* be useful, etc. We then had them review and comment on the survey we had prepared.

Focus Group Results

The students' responses were consistent with prior findings that students typically do not like the idea of using Facebook for academic purposes, and that their resistance is based on it being a social not academic medium, and a general discomfort about interacting with professors on Facebook (e.g., it would be "weird" to see their professor on Facebook). The students thought that our addition of the variables "Appropriateness" and "Social Purposes" to help explain students' reactions to Facebook was fitting. Finally, we modified the language of some of our items based on their input.

Survey and Data Collection Methods

Sample. We administered an online survey to a large freshman introduction to business course and senior capstone policy and strategy course (a total of 10 sections) in the business department in an undergraduate only liberal arts college in the Northeastern United States. The survey was a required assignment for each of the courses, but participation in the study was entirely voluntary. The instructors were not told who agreed/declined participation. Facebook was not used by professors in either of these classes.

We had 245 students participate (out of 270 students solicited, for a response rate of 91%). Our sample was 39% female, 60% male, 1% other, 91% white, 4% African descent, 2.5%

Asian and 2.5% Latino. Note that these numbers are reflective of the demographics of the business major (91.5% white, 57% male). The average age was 19.2. Facebook was by far the most commonly used social media, with 96.7% having an active Facebook profile (followed by Twitter with 71% and Instagram with 49%). The students were frequent online users, reporting that they go online "several times a day" and that they check Facebook and their email between "a few" and "several times a day." This level of technological use in college students is similar to what's been reported elsewhere (Grosseck, Bran, & Tiru, 2011; Smith & Caruso, 2010).

Antecedents of acceptance of Facebook. As discussed above, we adopted and adapted three measures from the technology acceptance literature, and created two of our own. All of these measures had rating scales of 1 to 5, with one indicating strong disagreement with the statement and five expressing strong agreement, and were prefaced as asking their opinion about "Using Facebook for college courses." (See Appendix A for all antecedent items).

The three-item *Compatibility with Academic Work* scale (α = .84) measured the extent students perceived Facebook to fit with their academic tasks (adapted from Davies, 1989; Moore & Benbasat, 1991). A sample item is "Using Facebook for academic work fits with my work style." *Performance Expectancy* was measured with five-items (α = .96), assessing the degree the students perceived Facebook as being useful in helping them perform well in their studies. A sample item includes "Using Facebook increases my chances of doing well in class." The *Effort Expectancy* scale (α = .93) consisted of four items that assessed the perceived ease (or difficulty) of using Facebook for class. "Using Facebook does not require a lot of mental effort" is a sample item.

The four-item *Appropriateness for Academic Setting* scale (α = .92) measured students' level of comfort/discomfort with the use of Facebook by professors in college classes. A sample item is "I am comfortable having professors communicate with me through Facebook." This *Social Purposes* scale (α = .75) was three items that measured the extent students viewed Facebook as having primarily personal or social purposes. A sample item is "Facebook is for my personal life."

Comfort with ways of using Facebook. Based on our review of the literature, our experiences as instructors, and our focus groups with students, we created six items describing ways Facebook could be used for class (e.g., "the Professor is the 'administrator,' but only posts necessary class information"), and asked students how comfortable they would be with that use. This rating scale was 1 to 5 with 1 being "very uncomfortable – I wouldn't like it at all" and 5 being "very comfortable – it wouldn't bother me at all." (Please see Table 1, below, for all items).

Experience with Facebook for academic purposes. We asked students if professors had used Facebook for academic purposes, and if so, in what way. We asked the same of student initiated use of Facebook.

Open ended questions about their opinion of use of Facebook for classes. Finally, we asked students to comment in an open-ended format on the appropriateness of Facebook and comfort with various ways of using Facebook for class. They were not prompted to give positive or negative comments.

Survey Analyses and Results

Quantitative Analyses
Level of comfort with ways of using Facebook. Consistent with the tenor of the open ended comments (discussed below), the students' scores on their comfort with various ways of using Facebook were generally low, with the averages ranging from 2.02 to 3.37 out of 5 (see Table 1). What is striking about these results however is the clear *pattern*. Students were the most comfortable when the professor didn't have access to the Facebook page/group, and most <u>un</u>comfortable with friending their professor. There appears to be a direct negative relationship: the more the professor is involved with them on Facebook, the less comfortable they are.

Table 1. Descriptive Statistics for Comfort with Ways of Using Facebook

	Mean	SD
A student TA is the administrator for the group and the professor doesn't have access and isn't involved in the group at all.	3.37	1.31
The professor requires students to create Facebook groups for group projects but is not involved.	3.22	1.31
The professor is the "administrator" of the class group (creates the group and invites students to join), and their only involvement is to post necessary class information.	3.12	1.28
The professor is the "administrator" of the class group, but doesn't participate beyond that.	2.91	1.23
The professor is the "administrator" of the class group, and participates at the same level as students (e.g., participates in discussions, comments on posts, etc.)	2.83	1.30
Students are required to friend their professor and interact with the professor and class on Facebook.	2.02	1.15

Note. n = 245. FB = Facebook. SD = standard deviation.
Comfort with ways of using FB ranges from 1 (very uncomfortable) to 5 (very comfortable)

Actual uses of Facebook for academic purposes. Aside from uncovering the students' feelings about the use of Facebook for academic purposes, we also asked them open ended questions about actual usage. In our sample, 54% of students have engaged in student initiated use of Facebook in at least one class, with the primary purpose being an organizational/communication tool for group projects. Further, 13% of the students had a professor use Facebook for a college class. The purposes for professors using Facebook ranged much more broadly, including communication of class related logistical information (e.g., posting of assignments, notices, updates, reminders, etc.), dissemination of information for class discussion, class discussion itself, dispersal of topically relevant information (e.g., fun clips, news related to class, etc.), for students to receive extra help related to the course, posting information of interest to students not related to class (e.g., career information).

Examining the "Facebook Effect". To examine the "Facebook Effect" (the idea that professors' use of Facebook for class improves student attitudes toward such use of Facebook, or other online tools; Hurt et al., 2012), we compared attitudes and preferences regarding Facebook (antecedents of acceptance and comfort with ways of using Facebook) of those students who had a professor use Facebook for class with those who had not. Note, students who had student-initiated but not professor-initiated Facebook use, were included in the second group.

To do this we ran independent samples t-tests on *Compatibility with Academic Work*, *Effort Expectancy, Performance Expectancy, Appropriateness for Academic Setting* and *Social Purposes* (all shown, or expected, to predict adoption and use of technology, see Appendix A for items). We found NO significant differences between the groups on these measures, indicating that the students who used Facebook for academic purposes had not become more positive towards Facebook (see Table 2).

Table 2. Independent samples t-test results comparing those who used/not used Facebook (initiated by their professor) on antecedents of Facebook acceptance

Antecedent of FB acceptance	Mean (SD)		t-test	
	Used FB	*Did Not Use FB*	*t(243)*	*p*
Compatibility with Academic Work	2.29 (.91)	2.37 (.90)	-0.42	*ns*
Effort Expectancy[†]	4.08 (.63)	3.95 (.81)	0.79	*ns*
Performance Expectancy	2.65 (.95)	2.41 (.94)	1.26	*ns*
Appropriateness for Academic Setting	2.53 (1.01)	2.48 (.96)	0.25	*ns*
Social Purposes	4.18 (.60)	3.97 (.66)	1.55	*ns*

Note. n = 245 (32 using and 213 not using Facebook). FB = Facebook. SD = standard deviation. Antecedent variables range from 1 to 5, with 5 being the highest score on that variable (e.g., scored high on social purposes).
[†] For Effort Expectancy, higher scores indicate greater ease of use.

We also compared the two groups' comfort with the various *ways of using Facebook*. Here we found no differences, with two notable exceptions. Those who had a professor use Facebook were significantly MORE comfortable than their peers with the use of Facebook where the professor had no involvement (i.e., TA is in charge and professor has no involvement and where the professor requires students to create groups but isn't involved; see Table 3). In sum, in our sample, exposure to the use of Facebook for academic purposes in our study seems to have caused no differences in student perceptions of Facebook, except perhaps to be *more* comfortable with the *least* amount of professor involvement.

Table 3. Independent samples t-test comparisons of those who used/not used Facebook (initiated by their professor) for classes on comfort with ways of using Facebook

Way of Using FB	Mean(SD)		t-test	
	Used FB	*Did Not Use FB*	*t(243)*	*p*
A student TA is the administrator for the group and the professor doesn't have access and isn't involved in the group at all.	3.88 (0.95)	3.31 (1.34)	2.77	*.01*
The professor requires students to create Facebook groups for group projects but is not involved.	3.69 (1.19)	3.17 (1.31)	1.94	*.05*
The professor is the "administrator" of the class group (creates the group and invites students to join), and their only involvement is to post necessary class information.	3.31 (1.09)	3.10 (1.30)	0.78	*ns*
The professor is the "administrator" of the class group, but doesn't participate beyond that.	3.19 (1.20)	2.88 (1.24)	1.22	*ns*
The professor is the "administrator" of the class group, and participates at the same level as students (e.g., participates in discussions, comments on posts, etc.).	3.00 (1.09)	2.81 (1.32)	0.71	*ns*
Students are required to friend their professor and interact with the professor and class on FB.	1.96 (1.18)	2.03 (1.15)	-0.30	*ns*

Note. n = 245 (32 using and 213 not using Facebook). FB = Facebook. SD = standard deviation. Comfort with ways of using FB ranges from 1 (very uncomfortable) to 5 (very comfortable).

Qualitative assessment of open-ended comments
Beyond the quantitative assessment, in order to dig into our students' perceptions of using Facebook for academic purposes, we reviewed their open ended responses to the appropriateness and ways of using Facebook for common themes. The authors came to consensus about the most appropriate and useful categories for both the positive and negative reactions and categorized each comment (note that one comment could be put in more than one category).

The students' positive and negative reactions are consistent with our quantitative analyses, and confirm the reactions that have been found in other samples. On the "pro" Facebook side, there was one overarching theme – they thought getting course information on Facebook would be *convenient*. "I check Facebook every day, but I don't always remember to check [CMS]. So I would definitely be more likely to get notifications on Facebook..." "I think Facebook is a platform that is more familiar to students; therefore, it is easier to access and use to obtain pertinent information about coursework."

On the "con" side, there were several factors. By far the most commonly mentioned topic of concern was that Facebook was for *"social purposes"* and students didn't want to mix it with

class work. "Facebook is a SOCIAL network used for fun, communication, and recreation." "I'd much rather be able to keep school with school…than mix it with my personal life. I don't want to see school things when I'm relaxing on the weekends or during any free time." "Facebook is more for social networking, not schoolwork." After that, the remaining concerns were mentioned about half as often. Students were concerned about *privacy* and having personal boundaries crossed with their professor in a way that was uncomfortable. "It would be uncomfortable to have a professor to be able to see your personal posts and pictures." Relatedly, some students were concerned that Facebook could cause *problems with their relationship* with their professors. Some felt that they might be judged based on their profile ("I do not feel like using Facebook for classes is appropriate for professors. If they had access to our Facebook pages I feel like they would possibly judge or be biased towards certain students"), or that there might be "more problems with student teacher sexual relations if we were all 'Facebook friends buddy buddy.'"

Additionally students were also concerned about Facebook's potential for *distraction* ("I do not want to use Facebook for schoolwork, it would stress me out because I know I would get distracted. I tend to avoid Facebook when doing homework"). There were a number of students who noted that there were alternative systems available that could/should be used. Finally a small number of students commented that they didn't have and/or don't like to use Facebook ("I do not like Facebook, so that's right I don't have Facebook.")

Consistent with the quantitative results, our students' comments revealed largely negative reactions to the prospect of using Facebook for academic purposes. Notably, even the students who made positive comments often followed them with "but…" and then concluded with a reason they really didn't want Facebook to be used. Further, some of the students were very expressive about their desire to keep professors out of this part of their lives: "Leave me and my Facebook alone!" "Please, no..." "I don't think Facebook should be used for class at all. I would really hate that and would most likely not partake." "Again, no Facebook for class!" This sort of passionate resistance could prove a significant barrier to students' full adoption of Facebook for academic purposes.

Discussion

Overall, our qualitative and quantitative data confirms that our students have relatively negative attitudes towards the instructor initiated use of Facebook for academic purposes. Their comments on the whole reflected resistance to the use of Facebook in class, and their quantitative ratings of "comfort" with various ways of using Facebook averaged as low as 2 (with 1 being "very uncomfortable – I wouldn't like it all") and went only as high as 3.4 (just over neutral).

Consistent with previous work (Madge et al., 2009; Mazman & Usluel, 2009; Selwyn, 2009), our qualitative results indicate student resistance stems from the belief that Facebook is for social rather than academic use (and not wanting the two to mix), as well as from concerns that interacting with professors on Facebook might inappropriately cross boundaries, raising concerns about privacy and possible problems in professor-student relationships. Our quantitative results give more direct evidence of what makes students uncomfortable, pointing in a similar direction. There is a clear pattern in students' comfort levels with various ways of using Facebook: the more the professor is involved, the less comfortable they are. The level of professor involvement is clearly an issue that professors need to address if they are to effectively use Facebook in their classes.

We also found further evidence that the "Facebook Effect" (where using Facebook for class improves student attitudes towards the use of web based technology; Hurt et al., 2012) is

not straightforward. The students who had a professor use Facebook in class were NOT more positive towards it than those who hadn't, and by some measures were less so. However, we do not conclude from this that the use of Facebook does *not* ever lead to greater comfort with the technology. Instead, consistent with the greatly varying levels of comfort with different ways of using Facebook, we believe it's more likely that students react differently to different uses of Facebook. While we were not able to empirically test differences in reactions to differences in actual use of Facebook in our sample, a closer empirical examination of the impact of various methods of incorporating Facebook clearly needs to be done. This underscores the advice to faculty to be careful and deliberate if and when they introduce Facebook into a class (Hurt et al., 2012; Madge et al., 2009).

Practical Implications
One of the primary purposes of our study was to contribute to best practices of the use of Facebook by professors (which could include, to paraphrase a student, "leaving their Facebook alone!"). Even though we found that students are resistant and that exposure to the use of Facebook could have a negative effect, we do not come to the conclusion that Facebook should not be used. Instead, we raise the question: how do we capitalize on the benefits of Facebook while minimizing the negatives?

Maximizing the positive. From the work of others (De Villiers et al., 2013; Wang & Wu, 2008; Yu et al., 2010) we know that Facebook is good at helping develop connections and relationships and sense of community, allows students to get to know each other more easily, and provides a more natural and familiar format for online discussion; so utilizing Facebook for discussion and student work groups would be a good utilization of Facebook's strengths. From our study, we know that students find Facebook very convenient, and a number of them thought that having announcements and the like on Facebook would actually be more effective than traditional CMS or email. Professors could harness this convenience factor to provide something of value to the students – notices and reminders, and access to class materials in a way that's already integrated into most of their lives.

Mitigating the negative. A clear obstacle to effective use of Facebook is students' view that it is for social purposes only, and they have boundary/privacy/propriety concerns about using Facebook with their professors. The strong finding from our data is that "less is more" - the professor should minimize their presence and be less involved, which may mitigate the perception of crossing those boundaries.

Clearly professors should *not* attempt to "friend" their students. Not only does our data show our students were explicitly uncomfortable with it, but there is actually no need to friend students: There are group options that allow group-related interaction without access to members' profiles or outside group postings. Further, based on our students' preferences regarding ways of using Facebook, ideally the professor would not be involved at all (the two most acceptable options were student run and TA run groups, with no professor involvement). Where that is not feasible, Hurt et al.'s (2012) method of using a "shell" profile for the professor (no personal information and just a professional picture) is an excellent option. This minimizes the perception of engaging in the social component of Facebook (by viewing more personal aspects of the professor's life) while still allowing the professor to post and observe the group.

Additionally, given the fervor with which some students decry the use of Facebook, it is important for professors to directly address students concerns if they're going to overcome students' strong feelings. Professors can address these concerns early on by having a session laying out how Facebook will be used in that course, how the class Facebook presence has been set up, and reviewing privacy and individual group settings which

students can control. Eliminating ambiguity with regard to the professor's role and what can be seen by who, should serve to alleviate students' discomfort at having their academic life possibly intersect with their personal life online. Indeed, Hurt et al. (2012) started their successful semester using Facebook with such a training session. This may have set the stage for a good experience for the students, and helped lead to the positive "Facebook Effect" found in that study.

Research Implications
In this study we introduced some promising tools into the effort to understand student use of technology and its appropriate place in the classroom. First, we adapt established measures of some factors that have come up organically in the Facebook discussions as being important issues in the use/acceptance of Facebook: ease of use parallels convenience, and performance expectancy parallels expectations of learning (Irwin et al., 2012). Our additions of *appropriateness for academic settings* and *social purposes* tap two other very common concerns voiced by students. The introduction of these variables derived from the technology acceptance literature provides us (subject of course to further validation of the constructs) with convenient and reliable measures with which to move empirical assessment of Facebook forward.

Further, this indicates that applying entire technology acceptance models may be very productive endeavors for SoTL researchers (in fact, a few educators in the computer science field have already begun doing so; Arteaga & Duarte, 2010; Escobar & Monge, 2012). There's reason to think these factors will also help us understand students' actual adoption and use of technology for academic purposes, as they have in many other contexts. Further, the models provide us with more systematic and theoretically grounded ways of thinking about our students and the use of technology in the classroom.

Additionally, being able to apply more broadly applicable models and constructs to this issue is particularly important because of the nature of these technologies – they are constantly changing. It will be very useful to determine what factors or combinations of factors are especially important to technology acceptance in the context of the college classroom, as well as whether the technology acceptance models operate similarly or whether they must be modified to account for the idiosyncrasies of this context. Determining such general principles will allow us the flexibility to quickly adapt and assess technologies as they change.

Implications of Change
Clearly technology is changing at a very rapid rate. The challenges we're facing today attempting to communicate with students in the ways and places they're familiar with may very well change in a few years' time. For example, the distinction between software designed for academics and technology more organic to student life (Facebook, social media, etc.) may not exist for long. CMS providers might respond to their market (students) and adapt in a number of ways: develop interfaces that are more similar to Facebook; integrate in some fashion with various social media (Facebook, Twitter); develop or improve apps for mobile devices. Additionally, Facebook might adapt and create functions that are a better fit for academic purposes.

Indeed, the convergence between the way students use technology/share information (social media, mobile devices) and CMS has already begun. A number of CMS providers have already introduced mobile apps (e.g. Blackboard, Moodle) with varying degrees of success so far, and Google has entered the arena with OpenClass. Additionally, Facebook has introduced "Groups for Schools." While it's not currently set up for classroom purposes

(and may not ever be a true substitute for CMS for legal / privacy reasons), they could very easily move in that direction.

Regardless of how technology evolves in the future (e.g., if the use of Facebook for academic purposes never really takes hold, or if Facebook and CMS converge), the rigorous study of Facebook use for classes and the adaptation of technology acceptance models to the classroom context still provides essential information in how to best use technology in general and reach our students.

Limitations and Future Research
Sample. The most obvious limitation of this study is the sample, which is relatively narrow. Future research needs to be conducted on samples with majors other than business, from different institutions and with a broader range of demographics to ensure generalizability.

Survey. Because Facebook was not being used in the classes our sample was drawn from, students were being asked to recall their previous experiences, or to speculate what the experience would be like. Both of these could lead to responses not accurately reflecting what their real experience was, or would be. Further research should attempt to capture student attitudes concurrently with the use of the technology.

More extensive use of technology acceptance models. Further, we should test complete technology acceptance models, notably measuring actual usage outcomes, to determine if what we expect to impact acceptance and usage does in fact do so. Use of these models can give us a more nuanced understanding of how our students view and use technology (e.g., interactions amongst the various antecedent variables), and understanding actual usage will allow for much clearer assessment of the impact of Facebook use on learning outcomes. Additionally we also should test traditional CMS as we need to compare Facebook to CMS to help us understand the strengths and weakness of each from a student acceptance perspective. Our students are already comparing them; they do not make evaluations about technology in isolation, and neither should we.

Questions about impact. Future research should go beyond student acceptance and attitudes about the use of Facebook (and other technologies) and address whether it actually advances student learning. Understanding the most "acceptable" way to use Facebook for college classes, is not useful if we don't know if it is actually worth using. Also, it may be that Facebook is differentially helpful to learning in different disciplines (e.g., in philosophy but not accounting), with different student populations (e.g., traditionally aged students vs. non-traditional students) or for certain types of tasks (e.g., posting general information vs. transmitting knowledge vs. discussion). While attitudes towards and acceptance of technology are important issues to address, investigating them ultimately must serve the pursuit of improving student learning.

Conclusion
In this study we have helped answer the question whether using Facebook for class makes students more comfortable and accepting of Facebook: it clearly depends. This served to raise the question "Depends on *what* exactly?" While much remains unknown, we can answer two things with some certainty: for Facebook to be accepted by students, their privacy and appropriateness concerns need to be addressed, and one thing that will most likely help that is minimized professor involvement. We also have shown that concepts from the technology acceptance models can be very useful in studying the utilization of new technology by professors in their classes. We cannot know exactly how technology will be used in the future. Perhaps professors will reject Facebook as not useful, or Facebook will converge with CMS. Regardless, the rigorous study of using Facebook for class purposes

will increase our understanding about students' use and interaction with technology, providing us essential information about how to best use technology to reach our students.

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