
Title	Use of Facebook: A case study of Singapore students' experience
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Source	<i>Asia Pacific Journal of Education</i> , 32(3), 181-196
Published by	Taylor & Francis

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Use of Facebook: A case study of Singapore students' experience

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(Received 2 November 2010; final version received 12 September 2011)

Facebook has become one of the most popular social network sites among many students. However, current research on Facebook use has focused mainly on Anglo-American students. Relatively little is known about Facebook use in Singapore. Data were collected from 83 students (ages ranged from 15 to 23). This study uses a naturalistic case study wherein the students' decision to use Facebook is a personal decision and on a voluntarily basis; their participation is not a required or graded component. The specific objectives of the study are first, to examine Singapore students' motives for using Facebook; second, to investigate the types of friends they communicated with on Facebook; and third, to examine how students manage their privacy on the social networking site. Findings suggested that the current sample of Singapore students used Facebook primarily for non-educational purposes. Specifically, Facebook was used to maintain relationships with existing known friends such as former or current schoolmates. Respondents also reported using Facebook for entertainment purposes and to vent their emotions. No respondent reported using Facebook for educational purposes. The most common strategy for privacy protection utilized by the respondents was to decrease profile information visibility through restricting access to only known friends. Educational implications of the findings as well as suggestions for future research are provided.

Keywords: Facebook; computer-mediated communication; social interaction; social networking sites

Introduction

In recent years, social networking sites have become one of the most popular and prominent types of social software used (Selwyn, 2009). Social networking sites allow individuals to connect with other individuals (e.g., sharing photographs and personal information). Although there are many social networking sites available (e.g., MySpace and Friendster), Facebook is generally considered the leading site among college and university students (Educause, 2006; Ellison, Steinfield, & Lampe, 2007; Kolek & Saunders, 2008; Madge, Meek, Wellens, & Hooley, 2009; Stutzman, 2006; Tong, Van Der Heide, Langwell, & Walther, 2008). For example, the use of

Facebook is prevalent among students in the United States, with more than 90% participation among undergraduate students (Ellison et al., 2007; Stutzman, 2006).

Facebook allies claim that it can offer pedagogical benefits to both teachers and students. Munoz and Towner (2009), for example, claimed that Facebook can help students in their learning. Students, for instance, can use Facebook to discuss group projects and course assignments with their peers, or teachers can contact their students regarding useful course links. It is important to note that such claims or beliefs are typically not based on empirical data. Opponents of Facebook, on the other hand, voice concerns about the possible harmful consequences such as security and privacy risks to students as they interact with other people online. In an interesting study, Sophos, an Information Technology security firm created a fictitious Facebook user named Freddi Staur, and randomly asked 200 other Facebook users to be friends with Freddi. The results revealed that “out of those 200, 87 accepted the friend request and 82 of those gave Freddi access to personal information such as dates of birth, addresses and phone numbers, and school or work data” (McCarthy, 2007, p. 1).

Hitherto, most research studies on Facebook focused primarily on participants from North America, particularly in the USA (Lewis & West, 2009; Madge et al., 2009). A recent study by Lewis and West involving 16 undergraduate UK students, published in *New Media & Society*, is one of the few qualitative empirical studies focusing on a context other than North America. The current study is similarly concerned with the challenge of understanding students’ use of Facebook, but it explores the issue from a different perspective.

In particular, this study examines Facebook use in Singapore, a country in South East Asia. The Infocomm Development Authority of Singapore (IDA) found that in 2009, 54% of 15- to 24-year-olds listed visiting social networking sites such as

Facebook as their most common Internet activity, more often than sending or receiving emails, and instant messaging (IDA, 2010). A survey by Singapore Polytechnic's School of Communication, Arts and Social Sciences (2009) found that 71% of 201 respondents between 15–19 years old and 74% of 175 respondents between 20–24 years old visited Facebook daily. The majority of the 800 respondents (15–34 years old) shared their personal information such as real name, age, gender and date of birth. In addition, about 9% of them said they revealed their contact number, while about 5% indicated their home address on their Facebook page. (Singapore Polytechnic, 2009) Although the survey has helped educators and researchers to have a better sense of how some Asian youths used Facebook, some fundamental questions remain unanswered. For example, what actually motivates students to use Facebook? Do students use Facebook for learning purposes? How do students manage their privacy (if at all) on Facebook? Doing so could help educators and researchers to begin to better understand the pervasive use of Facebook among Asian students.

This study begins an investigation of these questions. Specifically, this study examines student use of Facebook in a voluntary and naturalistic participation format without any external requirement by the school or teacher, or incentive to force any form of participation. The overall objectives of the study are first, to examine Singapore students' motives for using Facebook; second, to investigate the types of friends they communicated with on Facebook, as well as how these friendships are formulated; and third, to examine how students manage their privacy on the social networking site.

The rest of the article is organized as follows: The first section describes the Facebook social networking site, followed by a brief presentation of the extant

empirical research on students' use of Facebook. The second section presents the methodology; and finally, the third section reports the results of the analysis, the discussion and conclusion of the study.

Background of Facebook

Facebook was initially launched in February 2004 as a Harvard university-only social site. Since September 2006, however, Facebook has been open to anyone with a valid email address, and by July 2010, it had garnered more than 500 million active users (Facebook, 2010a). The site is free and its primary mission, according to its homepage, is "to give people the power to share and make the world more open and connected" (Facebook, 2010b).

On Facebook, users can present themselves to other people via their Facebook profiles. A user profile can include a portrait photograph, contact information (such as offline mailing address, email address, instant messenger screen name), personal information (such as gender, birthday, relationship status, hometown, high school and major field of study), as well as a list of Facebook friends. Elsewhere, users can list their preference information including personal interest, favourite music, films, TV shows, books, quotes and political views (Lampe, Ellison, & Steinfield, 2007).

Users accumulate Facebook friends on a reciprocal basis, whereby a request to become a friend must be accepted before the user is entered on their list of friends (Lewis & West, 2009). Once a request is accepted, each individual would be listed as friends on the other individual's Facebook profile as a hyperlink (Kolek & Saunders, 2008). Users can communicate with their Facebook friends by updating their Facebook "status" tag which typically works like a twitter or shout-out function where users would be able to express their thoughts or moods. The status update also allows users to tag their friends, allowing that friend to be notified of the updated status.

Users can also communicate using the Wall feature. The Wall can be found on the profile page and it acts like a noticeboard where friends can exchange messages (typically short text notes) with one another. This allows users to interact or communicate asynchronously by just replying to each other messages. The Wall is the most used feature of many users' Facebook page (Pew Internet and American Life Project, 2007). Private messages can also be sent to other users which they will receive through their inbox. This feature is similar to emailing (Pempek, Yermolayeva, & Calvert, 2009). Video sharing is also allowed where users can "tag" their friends or people who appear inside the shared video. Apart from video sharing, users can also upload photographs into albums and share them with friends through tagging them or with others by publishing the albums as public.

Another means of communication is through Facebook notes. This feature functions like a blog where users can share their feelings, notes, quotes or even pictures with friends through tagging. Another alternative means of using this feature would be to import blogs from blog domains such as Blogger or Xanga directly to share with friends, allowing the feature to act as a diary platform. The chat function also allows the user to communicate in real time through instant messages with friends who are also logged on.

Prior research

A review of the empirical literature has suggested that much of the previous empirical research on students use' of Facebook has focused on the following topics or themes: (a) identity presentation, (b) privacy concerns, (c) motives for Facebook use, and (d) Facebook relationships (e.g., Bosch, 2009; Christofides, Muise, & Desmarais, 2009; Ellison et al., 2007; Gross & Acquisti, 2005; Joinson, 2008; Kolek & Saunders, 2008;

Lewis & West, 2009; Madge et al., 2009; Pempek et al., 2009; Selwyn, 2009; Stern & Taylor, 2007; Urista, Dong, & Day, 2009; Young & Quan-Haase, 2009; Zhao, Grasmuck, & Martin, 2008). Overall, results from previous studies have suggested the following findings.

First, students perceived that they significantly presented more information about themselves (i.e., their identity) on Facebook as compared to other means of communication (Christofides et al., 2009). While we do not claim generalizability, our review of the current literature suggests that participants tend to provide honest and truthful information about themselves on Facebook. For example, Stern and Taylor (2007) found that 74% of 364 students reported that their profiles were accurate representations of themselves. Similarly, Young and Quan-Haase (2009) reported that 99% of 77 students used their actual first and last names in their Facebook profiles. Students revealed that it did not make sense to falsify information because such a practice would be questioned by their known friends. The types of information likely to be posted by students on Facebook include birth dates, actual names, email address, high school names, relationship status, interests and preferences (e.g., favourite music, films, hobbies) (Christofides et al., 2009; Ellison et al., 2007; Gross & Acquisti, 2005; Young & Quan-Haase, 2009; Zhao et al., 2008). On the other hand, students are far less likely to disclose their offline contact information such as physical mailing address and telephone numbers (Christofides et al., 2009; Ellison et al., 2007; Young & Quan-Haase, 2009; Zhao et al., 2008).

Second, findings concerning students' privacy concerns on Facebook appear to be mixed. On one hand, some students did not bother restricting their profile visibility. Kolek and Saunders (2008) found that only about one-tenth of 339 students restricted the access to their Facebook profiles, suggesting that the majority (about

90%) used the default setting (i.e., open access to everyone on the site). Govani and Pashley (2005) found that although more than 80% of participants knew about the privacy settings, only 40% actually made use of them. Similarly, Pempek et al. (2009) found that most students (61.96% of $N = 92$) enabled their profile pages to be visible to all their networks and all their friends. Only a small minority of users (1.2% of 4540) made use of Facebook privacy settings (Gross & Acquisti, 2005). On the other hand, some students were more concerned about their privacy on Facebook. For example, more than half of the respondents in Joinson's (2008) study reported changing the default privacy settings in Facebook to make their profile more private. In another study, 64% of 77 undergraduates at a Canadian university adjusted the visibility of their profile to their friends only, and only 7.9% left their profile open to anyone on Facebook (Young & Quan-Haase, 2009).

Third, a myriad of motives for using Facebook was found. These motives include: to maintain existing offline relationships, to meet new people, to occupy one's time when bored (e.g., play games or use applications within Facebook), to express or present oneself (e.g., update my own status or profile, express emotions), for learning purposes, and for student activism (e.g., using Facebook to provide election information about certain student groups, and to enable voters to express their intention to vote for certain candidates) (Bosch, 2009; Ellison et al., 2007; Joinson, 2008; Pempek et al., 2009; Selwyn, 2009; Stern & Taylor, 2007; Urista et al., 2009; Zhao et al., 2008). On the whole, findings of previous research have suggested that students mainly used Facebook to maintain existing relationships. Students reported using Facebook to keep in touch with people whom they already shared an offline connection (e.g., an existing friend, a classmate) (Bosch, 2009; Ellison et al., 2007; Pempek et al., 2009). Facebook is seldom used as a tool to meet new people online. In

addition, Facebook use has very little to do with learning or educational purposes. Finding help with schoolwork was rarely mentioned (Pempek et al., 2009). Most of the little education-related use of Facebook tended to focus on course administrative matters such as lecture schedules and assignment requirements, or emotional venting such as expressing frustration about the instructor, rather than the pedagogical aspects of teaching and learning such as querying and commenting on course-related issues (Selwyn, 2009).

Fourth, students tend to have between 150 and 400 friends on Facebook (e.g., Christofides et al., 2009; Ellison et al., 2007; Golder, Wilkinson, & Huberman, 2007; Lewis & West, 2009; Sheldon, 2008; Muise, Christofides, & Desmarais, 2009). Christofides et al., for example, found that students had a mean of 297 friends. Most students in Lewis and West's study reported having 100 to 200 friends, while a majority had between 200 and 350 Facebook friends in Sheldon's study. Although the term "friend" on Facebook can reflect that users have some form of acquaintance with people whom they have previously known offline, it can also reflect the most superficial type of relationship since it is common for users to solicit and establish friend status with people whom they are barely acquainted with (boyd, 2006). Indeed, some researchers (e.g., Urista et al., 2009) found that some individuals collect friends in order to make themselves more popular than other Facebook users. Such a case has more to do with the popularity contest to have more Facebook friends than with real reciprocal friendship.

The key purpose of this study is to help us gain an in-depth understanding of a situation (Merriam, 2001) such as Facebook use in an Asia-Pacific context (i.e., Singapore), rather than to generate grand predictions. To reiterate, this study aims to first, examine Singapore students' motives for using Facebook; second, to investigate

the types of friend students communicate with on Facebook; and third, to examine how students manage their privacy on the social networking site. In particular, the current study investigates the realities of students' Facebook activity, rather than merely focusing on how Facebook is used for education (if at all). We believe that this paper can help educational practitioners and researchers to understand the actual use of Facebook among students in Singapore. Specifically, the following research questions guided our investigation:

- 1) For what purposes were students using Facebook?
- 2) What were the types of friends students had in Facebook? How were these friendships formed?
- 3) What types of information were disclosed by students on Facebook? How did students manage their privacy on Facebook?

Method

Sample

Eighty-three students, who lived in Singapore, were recruited for the current study using a purposeful snowballing approach. The students consisted of 23 males and 60 females. All 83 students voluntarily participated in this study. Their ages ranged from 15 to 23, and all were of Chinese ethnicity. The age composition of the students is as follows: 15–16 years old (10% of the participants), 17–18 years old (25%), 19–21 years old (45%), and 22–23 years old (20%). All participants had their own Facebook account. Each individual respondent was asked by email to respond to several questions detailing how they used Facebook (please see the Appendix for the reflection questions). We did not ask the participants to record their daily use over a period of time. One of the main problems with keeping a daily use log is the cumbersome process of daily jotting down the details of Facebook activity. Not all individuals were willing to do that. We did not employ face-to-face interviews because the geographical dispersion of the participants precluded the use of this particular method.

The students' data were examined by a qualitative coding approach that followed the methods of Neuman (2006). The students' reflections were initially examined to classify comments into themes or categories relevant to the research questions (i.e., motives for using Facebook, types of friends on Facebook, and privacy management). The fit between each statement and the category was continuously evaluated. The two examples below illustrate how the data were analysed and coded.

The first example is: "Facebook status function allows my friends to know what is happening around me at this moment and they can be updated every minute everywhere." The example described here is coded as "using Facebook to keep in touch with friends" category because the most salient element appeared to be the individual maintaining contact with her friends via her personal information on her Facebook page.

The second example is: "I love to install applications like popular Playfish games; Restaurant City, Pet Society; Mafia War." This example was put into a category called "using Facebook for entertainment" because of the emphasis on some recreational or gaming activities.

The number of students who contributed comments to the different categories was tabulated, and representative statements for each category were selected. Since comments from the students were openly solicited via the reflections, a student could list multiple opinions.

Results

Motives for Facebook use

Forty-five percent of the respondents said that they visited Facebook on a daily basis, 30% said they visited Facebook at least once a week, 20% did it at least once fortnightly, and 5% said they visited Facebook only when they had something to

update on their profile. Analysis of all the comments suggested six motives for Facebook use (see Table 1): (a) to keep in touch with friends (including finding lost friends), (b) for entertainment purposes, (c) to broaden one's social network, (d) to express emotions, (e) to follow the trend, and (f) others (e.g., for fun or for the sake of having a Facebook account). It is worthwhile to note that no respondent reported using Facebook for education purposes.

(Table 1)

The most common motive for using Facebook was to keep in touch with known friends. For example, when asked why she kept a Facebook account, Student H answered:

I can simply leave a message on their wall to keep in contact with my friends, if I do not see them on messenger or etc. They can just respond to the message on their wall and reply promptly and they can like send me their regards.

Another student, S, explained:

[The] Facebook status function allows my friends to know what is happening around me at this moment and they can be updated every minute everywhere.

Other students used Facebook as a means to find lost known friends such as primary schoolmates whom they had lost contact with. For example, Student B wrote:

Facebook allows users such as me to find back their long lost friends like primary school or school mates who have lost contacts for years. I can find them through my current network of friends or searching for their names in the list of Facebook users from Singapore as some of my friends may already changed their personal contact details.

This was echoed by Student A:

To reconnect with the friends I have lost contact with, and to know what my friends are up to.

Apparently, the use of Facebook seems to supplement, rather than completely substitute, the use of other communication tools for students to keep in touch with one another. As one student put it:

Sometimes my friends don't go onto msn or skype or any other messenger to talk. They would go onto facebook and try to update their status or any messages which they would

like to pass to me and to their other friends. This provides another means to get in touch with people besides emails. (Student C)

The second most common motive for using Facebook was for entertainment purposes. A majority of the students felt that Facebook served as a source of entertainment due to the availability of applications on the social networking site. According to Steel and Fowler, applications are “pieces of software that allow Facebook’s 500 million users to play games or share common interests with one another” (2010, p. 1). Indeed, 67 out of the 83 respondents reported that they played games on Facebook. Some of the more popular types of Facebook games that respondents played included Pet Society, Restaurant City, Café World, and Mafia Wars/Vampire Wars. As one student commented:

It [Facebook] serves as a source of entertainment as the games and other applications can be deemed interesting and fun to play or use. It is usually user-friendly and it can be a great source to relieve stress or to take a break from a long day of work to engage in some recreational and entertaining games or activities. Horoscope predictions for the horoscope believers and psychological tests for those who wish to look what lies ahead for their future are also available. (Student T)

Similarly, a female student reported that:

I love to install applications like popular Playfish games; Restaurant City, Pet Society; Mafia War. There are also cases of people signing up for a facebook account for the reason so they can install the facebook applications games and to take psychological test (quizzes). Some Facebook users like the special applications like Pet Society which can be only played on the facebook platform. Most of the Youths who signed up for Facebook account would feel like installing game application as it allows them to kill time.

However, one respondent admitted that playing games on Facebook had become to him more than just a means to kill time. In fact, it had turned into something potentially harmful. He found himself addicted to playing games on Facebook:

Initially, it’s due to the influence of friends. However, now that I’m a user of Facebook, I need it because I’m hooked to the games. (Student M)

Another form of entertainment, besides playing games, was joining celebrity groups. Twenty-six respondents reported joining certain singer groups or idol fan

clubs because they were interested in these celebrities and wanted to stay up-to-date with celebrity news.

The third most common reported motive for using Facebook was to enlarge or broaden one's social network, such as getting to know new people. For example, one student explained:

Having a facebook account allows me to socialize with my friends and get to know more friends in the daily course of interaction. As a result, I can further expand my network of friends and get to know more new friends in their social circle. (Student C)

About 16% of the respondents voiced their concerns about being left out if they did not join Facebook. They created and owned Facebook accounts primarily because they wanted to follow the current trend or join the current Facebook bandwagon. As one student put it:

I feel like having a facebook account because I would not want to be outdated; and so I created an account. Youngsters use facebook and some even have more than one account using different email address. Peer pressure plays a part in it as youths seeing their friends having facebook accounts and using it like almost daily, turns into a habitual action and is a trend. Now, I feel that having a Facebook account is so usual that I somehow regard it as part and parcel of life. (Student K)

Similarly, another respondent (Student H) wrote, "I use Facebook because I want to be part of the modern lifestyle." Another respondent, who shared the same sentiment, reported, "I started on Facebook because I wanted to follow the trend; now it turns into a habit."

About 12% of the respondents reported that they used Facebook because they viewed the site as a means to express their emotions. Indeed, the use of Facebook for such purposes is akin to blogging. Blogging was found to be an outlet for many students to voice their emotions and feelings (e.g., about the demands of being a student, about other students, or simply about their daily lives) (Dickey, 2004; Sim & Hew, 2010). Student K explained how she, together with some of her friends, used Facebook to vent their feelings:

Teenagers would like to express their thoughts without letting people know what is happening to them. They would just like to express their feelings. For example, my friends and I just want to find a platform besides blog and journal and through their status to express how we are feeling. This can be an alternative of going face-to-face to a friend to talk about the problem that we face.

Finally, there were some respondents (9.6%) who used Facebook simply because they found it fun and interesting. They were not really interested in the features and the functions of the application. They just felt that there was no harm in creating an account. These users found that there was really no reason needed to justify the purpose of having a Facebook account. As student H put it, “For fun! It is a very cool tool.”

Facebook relationships

Respondents reported having between 50 and 500 friends on Facebook, with most reporting 251 to 300 (17.72%), followed by 201 to 250 (15.19%), 301 to 350 (13.92%), and 151 to 200 (12.66%). A majority of the students’ friends on Facebook were known acquaintances or peers of a similar age such as former and current schoolmates. About half of the respondents reported that they accepted only known individuals as friends. However, the remaining half said that they sometimes accepted total strangers as Facebook friends. Reasons for accepting strangers include the following:

- These strangers were friends of their known friends;
- People who the students did not know but were from the same school or fans of the same artistes;
- Strangers who played the same Facebook game. For example, Student L reported, “I’ll only accept strangers who play Restaurant City”; and
- Some respondents admitted that they accepted strangers as friends merely based on their looks and/or gender. For example, Student J reported, “I accept strangers as my friends depending on their looks. If [they] look scary, I’ll ignore their friendship requests.” Another student (Student N) expressed similar sentiments: “I accept any strangers who look friendly to me.” This was echoed by Student B: “I sometimes accept strangers if they’re my gender and their pictures do not look too dubious.”

A majority of respondents reported that they looked at their friends' profiles not on a daily basis but only when there were new updates of the profiles (e.g., new photographs, videos, statuses) or when their friends left a message. When asked whether they responded to their friends' statuses on Facebook, a vast majority (95.18%) replied that they did. Only 4 of 83 respondents reported ignoring their friends' status.

Privacy concerns

Most of the respondents uploaded photographs of themselves onto their Facebook profile pages. A majority of the respondents (38.6%) reported having 1 to 200 photographs, followed by 201 to 400 (26.51%), 401 to 600 (10.84%), and more than 600 (12.05%). Respondents (89.16%) were far less likely to disclose their offline contact information such as residential address and mobile phone number. Slightly more than half of the respondents (66%) reported changing their profile privacy settings to allow only their friends to view their information. About 33% left their profile open to anyone on Facebook. No respondent reported that he or she had trouble or encountered unpleasant situations when using Facebook such as being stalked by strangers either online or offline.

Discussion and conclusion

This study reveals that Facebook has very little educational use as far as the current sample of respondents is concerned. No education-related activities on Facebook were reported at all in the current study. This finding is similar to many other studies conducted elsewhere (e.g., Kolek & Saunders, 2008; Madge et al., 2009; Mazer, Murphy, & Simonds, 2009; Pempek et al., 2009). One explanation is that students' perceptions of what Facebook is to be used for are very different from their

perceptions of education-related work (Madge et al., 2009). Students in the current study, for example, pointed out that Facebook is a social networking site or a tool to get away or to take a break from study (e.g., entertainment purposes) instead of actually doing schoolwork; hence students tend to purposefully demarcate boundaries to keep these two aspects separate.

Second, the size of Facebook friends reported by the participants in our study (i.e., 251 to 300) was comparable to those reported elsewhere (Christofides et al., 2009; Ellison et al., 2007; Golder et al., 2007; Lewis & West, 2009; Sheldon, 2008; Muise et al., 2009). According to Dunbar (1992, 1993), the maximum number of meaningful relationships a human brain can possibly remember is about 150 on average. Dunbar reached the value of 150 after studying a wide range of societies throughout history. The value of 150 is an approximation and there is no actual precise number, but Dunbar found that social groups larger than this number tend to splinter. According to Edwards (2010), Dunbar's findings are backed up by Cameron Marlow, a research scientist with Facebook who said that he had found Facebook users only communicate regularly with a small core of their listed friends. Many Facebook friends are usually acquaintances or people whom a user does not keep in touch with. So, in one sense many of these relationships are superficial and weak.

In fact, close to half the students (43%) in the current sample were willing to develop new relationships on Facebook, such as accepting strangers as friends. Analyses of the current data suggest for possible reasons that could lead to students accepting strangers as friends. Upon closer examination, however, it appears that these reasons may be parsimoniously collapsed into just two major factors. First, the stranger's physical attraction (e.g., friendly looking) appeared to affect some students' decisions to accept the stranger as a friend despite a lack of knowledge of whom these

strangers actually are. Perhaps these students perceive the friendly looking strangers as non-threatening to their privacy. Second, some students were willing to accept the stranger's friend request because of a perceived similarity of interest (e.g., enjoy the same game or support the same artiste). According to some researchers (Collins & Miller, 1994; Leow & Wang, 2010; Tanis, 2007; Walther, Slovacek, & Tidwell, 2001), individuals tend to accept other people who are similar with themselves (e.g., interest, gender) and the absence of non-verbal cues may increase the individuals' perceived similarity of other people with themselves, hence creating a bonding effect between two individuals who may not know each other.

Only 5% of the current Singapore student sample reported that they communicated with their Facebook friends on a regular basis such as daily or at least once a week. Such infrequent interactions further suggest that many of the respondents' relationships with their Facebook friends are weak ties. Maintaining strong relationships typically requires individuals to allocate their time and energy to communicate regularly (Donath & boyd, 2004; Miklas, Gollu, Chan, Saroiu, Gummadi, & De Lara, 2007; Vitak, 2008). Vitak suggested that Facebook is a convenient tool particularly suited to helping users stay up-to-date with their many Facebook friends because:

users can simply view the information available in those friends' profiles and by connecting through actions such as pokes, private messages, wall postings and photo comments. By offering multiple methods of interaction, Facebook saves users significant time, thus enabling them to create and maintain a massive social network, albeit one predominantly composed of weak connections between users. (p. 97)

Interestingly, none of the students in this study reported having their parents as Facebook friends. Our findings bear similarities to those of Livingstone (2008) and West, Lewis and Currie (2009) who reported that many students saw friendships with parents on Facebook posing particular problems. These are related to the notions of public and private spheres. Generally, the private sphere may include domains of

intimacy, domesticity, as well the family, whereas the public sphere includes paid work, the state, political community and participation in the community (Weintraub, 1997; West et al., 2009). While much of the literature treats the public and private as dichotomous spheres, previous research on social networking sites such as Facebook tends to suggest otherwise (Livingstone, 2008; West et al., 2009). For West et al., the notions of public and private in Facebook are fuzzy, with no clear-cut public/private dichotomy. It seems that the student's private sphere is his public, comprising his Facebook friends, but private to his parents or other older family members. West et al. went on to suggest that this is a different notion of public from that discussed in the literature (e.g., Weintraub, 1997), with the notion of public in Facebook appearing to consist of the individual's private social world. Furthermore, an individual's private sphere is not within his or her family but outside it.

The results from Gross and Acquisti (2005) show much higher percentages of Facebook users providing address information. They found that 50.8% of users gave their current address, whereas the data in this study show that only 10.2% provided their current address. One reason is that students in Singapore may have decided that home addresses are very personal information and a direct way of meeting a user face-to-face. They are primary data that would be needed for physical stalking.

The results of the current study also indicated that not all students were concerned about their personal privacy on Facebook. This is in line with the findings of some previous research (e.g., Govani & Pashley, 2005; Joinson, 2008; Young & Quan-Haase, 2009). One possible reason for this is that students do not bother reading Facebook's privacy policy (Acquisti & Gross, 2006; Govani & Pashley, 2005; Gross & Acquisti, 2005). In fact, Facebook's privacy policy has expanded from 1,004 words in 2005 to 5,830 in 2010, with a privacy FAQ page of 45,000 words (Gates, 2010).

Furthermore, in order to manage one's privacy on Facebook, a user has to click through more than 50 privacy buttons, which require choosing among a total of more than 170 options (Bilton, 2010)! It is thus not surprising that some students do not bother making their personal information more private because they perceive the benefits of online social networking to outweigh the potential risks of disclosing personal data (Debatin, Lovejoy, Horn, & Hughes, 2009).

We found that the most common strategy for privacy protection employed by the respondents in this study was to decrease profile information visibility through restricting access to only known friends. However, Debatin et al. (2009) argued that this is a very weak protection mechanism:

a quick fix rather than a systematic approach to protecting privacy... After all, restricting profile visibility to "friends only" simply means restricting it within the visible part of the iceberg. As long as users feed the invisible part of the iceberg with extensive personal data that they update voluntarily and continually, their privacy is at risk. (p. 103)

It is likely that the perceived privacy setting of making personal information available to friends only may actually increase, rather than decrease, students' willingness to reveal personal data (Gross & Acquisti, 2005). Because students have little control on the composition of their Facebook network (very often a member's friend can add strangers into that particular network), it is very possible that the personal information students are disclosing even on protected networks can become public data (Gross & Acquisti, 2005).

Although students in this study did not report encountering unpleasant situations when using Facebook (e.g., being stalked by strangers either online or offline), Gross and Acquisti (2005) cautioned that students could still be susceptible to other privacy risks that may not be reported in existing research, such as face re-identification from facial images on Facebook profiles, and social security numbers

and identity theft (which can be estimated from birth date, hometown, residence and phone number information).

More alarmingly, it now appears that the risk of Facebook privacy breach is not merely confined to a user's network of friends or to how strictly a user sets his or her profile privacy settings. A recent *Wall Street Journal* investigation found that many of Facebook's most popular applications such as Mafia Wars and Farmville are transmitting users' personal data such as usernames and, in some cases, their friends' names to dozens of advertising and Internet-tracking companies (Steel & Fowler, 2010; "Facebook admits privacy breach," 2010). This breach of privacy affects tens of millions of Facebook application users, including those individuals who set their Facebook profiles to the strictest privacy settings (Steel & Fowler, 2010). The privacy of some of the students in the current sample, particularly those who used Facebook applications, might already be compromised without their knowing at all.

In response to the aforementioned privacy breach, Facebook recently announced that it would introduce new settings that could help users better understand what they were sharing online and with whom (Helft & Wortham, 2010). Some of these changes include showing a message on a user's home page alerting him or her of the introduction of the new settings, reworking the privacy settings to make them simpler (e.g., using 15 settings instead of 50), and the ability to turn off instant personalization from the applications, games and websites pages so that a user's information is not shared with Facebook's partners such as Microsoft Docs, Pandora and Yelp (Richmond, 2010).

Implications

There are three educational implications that can be drawn from the findings of this study. The first implication is that if almost half of the students have no qualms about

accepting total strangers as Facebook friends, then it stands to reason that sound education in digital media literacy is required. Part of the digital media literacy education programme should involve equipping students with knowledge on how to befriend people online safely. For example, students need to know that although it might be tempting to accept friend requests from strangers (e.g., the more friends the more popular one becomes, or a reluctance to hurt anyone's feelings), simply accepting any or all friend requests is unwise. Students need to know who the person actually is. Blindly accepting friend requests not only creates a greater risk for identity theft but also invites potential problem because the latest friend could be someone whom the student had offended in the past and could be hiding behind an alias in order to cause the student trouble (Holt, 2011).

Second, students should also be taught the risks of violation to their privacy. Although Facebook recently announced that it would introduce new settings that could help users better understand what they are sharing online and with whom, it is still too early to know if the new privacy settings actually work. Besides, there may never be absolute privacy protection against online intruders. Therefore, at the very least, students should be made aware that whatever information they post on Facebook runs the risk of being abused by other people, or being mined by potential employers who may disapprove of the pictures or comments. These pictures or comments may jeopardize students' chances of future employment.

Third, close to half of the students in this study reported using Facebook on a daily basis. This may have implications on the students' academic performance. In an interesting study, Kirschner and Karpinski (2010) surveyed 219 students in the USA and found that Facebook users had significantly lower GPAs compared to non-users. Although this study was conducted in the USA and direct causation could not be

inferred because the information in the study was descriptive, and the nature of the research to describe the degree of relationship rather than cause-and-effect, it is worth an educator's attention. At the very least, this signals the need for schools and educators to monitor students' use of Facebook and to send students for educational counselling if necessary.

Limitations and suggestions for future research

Two limitations of the current study merit some discussion here. First, the current study examined 83 Singapore students' (ages ranging from 15 to 23 years old) use of Facebook wherein the students' decision to use Facebook was a naturalistic and personal decision and participation was not a required or graded component. The results of this study cannot be generalized to the entire Singapore student population or other contexts. For example, some of the findings related to students' motives for using Facebook may differ if Facebook use is a required or graded component of the course curriculum. Future research should explore this issue. Future studies could also investigate if ethnicity of the students may influence their motives for using Facebook, or the extent to which students are engaged in Facebook activities. The investigation of gender differences is beyond the scope of the current study. Future research could investigate if the use of Facebook to express feelings and emotions is more apparent with females or males.

Future research should also examine if the patterns of use (e.g., privacy control) and motivations for use differ for users from different settings. For example, a vast majority of previous studies have concentrated predominantly on the young-twenties, college students and teenaged populations. Future research might examine the use of Facebook among adults who are working in one organization. For example, a recent study by DiMicco, Millen, Geyer, Dugan, Brownholtz, and Muller (2009) of

17 employees of an enterprise (Beehive) found that users chose to reach out and meet new people rather than connect with those they already knew. It appeared that these users were more motivated by career advancement and the desire to champion certain ideas or projects within the company, hence they would rather connect with new people. Furthermore, there was an absence of privacy concerns within the enterprise. Similar research should be conducted to examine and verify this claim.

Second, the results reported in the current study may have been biased because all the respondents voluntarily participated in the study. It would therefore be useful for future research to investigate the opinions of students who have used Facebook but later decided to abandon it.

Social networking sites such as Facebook are becoming increasingly popular and have attracted the focus of researchers and educators. Most of the past research studies conducted hitherto have focused on Anglo-American student samples. By focusing on a sample of 83 Singapore students, we believe that we have contributed to the development of a richer understanding of why a certain group of Asian students voluntarily choose to use Facebook, as well as their Facebook usage profile (e.g., number and types of friends, privacy settings). Doing so could help educators and researchers to begin to understand better the pervasive use of Facebook among Asian students. We hope that our findings will be useful to other researchers and educators who are similarly involved in efforts to enlarge our overall collective understanding of how and why students use Facebook.

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Appendix. Reflection questions.

No.	Question
1	How regularly do you update your Facebook status? Reason to update?
2	How many Facebook friends do you have?
3	Do you accept any strangers to be your Facebook friends or only known person?
4	What type of Facebook applications do you install? (e.g.: <i>Pet Society</i> or <i>Geo Challenge</i>)
5	How often do you view your friends' profiles?
6	Do you respond to your friend status?
7	Do you enable privacy setting whereby only your friend are able to view your profile or strangers can only access?
8	Do you post contact information like residential address, handphone number, office address on Facebook?
9	Why do you think you need a Facebook account?
10	How many photographs you have on your profile? Do you upload it yourself or tagged by friends?
11	What groups do you join on Facebook and reasons for joining them?
12	Any other comments about how you use Facebook?

Table 1: Relative frequency of Facebook use motives.

Motives for using Facebook	Percent of respondents
Keeping in touch with friends (including finding lost friends)	69.88%
Entertainment	30.12%
Broadening the social network	14.46%
Expressing emotions	12.05%
Following the trend/crowd	15.66%
For fun/for the sake of having a Facebook account	9.64%