

Face to Face with Facebook: Students’ Perspective of How Facebook Boosts Learning in Higher Education in Taiwan

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Abstract

Facebook is one of the most popular social networking platforms among university students. This research study aims to investigate students’ perspective of using Facebook as a Learning Management System (LMS) to support teaching and learning activities in higher education. A questionnaire survey was distributed to 223 students in a National university in central Taiwan to investigate the following questions: (1) Can Facebook be used as a supportive tool for teaching and learning? (2) Does engaging Facebook with course instruction increase students’ social interaction and prompt learning motivation? (3) What are students’ attitudes toward using Facebook as an instructional tool (LMS)? (4) What factors reliably predict students’ satisfaction of using a Facebook group as a LMS? The results show students believe Facebook is a convenient LMS to assist instructional activities, but it does not really increase students’ social interaction and drive learning motivation. The seven factors that best predict students’ satisfaction of using a Facebook group suggest Facebook can be implemented widely in other courses as an LMS and can be used for peer review in order to increase learning efficiency in a comfortable and safe environment where their privacy is not violated.

Keywords: Facebook, learning management system, creative teaching

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1. Introduction

Many teaching institutes have their own online learning management system (LMS) for instructors to make announcements, check assignments, manage classes, etc. Typically, instructors only see students once a week, so LMS systems play an important role in interacting with students between classes. Nevertheless, LMS systems are often quite limited and students often do not log in to check announcements. Students often do not read the messages or teaching materials before classes because they do not really engage with LMS systems. This pattern of use has reduced the efficiency of managing classes. Hence, many scholars propose the idea of using a popular Social Networking Sites (SNSs) that widely used by students as alternative LMS to increase efficiency. Facebook has been the most commonly used social networking with 2.20 billion monthly active users (Facebook, 2018). Due to the ubiquitous use, it becomes the top choice to many instructors. Though there are a lot of research studies investigating the possibilities of using Facebook as an instructional tool (Baran, 2010; Kabilan, Ahmad, & Abidin, 2010; Lambić, 2016; Lonn & Teasley, 2009; Madge, Meek, Wellens, & Hooley, 2009; Manasijević, Živković, „Arsić, & Milošević, 2016; Manca & Ranieri, 2013, 2016; Ractham, Kaewkitipong, & Firpo, 2012; Ranieri, Manca, & Fini, 2012; Sharma, Joshi, & Sharma, 2016; Wang, Woo, Quek, Yang, & Liu, 2012), there are very little related research studies in higher education in Taiwan. With the growth of technology, students enjoy interacting and communicating through social networking. Digital literacy becomes more and more important and students become less satisfied with traditional teaching approach in the classroom. Integrating new technology with teaching becomes an unavoidable trend. Therefore, investigating how to integrate Facebook with teaching as well as learning activities and students' perspectives toward it is worth of further discussion.

Some scholars hold cautious attitude toward using Facebook for educational purpose (Baran, 2010; Manasijević et al., 2016; Wang et al., 2012). They believe that even students seem to like participating in Facebook activities, they are more interested in the social aspects than the teaching dimensions of the tool (Baran, 2010) and as such the use of Facebook groups as an LMS has its limitations. The discussion on the

Facebook groups is not organized in a threaded structure and students have concerns about the information safety (Wang et al., 2012). From a questionnaire survey carried out in the University of Belgrade in Serbia, it showed that only 23.1% of students think that Facebook is very useful for academic purposes and 75.6% of students still regard it as a social networking platform to keep in touch with their friends (Manasijević et al., 2016). Students do not associate Facebook with academic purpose the moment the word “Facebook” is brought up. However, with appropriate instructions and well organized teaching activities, Facebook has great potential for teaching and learning and can enhance the learning effectiveness as well as social interaction (Lonn & Teasley, 2009; Kabilan et al., 2010; Ractham et al., 2012; Balcikanli, 2015; Brahmi, 2016; Salameh, 2017). The possibilities of using Facebook as an instructional tool need further investigation.

Growing up as ‘digital natives’, the young generation is no longer satisfied with traditional classroom teaching methods. They desire to learn in a digital environment and use digital technologies to access multiple sources of information (Manca & Ranieri, 2013). Many recent studies have advocated the need to integrate Facebook use with educational practice (Dhir, Khalil, Lonka, & Tsai, 2017). Most of these studies believe that Facebook provides an active learning environment and increase social interactions among students (Ractham et al., 2012). Holding discussions or engaging in social conversations with their peers, students are able to learn from each other, build confidence, provoke motivation, increase positive attitudes and foster their learning (Blattner & Fiori, 2009; Brahmi, 2016; Kabilan et al., 2010; Mendez et al., 2014). A questionnaire survey among 214 undergraduate students at the University of Huelva in Spain concluded Facebook can promote collaboration of learning, connect students and instructors, increase learners’ motivational, and create a more comfortable class atmosphere (Sanchez, Cortijo, & Javed, 2014). The instructional contents posted by both teacher and students on Facebook page enhance the learning effectiveness, improve the academic performance (Lambić, 2016) and provide students adequate knowledge and skills they need in literature and linguistics.

When using Facebook groups with an educational purpose, it is often used as a learning management system (LMS). Students are satisfied with the affordances of Facebook groups because they are familiar with the networking and its fundamental

functions which makes the implementation easy (Wang et al., 2012; Balcikanli, 2015). Instructors and students highly value the teaching and learning tools within the LMS (Lonn & Teasley, 2009). Though Facebook is a familiar, easy-to-use, and popular Social Networking platform, the success of using this Social Networking technology relies on the ability of the instructors to integrate Facebook group features with the educational practice (Ractham et al., 2012). Instructors should design and implement such system with various teaching strategies based on social constructivism. Several studies have indicated that students' learning attitude and learning achievement are affected by Facebook tutoring; therefore, instructors need to plan the learning process very carefully with proper strategies (Sanchez et al., 2014). Kabilan et al. (2010) state students believe Facebook could be an online learning environment if teachers or instructors preplanned learning objectives well. Manca & Ranieri (2016) investigated 147 literature research studies on three types of educational use of Facebook - formal use in formal learning settings (FUF), informal use in formal learning settings (IUF) and use in informal learning settings (UI). From their study, most studies indicate that Facebook is an informal, social and flexible environment, formal or informal learning can be achieved with some amendments.

Most teachers in Taiwan's university use textbooks to lecture on subjects and use pre-structured instructional activities. When bringing Facebook into classroom teaching, the use of formal learning settings (FUF) might be favored. Instructors use Facebook as an assisting tool to supplement the formal lecture of the textbooks in formal setting. Also, Facebook group is a high-power learning management system (LMS) for sharing information, uploading assignments and after class interaction as well as communication. Therefore, the focus of this study is put on the use of Facebook groups as a LMS in FUF settings and the practical teaching activities used to integrate Facebook groups with courses.

Attention should also be paid to how cultural differences between countries affect adopting Facebook for educational instruction. Not many studies report how cultural variables influence students' learning, but cultural issues deeply influence how students perceive and manage their participation in Facebook groups (Manca & Ranieri, 2016). In the survey conducted by Hamada (2012), it mentioned that though Facebook is the most popular social network service (SNS) in the world, it is not the case in Japan. Less

than 6% of the population uses Facebook, because the most popular SNS in Japan is MIXI, which is available only in the Japanese language. Some scholars conducted surveys in their own countries and propose the idea that there is a need for more investigations from different culture in order to test the generalizability and the applicability of the current study findings. If we want to embrace change of applying Facebook groups in the education system, we need to understand the attitudes and behavior of students from different countries (Dhir et al., 2017; Hamada, 2012; Manasijević et al., 2016; Sanchez et al., 2014). The role of cultures and educational practices in local contexts should also be taken into account when instructors design new educational practices with social network service (Manca & Ranieri, 2013). When searching for studies of implementing Facebook groups for educational purpose in Taiwan, there are few related research studies. The attitude of using Facebook as an instructional tool in higher education in Taiwan hasn't been fully investigated.

As an instructor in the university, I integrate Facebook groups with teaching activities to enhance the learning outcome, provide more interaction between students, offer more opportunities for peer learning and create a relaxing learning environment. I conducted a questionnaire survey with open-ended questions at the end of each semester to investigate students' satisfaction in my teaching activities and course design. From the feedback of my students, many of them mentioned they enjoy the convenience of using Facebook group and the various teaching activities carried out through it. From my teaching experience, the functions and features of Facebook enable a lot of activities that a traditional classroom cannot offer and it provides a more active and interesting platform for communication and feedback. Nevertheless, not many instructors in Taiwan take advantage of this useful and convenient LMS approach. They might not know students' attitude toward using Facebook as an instructional tool. Hence, this study focused on engaging Facebook with course instruction and investigates students' perspectives toward using Facebook as a LMS to assist teaching and learning. This study also tried to evaluate whether using Facebook as a learning environment increases students' social interaction and prompt learning motivation with a goal of providing pedagogical implications.

This study aims to answer the following questions:

- (1) Can Facebook be used as a supportive tool for teaching and learning?
- (2) Does engaging Facebook with course instruction increase students' social interaction and prompt learning motivation?
- (3) What is students' attitude toward using Facebook as an instructional tool and learning management system (LMS)?
- (4) What factors can predict students' satisfaction of using Facebook group as a learning management system?

2. Methods

A questionnaire survey was conducted for this research study. As the instructor, I designed teaching activities integrating with Facebook and use Facebook groups as a learning management system (LMS) in five courses. In this study, students were asked to fill out a questionnaire at the end of semester. Questions 1-10 in section one are used to evaluate the use of Facebook and answer first research question; questions 11-20 in section two are to evaluate their learning motivation as well as social interaction in order to answer second research question, and questions 21-30 in section three are to investigate students' perspectives toward using Facebook as a LMS and answer the third research question. Finally, all those 30 questions were examined to understand what factors have significant correlation with students' satisfaction in using Facebook group in formal setting.

2.1 Participants

As the instructor of five English courses, I implemented FB into my courses to manage my class and assist my teaching activities. A total of 223 students from five courses joined their class Facebook groups to increase classroom interaction and they evaluated the efficiency of engaging Facebook with course design at the end of semester. These five courses include three sophomore "Writing and Presentation" classes and two junior "Career English" courses. Among the three sophomore courses, two of them are students from engineering department and the other from the design department. There are 94 male students and 36 female students. As for the two Career

English courses, the students are all from engineering department. There are 82 male students and 11 female students. In total, there are 176 male students and 47 female students; sex ratio is 79% male and 21% female. Those five courses are required courses from general education, second semester in 2018 and students' English proficiency level is TOEIC 350-550.

2.2 Tool

A questionnaire survey was administered to investigate students' perspective of using Facebook group as a LMS and the efficiency of those instructional activities implemented with Facebook groups.

2.3 The instructional activities

There are nine instructional activities integrating with Facebook in those five courses, including:

- (1) Putting up announcements: announcements from instructor or TAs, sometime can be from students if they have an announcement to make.



Figure 1 TA's announcement

- (2) Sharing resources: students are asked to find subject related information on line and upload them to Facebook to share resources with other classmates (Ex: good cover letter and resume examples for career English course).



Figure 2 Students post subject related information

- (3) Uploading assignments: students can upload their assignments to Facebook and it is easy for both instructor and students to check those assignments on Facebook.



Figure 3 Students upload their assignment

- (4) Peer learning and correction: students post their writing assignments on Facebook and then they assist each other to find mistakes in those writing assignments by replying to the post and leaving suggestions. The instructor can evaluate students' understanding based on the assignments they uploaded and students can participate in peer learning from observing other groups' work.

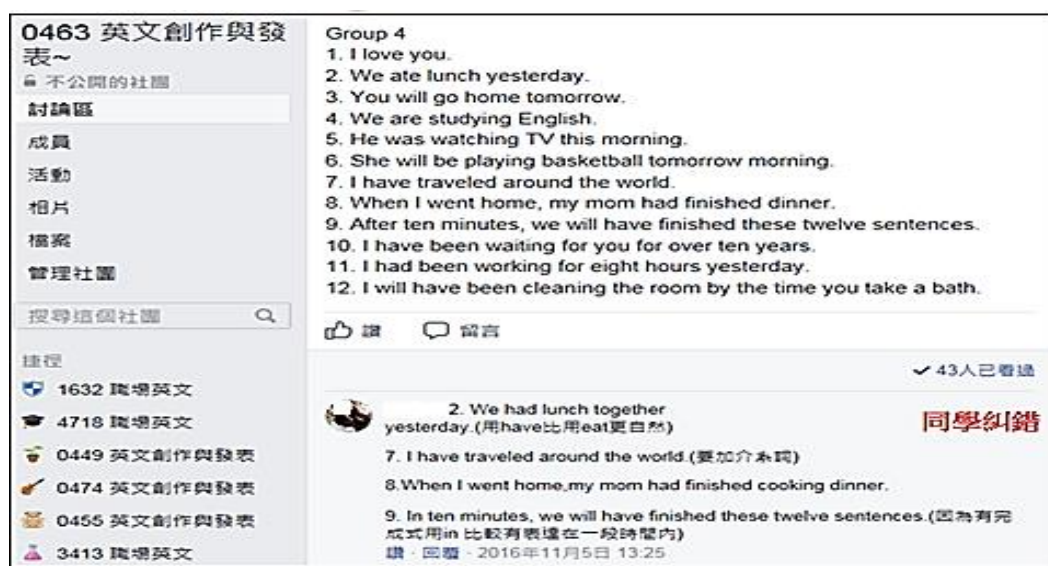


Figure 4 Peers help each other find out mistakes

- (5) Self-evaluation: Each group's presentation is recorded and later uploaded to Facebook. Students can evaluate the own performance through watching uploaded videos to check their posture, body language, eye contact, volume, as well as language fluency. They can evaluate their own performance by watching those films.



Figure 5 Upload students' presentation videos for them to do self-evaluation

- (6) Feedback and social interaction: In the Career English courses, each group has to make a film for their final assignment and upload their recordings to Facebook. Other classmates are asked to reply to the post and give their feedback and suggestions for improvement. Then, each group chooses five feedbacks with great suggestions and give the students who posted those feedbacks rewards.



Figure 6 Students give each other feedbacks

- (7) On-line voting: After groups post their films on Facebook, other students then go on line to vote for the best film to them. For motivation, the top three groups receive extra points as rewards.



Figure 7 Students vote for best group presentation

- (8) Sharing extended information: Instructor and TAs can post related films, articles, images, webs or other subject related information on Facebook for further learning.



Figure 8 Instructor post extra information for sharing

- (9) Arranging meeting time with TA: TAs will post a calendar on FB and groups can use it to arrange a meeting time with TAs. Students can easily find out what time slots are still available and what time slots are not since availability is presented openly on Facebook.



Figure 9 Students can arrange meeting time with TAs through FB

Examples of Instruction process: (take Career English for example)

(1) Putting up announcements:

- such as syllabus or TA information on week 1
- Announced assignments and instructions of doing the assignments



(2) Sharing resources:

- students were asked to find good resume and cover letter examples on line and uploaded to FB to share with whole class
- students read through those examples, combined with what they learned in the class, wrote their own resume and cover letter



(3) Uploading assignments:

- after instructor gave feedbacks to their resume and cover letter assignments, students had to revise their assignment and then uploaded to FB
- students can read others' assignments on FB and learn from each other

2.4 Questionnaire survey (see Appendix 1):

In this study, the questionnaire was designed to focus on the following four areas based on the teaching activities integrating with Facebook.

- (1) Exploring students' attitudes in using of Facebook as a supportive tool for teaching and learning (items 1-10 in section 1).
- (2) Evaluating if using Facebook as an instructional tool can increase students' social interaction and engage learning motivation (items 11-20 in section 2).
- (3) Investigating students' attitude toward using Facebook as an instructional tool and learning management system (items 21-30 in section 3).

Seeking factors that can reliably predict students' satisfaction of using Facebook group as a learning management system (all 30 items).

2.5 Data collection methods:

the questionnaire from Appendix 1 was administered to 223 university students in classes on the twelfth week of the semester to gather information. The dates of data collection: Career English course - class 1429 on 05/15/2018; class 1730 on 05/18/2018. English writing and presentation courses - class 0455 on 05/16/2018; class 0449 on 05/17/2018 and class 0474 on 05/17/2018.

3. Results

At the end of each semester, a questionnaire was administered to investigate the efficiency of incorporating Facebook with normal course activities. The Cronbach's Alpha was calculated to measure the internal consistency of the questionnaire. The Cronbach's Alpha for all returned survey is .941, which indicates the questionnaire is reliable.

The descriptive statistics listed in table 2 explain students' perspective toward the first three research questions. The 10 questions in section one answered the first research question; the 10 questions in section two evaluated the second research question and 10 questions from section three explained the third research question. The means and standard deviations of the 30 items were analyzed to interpret the research questions.

Table 1
Descriptive statistics of questionnaire

descriptive statistics					
	items	minimum	maximum	mean	Standard deviation
Section1: Use Facebook as a supportive tool for teaching and learning					
1. Facebook can be used to post announcements and teaching materials	223	3	5	4.57	.556
2. Facebook can be used to share learning resources between students	223	3	5	4.35	.667
3. Facebook can be used to provide topic related multimedia resources such as videos, music, pictures and audio	223	3	5	4.53	.583
4. Facebook can be used to post announcements and teaching materials	223	3	5	4.57	.556
5. Facebook can be used to share learning resources between students	223	3	5	4.35	.667
6. Facebook can be used to provide topic related multimedia resources such as videos, music, pictures and audio	223	3	5	4.53	.583
7. Facebook can be used to upload assignments	223	1	5	4.18	.842
8. Facebook can be used to observe others students' assignments and learn from each other	223	2	5	4.27	.722
9. Facebook can be used to provide answers to assignments	223	3	5	4.52	.584
10. Facebook can be used to do peer review and correction	223	2	5	3.85	.877
11. Facebook can be used to give feedback to other students	223	2	5	4.17	.783
12. Facebook can be used to do on-line voting to obtain other students' opinions	223	2	5	4.24	.812
13. Facebook can be used to upload assignments	223	1	5	4.18	.842
14. Facebook can be used to observe others students' assignments and learn from each other	223	2	5	4.27	.722
15. Facebook can be used to provide answers to assignments	223	3	5	4.52	.584
16. Facebook can be used to do peer review and correction	223	2	5	3.85	.877
17. Facebook can be used to give feedback to other students	223	2	5	4.17	.783
18. Facebook can be used to do on-line voting to obtain other students' opinions	223	2	5	4.24	.812
19. Facebook can be used as a platform to facilitate group discussion	223	1	5	3.81	.993

Table 1 Continued

Section2: Can use Facebook group as an instructional tool increase students' social interaction and prompt learning motivation	items	minimum	maximum	mean	Standard deviation
20. The use of Facebook group improves communication between students	223	1	5	3.64	.919
21. The use of Facebook group improves communication between teacher and students	223	2	5	3.96	.781
22. The use of Facebook group improves group discussion and collaboration	223	1	5	3.62	.912
23. The use of Facebook group helps me know my peers better	223	1	5	3.29	.972
24. The use of Facebook group helps build a close social relationship	223	1	5	3.36	.990
25. The use of Facebook group creates a good learning atmosphere	223	1	5	3.65	.841
26. The use of Facebook group increases learning motivation	223	1	5	3.45	.904
27. The use of Facebook group increases my learning efficiency	223	2	5	3.79	.856
28. The use of Facebook group makes students more willing to express their thoughts and opinions	223	1	5	3.73	.949
29. The use of Facebook group provides shy students a comfortable environment to express themselves.	223	2	5	3.25	.616
Section3: Students' attitude toward using Facebook as an instructional tool and learning management system (LMS)	items	minimum	maximum	mean	Standard deviation
30. Being familiar with Facebook, it is easy to use it for class activities	223	2	5	4.12	.713
31. Facebook is a convenient tool for sharing teaching and learning resources	223	2	5	4.30	.675
32. Facebook makes communication between teacher and students more efficient	223	2	5	4.08	.761
33. A Facebook group is a safe environment for sharing ideas and thoughts because it is a closed group	223	1	5	3.75	.976
34. Facebook group would violate my privacy	223	1	5	2.65	.903
35. My peers can only see the messages and resources post in Facebook group, not my personal information	223	1	5	3.68	.835
36. Facebook group can effectively improve teaching and learning outcomes.	223	2	5	3.85	.766
37. Facebook group is a better learning management system than others, such as E-campus	223	1	5	4.14	.922
38. Using Facebook group as a learning management system is satisfactory	223	1	5	3.89	.823
39. Other courses should also use Facebook group to assist teaching	223	1	5	3.78	.927

From the descriptive statistics shown in table 1, the mean of all 30 questions is 3.89. Since the score of the questionnaire is 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree, we can see the overall mean 3.89 is

leaning towards agree and demonstrates students mostly hold positive attitudes towards engaging with Facebook for course activities.

If the three sections are examined separately, the total mean score of section one (question 1-10) is 4.24. Section one questions investigate students' perspectives toward using Facebook as a supportive tool for teaching and learning in order to answer the first question of this research study. The result of 4.24 suggests students have high satisfactory of using Facebook as a great supportive tool for teaching and learning.

As for section 2 (question 11-20) the total mean is 3.61. Section two questions investigate whether using Facebook group as an instructional tool can increase students' social interaction and prompt learning motivation in order to answer the second research question of this study. This section has the lowest mean score among the three sections and the score 3.61 indicates students do not strongly support that Facebook group can increase students' social interaction and drive learning motivation.

The mean of section 3 (question 21-30) is 3.82. This section investigates students' attitudes towards using Facebook as an instructional tool and learning management system (LMS) in order to answer the third question of this research study. Since the mean of the 30 questions is 3.89, items score above that are considered supportive. The mean 3.82 is close to 3.89; therefore, the result demonstrates positive attitudes.

Among all the items, question 1 gets the highest score. This indicates that students strongly agree Facebook is a great tool to post announcements and teaching materials. Question 25 has the lowest score which is 2.65. However, the statement is "Facebook group would violent my privacy", the low score indicates that students do not think Facebook group would violent their privacy. As for question 22, Facebook is a convenient tool for sharing teaching and learning resources, the score is 4.30. The score states that one of the reasons students like using Facebook as an instructional tool is because it is convenient.

Table 2

The comparisons of items above and below mean (3.89)

Items score above mean (3.89)	Mean	section
Q1 Facebook can be used to post announcements and teaching materials	4.57	1
Q3 Facebook can be used to provide topic related multimedia resources such as videos, music, pictures and audio	4.53	1
Q6 Facebook can be used to announce answers to assignments	4.52	1
Q2 Facebook can be used to share learning resources between students	4.35	1
Q22 Facebook is a convenient tool for sharing teaching and learning resources	4.30	3
Q5 Facebook can be used to observe others students' assignments and learn from each other	4.27	1
Q9 Facebook can be used to do on-line voting to see other students' opinions	4.24	1
Q4 Facebook can be used to upload assignments	4.18	1
Q8 Facebook can be used to give feedbacks to other students	4.17	1
Q28 Facebook group is a better learning management system than others, such as E-campus	4.14	3
Q21 Being familiar with Facebook, it is easy to use it for class activities	4.12	3
Q23 Facebook makes communication between teacher and students more efficient	4.08	3
Q12 The use of Facebook group improves communication between teacher and students	3.96	2
Q29 Using Facebook group as a learning management system is satisfactory	3.89	3
Items score below mean (3.89)		
Q27 Facebook group can effectively improve teaching and learning	3.85	3
Q7 Facebook can be used to do peer correction	3.85	2
Q10 Facebook can be used as a platform to do group discussion	3.81	1
Q18 The use of Facebook group increases my learning efficiency	3.79	2
Q30 Other courses should also use Facebook group to assist teaching	3.78	3
Q24 Facebook group is a safe environment for sharing ideas and thoughts because it is a closed group	3.75	3
Q19The use of Facebook group makes students more willing to express their thoughts and opinions	3.73	2
Q26 My peers can only see the messages and resources post in Facebook group, not my personal information	3.68	3
Q16The use of Facebook group creates a good learning atmosphere	3.65	2
Q11 The use of Facebook group improves communication between students	3.64	2
Q13 The use of Facebook group improves group discussion and collaboration	3.62	2
Q20 The use of Facebook group provides shy students a comfortable environment to express themselves	3.61	2
Q17 The use of Facebook group increases learning motivation	3.45	2
Q15 The use of Facebook group helps build a close social relationship	3.36	2
Q14 The use of Facebook group helps me know my peers better	3.29	2
Q25 Facebook group would violent my privacy	2.65	3

When comparing all the individual items above the mean with individual items below the mean to investigate students' attitude toward the three sections in the questionnaire, it is quite obvious that most questions from section one are above mean (Question 1,2,3,4,5,6,7,8,9). This indicates that students support most of the aspects of using Facebook as a supportive tool for teaching and learning. However, when considering Facebook group as an instructional tool to increase students' social interaction and prompt learning motivation, most of the items in this section score below 3.89 (Question 11,13,14,15,16,17,18,19,20). Students do not strongly believe Facebook group can create social interaction and prompt motivation. As for section three investigating students' attitude toward using Facebook as an instructional tool and learning management system (LMS), half of the items are above the mean for all items (Question 21,22,23,28,29) and half below (Question 24,25,26,27,30). The five questions above mean from section 3 are related to students' satisfactory of using Facebook as a LMS and the result is positive.

There are two questions from section 1 that do not score above the total mean. Question 10 (Facebook can be used as a platform to do group discussion) scores 3.81. The possible reason could be the use of "Line" platform. The software "Line" is very popular in Taiwan and students tend to communicate with each other through line; therefore, they might use line for their group discussion. Question 7 (Facebook can be used to do peer correction) scores 3.85 which means students do not strongly support using Facebook to do peer correction is efficient. The only question from section 2 score above the total mean is question 12 (The use of Facebook group improves communication between teacher and students) which scores 3.96. This indicates students support that Facebook makes the communication between teacher and students easier.

There are five questions from section three that score above the total mean-question 21 (being familiar with Facebook, it is easy to use it for class activities), question 22 (Facebook is a convenient tool for sharing teaching and learning resources), question 23 (Facebook makes communication between teacher and students more efficient), question 28 (Facebook group is a better learning management system than others, such as E-campus) and question 29 (Using Facebook group as a learning

management system is satisfactory). The result indicates that students are satisfied with using Facebook group as LMS.

To further investigate the factors that affect students' satisfaction toward using Facebook group as a LMS, Pearson correlations are conducted to explore the correlation of the three sections and question 29.

Table 3
The correlation of the three sections and question 29

	Section 1	Section 2	Section 3
Section 1	-		
Section 2	.41**	-	
Section 3	.61**	.64**	-
Question 29	.53**	.41**	.80**

* $p < .05$, ** $p < .01$, *** $p < .001$
Question 29: Using Facebook group as a learning management system is satisfactory

Table 3 is the analysis of Pearson correlation. From the result, section 1 ($r = .53$, $p < .01$), section 2 ($r = .41$, $p < .01$) and section 3 ($r = .80$, $p < .01$) all have significant correlation with question 29. Section 3 shows an extremely high score of correlation.

In order to investigate what factors can predict students' satisfaction towards using Facebook group as a LMS, a regression analysis was conducted to analyze the 30 items and question 29 (satisfaction of using Facebook as LMS).

Table 4
Predicting factors that affect satisfactory of using Facebook as LMS

Regression Analysis (Stepwise)				
Model	Predictors	R Square	Beta	Sig
1	Q30	.506**	.711	.000
2	Q30	.611**	.516	.000
	Q20		.378	.000
3	Q30	.663**	.406	.000
	Q20		.328	.000
	Q28		.270	.000
4	Q30	.685**	.384	.000
	Q20		.275	.000
	Q28		.246	.000
	Q24		.167	.000

Table 4 Continued

Regression Analysis (Stepwise)				
5	Q30	.693**	.381	.000
	Q20		.191	.001
	Q28		.232	.000
	Q24		.157	.000
	Q18		.132	.018
6	Q30	.701**	.374	.000
	Q20		.154	.011
	Q28		.217	.000
	Q24		.145	.001
	Q18		.136	.014
	Q5		.107	.014
7	Q30	.707**	.365	.000
	Q20		.185	.003
	Q28		.214	.000
	Q24		.126	.005
	Q18		.132	.016
	Q5		.096	.026
	Q25		-.079	.045
Dependent Variable: Q29 (Using Facebook group as a learning management system is satisfactory)				

The stepwise regression analysis was employed to predict students' satisfaction toward using Facebook group as a LMS (Question29). For the first step, question 30 was entered into the model. It was significantly correlated with question 29, as shown in Table 4. Question 30 ($R^2 = 0.506^{**}$, $p < .001$) and can predict 50.6% of students' satisfaction toward using Facebook group as a LMS. On the following steps, predictors were entered gradually, resulting in a significant increase of $R^2 = 0.707^{**}$, $p < .001$ in Model 7. This indicates the seven factors (question 30, 20, 28, 24, 18, 5, 25) can predict 70.7% of students' satisfaction toward using Facebook group as LMS. The result indicates teachers should consider these seven factors when engaging Facebook in course design to increase students' satisfactory toward using Facebook group as a LMS.

Question 25 (Beta = -0.079, $p < .05$) has significantly negative correlated with question 29 which means if the score of question 25 (Facebook group would violent my privacy) is high, question 29 (Using Facebook group as a learning management system is satisfactory) would be low.

4. Discussion

From the results, descriptive statistics (table 1) indicate students strongly support that Facebook be used as a tool for teaching and learning. The statement “Facebook can be used to post announcements and teaching materials” score as high as 4.57, and other aspects such as - “Facebook can be used to share learning resources between students”, “to provide topic related multimedia resources”, “to upload assignments”, “to observe others students’ assignments as well as learn from each other”, “to give feedback” and “to provide answers to assignments” - all score above mean (3.89). Those Facebook functions can be easily implemented with textbooks and teaching activities; therefore, students show strong agreement with this aspect.

As for the second research question whether engaging Facebook with course instruction increases students’ social interaction and build learning motivation, the results do not strongly support those aspects. From the literature review, researchers suggest that Facebook provides an active learning environment and increase social interactions (Ractham et al., 2012). With appropriate instructions and well organized teaching activities, it can enhance students’ learning motivation and social interaction (Balcikanli, 2015; Brahmi, 2016; Kabilan et al., 2010; Lonn & Teasley, 2009; Mendez et al., 2014; Ractham et al., 2012; Salameh, 2017). Nevertheless, the result from table 2 shows almost all the items from section two which related to students’ social interaction and learning motivation score below the mean. One possible reason can be there are no teaching activities specially designed to prompt students’ social interaction. In the previous research studies, researchers pointed out the importance of instruction and mentioned that the success of enhancing learning motivation and social interaction relies on appropriate instructions as well as well-organized teaching activities. Another possible reason might be because students do not regard the instructional interaction as social interaction. “The use of Facebook group provides shy students a comfortable environment to express themselves” scores 3.25. It was thought that students who are too shy to express themselves under the spotlight in the class might be more willing to express opinions with text on Facebook. However, the result did not support this. The score 3.25 shows students do not think shy students are more comfortable with

expressing themselves on Facebook. “The use of Facebook group helps me know my peers better” score 3.29 indicates students do not think they can get to know their peers better through Facebook. They might give each other feedback and reply to their peers’ post, but this does not help them get to know each other. “The use of Facebook group helps build a close social relationship” scores 3.36 which means students do not support that Facebook helps to build a close social relationship. The interaction through instructional activities might not be considered social interaction to them. It may seem that students are connected on the FB in the virtual world, but they don’t really feel they are connected with each in the real world. They still feel alienated from each other.

As for the third research question, the statistics from table 1 indicate that students believe Facebook can be used as an instructional tool and LMS. The item “Facebook is a convenient tool for sharing teaching and learning resources” scores 4.30, “Facebook makes communication between teacher and students more efficient” scores 4.08, “Facebook group is a better learning management system than others, such as E-campus” scores 4.14 and “Using Facebook group as a learning management system is satisfactory” scores 3.89. The results show students are strongly satisfied with using Facebook as a LMS.

To investigate what factors affect the satisfaction of using Facebook group as a LMS, a regression analysis (Table 4) was conducted. The result shows seven factors- (1) “Other courses should also use Facebook group to assist teaching”, (2) “The use of Facebook group provides shy students a comfortable environment to express themselves”, (3) “Facebook group is a better learning management system than others, such as E-campus”, (4) “Facebook group is a safe environment for sharing ideas and thoughts because it is a closed group”, (5) “The use of Facebook group increases my learning efficiency”, (6) “Facebook can be used to observe others students’ assignments and learn from each other”, (7) “Facebook group would violent my privacy”-show significant correlation with the satisfaction in using Facebook groups and can best predict it. The statistic of model 7 is $R^2 = 0.707^{**}$, $p < .001$ which indicates the seven factors can predict 70.7% of students satisfition. What this tells us is Facebook should be implemented widely in other courses as the LMS, and Facebook can be used for peer review so that students can learn from each other in order to increase learning efficiency in a comfortable and safe environment where their privacy is not violated.

5. Conclusion

A lot of research studies have been conducted to investigate the possibilities of using Facebook as an instructional tool with positive results (Baran, 2010; Kabilan, et al., 2010; Lambić, 2016; Lonn & Teasley, 2009; Madge et al., 2009; Manasijević et al., 2016; Manca & Ranieri, 2013, 2016; Ractham et al., 2012; Ranieri et al., 2012; Sharma et al., 2016; Wang et al., 2012). To further explore the issue, this research study was carried out to specifically investigate students' perspective toward using Facebook as an LMS for instructional purpose in higher education in Taiwan to provide an alternative teaching method to meet the needs of the digital generation. A questionnaire survey was carried out to investigate four research questions: (1) Can Facebook be used as a supportive tool for teaching and learning? (2) Does engaging Facebook with course instruction increase students' social interaction and prompt learning motivation? (3) What is students' attitude toward using Facebook as an instructional tool and learning management system? (4) What factors can better predict students' satisfaction of using Facebook group as a LMS?

From the study, students strongly support that Facebook can be used as an instructional tool for teaching and learning activities. However, the result did not necessarily support that using Facebook can increase students' social interaction and prompt learning motivation. The interactions through instructional activities are not considered social interaction to respondents and connecting in the virtual world does not make them feel connected in real world. Nevertheless, students believe that Facebook group is a convenient LMS for sharing teaching and learning resources and make the communication between teacher and students easier. Although most students communicate in Mandarin, some students who demonstrated more confidence with their English abilities would correspond with the course instructor, teaching assistant and fellow students in English. The seven factors that can best predict students' satisfaction of using Facebook group as a LMS suggest Facebook can be implemented widely in other courses to replace other LMS platform. Facebook can be used for peer review in order to increase learning efficiency. Also, Facebook should be used in a comfortable and safe learning environment where students' privacy is respected and protected.

Based on the results, my suggestions for using FB as LMS are the followings:

- (1) Use FB as a tool to communicate with and contact students. Students are more willing to use FB because it is convenient and not so formal.
- (2) Use FB as a tool to post syllabuses, general and essential information, and reminders for assignments instructions as well as deadlines. Upload important documents on FB make it easier for students to find the information they need.
- (3) Use FB as a tool for peer review. Students can upload their assignments on FB, and their peers have access to review the uploaded assignments. Other students can also read the assignments and suggestions from other groups. They can learn from each other.
- (4) Use FB as a tool to collect feedbacks. Students can post their PowerPoint presentation and other media to allow constructive feedback from their peers. This is a very convenient way to gather feedbacks from everyone in the class

Of course, there are other ways to integrate FB into course activities, the suggestions above are just some examples. What I would like to suggest here is the useful and convenient functions FB can provide to boost teaching and learning and provide an easier way for teachers and students to contact and communicate with each other.

Although this research study investigates and reveals students' attitude towards engaging Facebook groups in higher education in Taiwan, there are limitations. First, well-organized instructional activities are directly related to the satisfactory of integrating Facebook groups, but the design of teaching activities are not considered in this research study. Secondly, though it seems that Taiwanese students are quite open with using Social Networking as an instructional tool and demonstrate positive attitude, the discussion of cultural issues and local context implementation are not included in this research study. Third, this study mainly focuses on using FB as LMS to manage effective teacher-student communication and assisting teaching activities. There is no design to use Facebook as a direct teaching attribute; however, there is potential to use it. These three aspects require future investigation.

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Appendix 1

我國大學生對使用 FACEBOOK 社團當作教學工具及學習管理系統看法之間卷調查

親愛的同學您好:

這份問卷主要是想瞭解您對使用 FACEBOOK 社團當作教學工具及學習管理系統的看法，以做為學術研究之用，所以非常需要您提供意見。這沒有標準答案，您只需依照您真實的看法回答即可。每一題都要完成作答，都會列入統計分析。您所填的任何資料都是絕對保密，不會對您的學業成績或其他方面有任何影響，請放心填答！謝謝您的協助。

* 填答說明：請就您的看法，分別評估以下每一項目，依照您同意的程度作勾選。

Use Facebook as a supportive tool for teaching and learning 使用 Facebook 來支援教學與學習	非常同意	同意	普通	不同意	非常不同意
1. Facebook can be used to post announcements and teaching materials Facebook 可以用來公告訊息及張貼教材					
2. Facebook can be used to share learning resources between students Facebook 可以讓學生們互相分享學習資源					
3. Facebook can be used to provide topic related multimedia resources such as videos, music, pictures and audio Facebook 可以用來提供主題相關的多媒體資源，如影片、音樂、圖 片或音檔					
4. Facebook can be used to upload assignments Facebook 可以用來上傳作業					
5. Facebook can be used to observe others students' assignments and learn from each other Facebook 可以用來觀摩其他同學的作業並互相學習					
6. Facebook can be used to announce answers to assignments Facebook 可以用來公告作業的答案					
7. Facebook can be used to do peer correction Facebook 可以用來做同儕批改					
8. Facebook can be used to give feedbacks to other students Facebook 可以用來給予其他同學回饋					
9. Facebook can be used to do on-line voting to see other students' opinions Facebook 可以用來進行線上投票以便了解其他同學的想法					
10. Facebook can be used as a platform to do group discussion Facebook 可以用來做小組討論的平台					
Can use Facebook group as an instructional tool increase students' social interaction and prompt learning motivation 使用 Facebook 為教學的工具可否增加學生的社交互動及增進學習動機	非常同意	同意	普通	不同意	非常不同意
11. The use of Facebook group improves communication between students					

使用 Facebook 社團可以促進學生之間的溝通					
12. The use of Facebook group improves communication between teacher and students 使用 Facebook 社團可以促進老師與學生間的溝通					
13. The use of Facebook group improves group discussion and collaboration 使用 Facebook 社團可以促進小組討論和合作學習					
14. The use of Facebook group helps me know my peers better 使用 Facebook 社團讓我更認識其他同學					
15. The use of Facebook group helps build a close social relationship 使用 Facebook 社團可以建立更親近的社交關係					
16. The use of Facebook group creates a good learning atmosphere 使用 Facebook 社團可以建立良好的學習氛圍					
17. The use of Facebook group increases learning motivation 使用 Facebook 社團可以促進學習動機					
18. The use of Facebook group increases my learning efficiency 使用 Facebook 社團可以提高學習效率					
19. The use of Facebook group makes students more willing to express their thoughts and opinions 使用 Facebook 社團讓同學們更願意表達他們的想法與意見					
20. The use of Facebook group provides shy students a comfortable environment to express themselves. Facebook 社團提供害羞的同學一個輕鬆的環境來表達他們自己					
Students' attitude toward using Facebook as an instructional tool and learning management system (LMS) 學生對於使用 Facebook 為教學工具及學習管理系統的態度	非常同意	同意	普通	不同意	非常不同意
21. Being familiar with Facebook, it is easy to use it for class activities 因為對 Facebook 很熟悉，所以能很容易的應用到課程使用					
22. Facebook is a convenient tool for sharing teaching and learning resources Facebook 是分享教學及學習資源很方便的工具					
23. Facebook makes communication between teacher and students more efficient Facebook 讓老師及同學間的溝通更有效率					
24. Facebook group is a safe environment for sharing ideas and thoughts because it is a closed group Facebook 社團是一個能安全表達想法及意見的環境，因為社團是不公開的					
25. Facebook group would violent my privacy Facebook 社團會侵犯我的隱私					
26. My peers can only see the messages and resources post in Facebook group, not my personal information 同學們只能看到張貼在社團裡的訊息及資訊，而非我的私人訊息					
27. Facebook group can effectively improve teaching and learning Facebook 社團可以有效地增進教學與學習					
28. Facebook group is a better learning management system than others, such as E-campus					

INTERGRATE FACEBOOK INTO TEACHING

Facebook 社團比其他學習管理系統（例如網路學園）更好					
29. Using Facebook group as a learning management system is satisfactory 使用 Facebook 社團當作學習管理系統令人感到滿意					
30. Other courses should also use Facebook group to assist teaching 其他課程也應該使用 Facebook 社團協助教學					

【問卷作答至此結束，再次感謝您的幫忙與協助。】

與臉書碰面：臺灣大學生對臉書如何在 高等教育課程促進學習的看法

蘇姿文¹

摘要

Facebook 是最受大學生歡迎的社交網站之一。這篇研究主要想探討大學生對在大學課程中使用 Facebook 當作學習管理系統（LMS）以協助教學與學習活動的看法。本研究針對臺灣中部一所大學的 223 位學生做了問卷調查，以探討下列研究問題：一、Facebook 可以當作協助教學與學習的工具嗎？二、在課程教學中結合 Facebook 能增進學生的互動並提升學習興趣嗎？三、學生對使用 Facebook 當作學習管理系統（LMS）的態度為何？四、哪些因素會影響學生對使用 Facebook 來當作學習管理系統（LMS）的滿意度？研究結果顯示學生們普遍認為 Facebook 是一個能協助教學活動的便利工具，但是它無法真正地增進學生們的社交互動或引發學習興趣。七個最能影響學生對使用 Facebook 當作學習管理系統滿意度的因素指出，Facebook 應該在舒服、安全、保障隱私權的環境中，廣泛的應用在課程中協助教學，並用來做同儕修改以增加學習成效。

關鍵詞：臉書、學習管理系統、創意教學

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