Perception of Social Networking Benefits in the Support of a PBL Module According to Students' Performance Levels

Sophapun Ekarattanawong PhD*, Amornnat Thuppia MSc*,
Pholasit Chamod MSc*, Pattharawin Pattharanitima MD**,
Nuchanart Suealek PhD*, Panadda Rojpibulstit MSc*

** Department of Preclinical Science, Faculty of Medicine, Thammasat University, Rangsit Campus, Pathumthani, Thailand*
*** Department of Internal Medicine, Faculty of Medicine, Thammasat University, Rangsit Campus, Pathumthani, Thailand*

Background: *The use of social networking to all levels of medical teaching as a communication tool between instructors and students has drawn much interest and increased usage. As Facebook is one of the most popular social networking sites among students, a Facebook page has been used in the Genitourinary System problem-based learning (PBL) course at the Faculty of Medicine, Thammasat University in the year 2014.*
Objective: *The objective of this work is to study the perception of using a Facebook page to support PBL in an integrated pre-clinical year course.*
Material and Method: *The Genitourinary System course committee introduced Facebook page to the 2nd year medical students who enrolled and instructors involved in the course. At the beginning of the course, the objectives of Facebook page setting were informed as follows: 1) public relations, 2) channel for questions and responses to address curiosities between students and instructors, 3) learning stimulation and 4) supporting good relationship between course coordinators and students. The participants consisted of 177 students who voluntarily allowed their opinion to be used in analysis and dissemination after completing a questionnaire about using the Facebook page in PBL at the end. A Likert scale was used to determine satisfaction scores for nine questions. Finally, the mean satisfaction was compared for each question and for students with different academic performances (great, good, fine, weak).*
Results: *The students liked the page (averaged satisfaction score 4.64) and wanted it to continue to be used in coursework (4.63), especially for students at mid-level when compared to students with great performances ($p<0.05$). It was beneficial in allowing questions to be directed to instructors, both in lecture learning (4.54) and SDL (4.35), and lessened the time it took to understand content in SDL (4.03). However, although it did not create stress (2.10), students had not made full use of it, as much as they could (3.25), as they were not able study all posts in detail (3.68). Therefore, if the Facebook pages were developed for students to study in more detail, it would enhance its benefits as SDL stimulus (4.09).*
Conclusion: *Using social networking, particularly Facebook pages, achieved all the four the stated objectives. Since this was the first time social networking was applied, some of faculty members had concern that their personal information would be disseminated to the public. Moreover, there was still minimal knowledge of sharing among students. The Facebook "closed group" with a good protective system may be an interesting option to enhance effectiveness in integrated PBL-styled courses.*

Keywords: *PBL, Medical education, Social media, Social networking, Facebook page*

J Med Assoc Thai 2015; 98 (Suppl. 2): S77-S83
Full text. e-Journal: *http://www.jmatonline.com*

Social networking refers to websites that allow for descriptions, discussions, comments, opinion expression, and sharing of information of text, pictures, and videos. The examples of remarkable social networking websites are Facebook, Twitter, LinkedIn, Pinterest, Google Plus, Instagram, etc. In today's world, social media and information on social networks have become significantly influential in our daily lives, especially among Thai youths. As such, applying social media as a learning tool for students in the 21st century has become much more interest[1].

Of all social networks, Facebook is, by far,

Correspondence to:
Ekarattanawong S, Division of Physiology, Department of Preclinical Sciences, Faculty of Medicine, Thammasat University, Rangsit Campus, Khlongluang, Pathumthani 12120, Thailand.
Phone: +66-2-9269710, Fax: +66-2-9269711
E-mail: sophapun@hotmail.com

considered the most popular social media and has the highest usage in the country[2]. In a survey of online usage behavior of Thai medical students, it was found that Facebook played the most part in the students' daily lives[3]. Therefore, the Course Curriculum Committee has chosen Facebook to enhance learning in course MD 215: The Genitourinary System.

The content of MD 215 course comprised of embryology, histology, gross anatomy, physiology, biochemistry, pharmacology, pathology of urinary system, male reproductive system and female reproductive system. The content begins from cells, function, related hormones, and irregularities of diseases commonly found in nephrology, urological surgery, and obstetrics and gynecology. The educational format includes various forms, namely 34 hours of lectures (28%), 24 hours of tutorial groups and small group discussions (20%), 21.5 hours of lab (18%), and 34 hours of self-directed learning; SDL (28%). As such, to create effective teaching time, the Course Curriculum Committee wanted to establish an outside-the-classroom public relations method to speed up teaching, stimulate the vast number of students, and to answer student questions beyond the classroom, reviewing content, and self-learning from other sources.

This is the first time use of a Facebook application at the Faculty of Medicine, Thammasat University. The objectives of the pages were: 1) quick and widespread public relations to students who registered for the course, 2) support quick two-way communication in asking and answering questions about lectures, SDL and tutorial sessions, 3) stimulate medical students to be eager to learn in the short four weeks of learning and 4) promote good relationships among the instructors, block coordinators, and students.

Material and Method

The PBL teaching model of preclinical curriculum at the Faculty of Medicine, Thammasat University is organized into blocks. The time of each block is according to the number of credits for each course. Course MD 215: The Genitourinary System offered four credits over four weeks of teaching. This is the shortest period compared to other courses of the same year, which offer six credits over six weeks for each course.

Before teaching began, MD 215: The Genitourinary System Facebook page was launched on Facebook and had a public relations campaign to invite students, faculty members, instructors, and related persons to participate in making use of the online page. The objectives of creating the page had been established. The 177 2nd year medical students who wanted to register for the course were invited to press "Like" to become members of the page and to participate in activities during their time in the four-week course (from January 20 to February 14, 2014). The students were asked to complete a questionnaire on the opinion of the Facebook page after the course had finished, concerning their satisfaction in using online social media in addition to the traditional classroom learning and about PBL.

The questionnaire consisted of nine items as follows: The page was beneficial in answering questions about lectures. The page was beneficial in answering questions about SDL, the page was a stimulating media for SDL, the page helped in lessening time required for SDL as there was a resource person (RP)'s answer. Students had studied various posts such as questions, answers, and comments in detail; the page caused more stress, student made use of the page to the utmost benefit, students likeed the page and students would like to see the page for other courses. A Likert scale was used for scaling satisfaction of each student in his/her response to each question. The differences of mean satisfaction scores for each question were analyzed by pair-t-test.

To study the students' perception of the page benefits according to students' performance level, students were categorized into four groups according to their own summative evaluation MCQ scores. The four groups and rating of their MCQ scores were 1) >74-100 = great 2) 64-73 = good 3) 54-63 = fine and 4) <54 = weak depending on analytical data results of the MCQ summative exam paper (mean 64.017, difficulty index 0.643, discrimination index 0.263). The average satisfaction scores of students categorized into their academic performance were compared via one-way ANOVA using SPSS. Finally, LSD Post hoc test was used to analyze which pairs of student groups were significantly different.

A comprehensive study of the page information such as interaction (post, like, click, comment, and message) used the "insights" tool, which only page administrators can view.

Results

In-depth information about posts according to objectives

From the 223 people who pressed "Like", 177

medical students registered for the course and became members of the page. The number of messages posted by the administrators of the Facebook page was 38 messages. The summary of information access and interest are in the Table 1. Among the four objectives of the page, the most successful objective depending on the highest average percentage of clicks and "Like" per page was promotion of good relationships between block coordinators and students (103.33). The second successful objective was supporting quick two-way communication in asking and answering questions about lectures, SDL and tutorial sessions by high average percentage of clicks and "Like" per page (63.37), whereas the lowest success objective was quick and widespread public relations to students (45.55) and stimulated medical students to be eager to learn in a short period of learning time (34.78). Besides posts by Page administrator, students wrote and posted questions. The number of questions posted by the students was 10 messages. All of the answers were replied to and posted by RPs for the content. In addition, the number of private questions sent by the students to the Page administrator was 30 (data not shown).

Results of questionnaire

Of all 177 students who were members of the page, all 177 of them (100%) completed the questionnaire and agreed to allow their information to be disseminated. A survey of satisfaction and benefits of the page (5 = most, 1 = least), of which the results are summarized in Table 2.

It can be concluded that medical students liked the page (4.63±0.65) and wanted to have one for the other courses (4.64±0.62), to be used to answer questions about lectures (4.54±0.72), and about SDL (4.35±0.80). The page had helped to lessen the amount of time it took for the RP to address questions in class (4.03±0.94). However, students still had not used the page to its fullest benefit (3.68±1.00), not having studied the posts in detail (3.75±1.10). Therefore, if medical students studied the posts in detail, the page would enhance the learning experience, as the page is a media,

Table 1. In-depth information about posts by course coordinator (page administrator) according to objectives

Objective of the post	Number of posts	Average information access	Average clicks per post	Average "Likes"/ comments/ shares	Percentage of "Likes" and clicks per post (%)
Public relations	25	268.08	75.96	34.60	45.55
Summary of questions and answers	3	282.33	67.33	42.67	63.37
Stimulating eagerness to learn	6	291.33	99.66	34.66	34.78
Promoting good relationships	7	332.00	47.14	48.71	103.33

Table 2. Average satisfaction score of each item

Number	Item	Average satisfaction
1	FP was beneficial in answering questions about lectures	4.54±0.72
2	FP was beneficial in answering questions about SDL	4.35±0.80
3	FP was a stimulating media for SDL	4.09±0.90
4	FP help in lessening time required for SDL as there was an RP to help answer questions	4.03±0.94
5	Students have studied various posts such as questions, answers, and comments in detail	3.75±1.10
6	FP cause more stress	2.10±1.35
7	Student make use of the FP to the most of its benefits	3.68±1.00
8	Student like the FP	4.63±0.65
9	Student would like to see a FP for other courses	4.64±0.62

FP = Facebook page, Numbers are mean ± SD, n = 177

which stimulates SDL (4.09±0.90) and did not cause stress among students (2.10±1.35).

Comparing the average satisfaction of each question

Due to the major objective of the Facebook page setting, comparing average satisfaction about the benefits of the page in answering questions from traditional classroom learning and SDL with other questions is shown in Fig. 1, 2, respectively. It can be concluded that the page was more beneficial in answering questions from classroom learning than in addressing questions in SDL session (p<0.05). In addition, students benefited less from the page in using it as a learning stimulant for SDL (p<0.01) by studying

Table 3. Average satisfaction score categorized into MCQ scores of student performance

Number	Items	Academic performance				Statistical significance
		Great (n = 25)	Good (n = 41)	Fine (n = 58)	Weak (n = 53)	
1	FP was beneficial in answering questions about lectures	4.60±0.65	4.51±0.60	4.64±0.64	4.43±0.91	0.49
2	FP was beneficial in answering questions about SDL	4.32±0.75	4.29±0.75	4.43±0.75	4.32±0.92	0.83
3	FP was a stimulating media for SDL	4.12±0.93	4.12±0.79	4.16±0.83	3.96±1.02	0.68
4	FP help in lessening time required for SDL as there was an RP to help answer questions	3.88±1.01	3.98±0.94	4.12±0.90	4.04±0.98	0.73
5	Students has studied various posts such as questions, answers, and comments in detail	3.48±1.01	3.76±1.16	3.81±1.12	3.79±1.08	0.63
6	FP cause more stress	2.36±1.58	2.32±1.19	1.93±1.26	2.00±1.44	0.37
7	Students make use of the FP to the most of its benefits	3.28±1.14	3.73±0.78	3.84±0.97	3.64±1.09	0.12
8	Students like the FP	4.56±0.65	4.54±0.75	4.76±0.54	4.58±0.69	0.31
9	Students would like to see a FP for other courses	4.48±0.65*	4.54±0.64	4.83±0.43*	4.60±0.72	0.03*

FP = Facebook page, Numbers are mean ± SD, n = 177

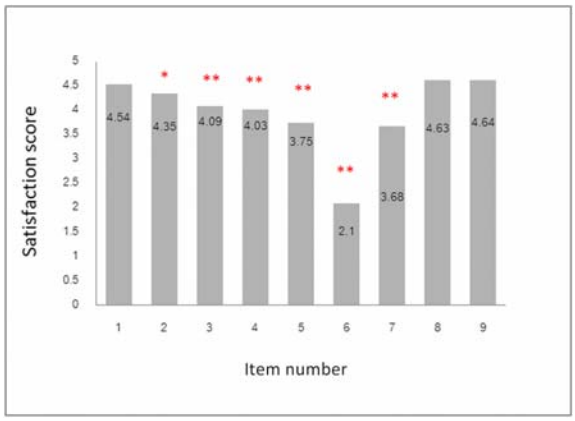

Fig. 1 The comparison of average satisfaction of each item to item number 1 using paired t-test (*p< 0.05, ** p< 0.01 when compared with item No. 1).

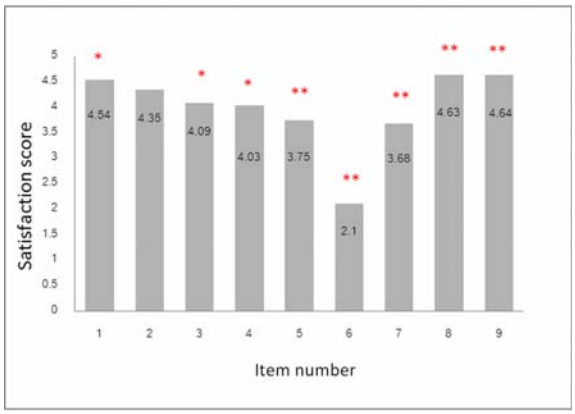

Fig. 2 The comparison of average satisfaction of each item to item number 2 using paired t-test (*p< 0.05, **p<0.01 when compared with item No. 2).

various posts both from the page administrator, posts by others, and various comments than from question answering in the classroom ($p<0.01$). Nevertheless, the page was beneficial in addressing questions when medical students learned from other sources ($p<0.05$) and still had to have a face-to-face interaction by asking questions in the classroom ($p<0.01$).

Opinions of students categorized into student performance

The average satisfaction scores categorized into MCQ scores of student performance are presented in Table 3. It concluded that all four groups had similar opinions and learning behaviors in utilizing the benefits of the page, except for their desire to have a Facebook page in other courses. The "Fine" group of students had more desire to have a Facebook page for other courses than the "Great" group with statistical significance ($p<0.05$).

Discussion

Social media have been used more and more in higher education[4], which includes undergraduate medical education, graduate medical education, continuing medical education, medical student education and resident education[5]. Social media used in learning include blogs, Wikis, Podcasts, Webcast, Linkedin, Facebook, and Twitter. Facebook is considered the most popular social media among American university students. Surveys have revealed that students use Facebook either everyday or nearly everyday[6]. Thai students are no different, wherein all undergraduate students are members of a social network (100%), 61.7% of which are members of Facebook. As much as 70% use Facebook at a maximum of three to six hours per day, which is about 40.8% of the entire sample group[7]. As such, using Facebook as the social media technology has drawn much interest although the purpose of usage is low in education[8]. The use of a Facebook page for teaching pre-clinical students has even been published[9]. Other data also support that the use of a social networking site in an online environment is beneficial to PBL in supplementing face-to-face interactions and facilitating the acquisition and/or exchange of school-related information in the past, and has been even more effective to date[10].

As social media has become a major influence in the daily lives of students, many of them favor using Facebook to supplement classroom learning, as it provides easy access via mobile technology on smart phones. In addition to receiving information faster without having to go through a class president or representative, it also provides an immediate communication channel with members of the faculty when they stumble upon a question while reviewing class content or researching information on their own in two-way communications. Communication also opens up feedback channels, when encountering obstacles to learning, from the block coordinator and helps improve classes.

That said, the present study demonstrates that a social networking tool such as Facebook page has not been able to stimulate inquiry learning and exchange of opinions between teachers and students or even between students, as seen in low active participation. As such, students in all groups of different academic performance have not obtained the full benefits of having a course page, which will require further strategic development, which if achieved would provide benefits for communication, collaboration, and socialization. As most of the students, especially the Fine student group, would like to have Fanpages for other courses some of the students would like the new in-coming-class students to have a Fanpage in the course for the new academic year (data were not shown); the Fanpage should be developed. However, a number of the page members were not participating in the course. With the limitation of the "Facebook Insight" tool in analyzing in-depth information about the post, for which they could not select only the "Click" and "Like" of the course registered- student, it is difficult to summarize the rank of successful page setting objectives. Moreover, some instructors have expressed their intention not to participate in using Facebook as part of teaching as they are unsure about its safety and confidentiality of their own personal information, which requires further security system development. The Facebook page, however, will stimulate exchange learning between members of the faculty and students, among the students themselves, and interaction between students registered for the course and those who are not. But there is an important privacy issue, which could be addressed by using a "closed group" on Facebook instead of a Facebook page.

Conclusion

Using social networking, particularly Facebook pages, achieved the objectives of setting and supporting PBL activities. However, Facebook "closed group" may improve the instructors' participation, all performance level student's knowledge sharing and in-depth information analyzing.

Acknowledgement

The authors wish to thank Mohammed Meziani for coming up with the constructive idea to publish the present work, Carlos Collares for statistic advice, Rungtip Hovanotayan for assistance in reviewing references, and Auragun Poomkokruk for assisting with English usage.

Potential conflicts of interest

None.

References

1. Ruangrong P, Jiraworapong P, Manyum W, Somyaron W, Muendet S, Srisurat C. Social media in Thailand education [Internet]. 2014 [cited 2014 Jul 15]. Available from: http://www.slideshare.net/krubeeka/01-26523314
2. Thailand Social Network [Internet]. 2013 [cited 2014 Jun 13]. Available from: http://mobileeesdista.com
3. Lepi K. How social media is being used in education. Edudemic connecting education & technology [Internet]. 2013 [cited 2014 Jul 15] Available from: http://www.edudemic.com/social-media-in-education/
4. Cheston CC, Flickinger TE, Chisolm MS. Social media use in medical education: a systemic review. Acad Med 2013; 88: 893-901.
5. Jaffar AA. Exploring the use of Facebook page in anatomy education. Anat Sci Educ 2014; 7: 199-208.
6. Saparova D, Williams JA, Inabnit C, Flesta M. Information behavior shift: how and why medical student use Facebook. Proc Am Soc Info Sci Tech 2013; 50: 1-4.
7. Tanawattanacharoen S, Wongkietkachorn A. Medical students' online network abuse. South-East Asian J Med Educ 2013; 7: 80-5.
8. Akyildiz M, Argan M. Using online social networking: students' purposes of Facebook usage at the University of Turkey. J Tech Res 2012; 3: 1-11.
9. Gualtieri L, Javetski G, Corless H. The intregration of social media into course: a literature review and case study from experience at Tufts University School of Medicine [Internet]. Future Learning 2012 [cited 2014 Jul 15]. Available from: http://www.academia.edu/1514567/
10. Chukusol C, Sriratanaban C. The needs assessment in the online social network for teaching and learning for undergraduate students [thesis]. Bangkok: Thai Chamber of Commerce; 2013.

การรับรู้ผลประโยชน์ของการใช้เครือข่ายสังคมออนไลน์ในการเรียนแบบใช้ปัญหาเป็นหลักตามระดับความสำเร็จทางการเรียน

โสภาพรรณ เอกรัตนวงศ์, อมรณัฏฐ์ ทับเปีย, พลสิทธิ์ ชะมด, ภัทรวิน ภัทรนิธิมา, นุชนาฎ เสือเล็ก, ปนัดดา โรจน์พิบูลสถิตย์

ภูมิหลัง: การนำเครือข่ายสังคมออนไลน์มาใช้เป็นเครื่องมือสื่อสารในการเรียนการสอนหลักสูตรแพทยศาสตร์ทุกระดับ ได้รับความสนใจและถูกนำมาใช้มากขึ้น จากการที่เฟซบุ๊กเป็นเว็บไซต์บนเครือข่ายสังคมออนไลน์ที่ได้รับความนิยมมากที่สุดในหมู่นักศึกษา เฟซบุ๊กเพจจึงถูกนำมาใช้ในหลักสูตรรายวิชาระบบปัสสาวะและสืบพันธุ์ ซึ่งอยู่ในหลักสูตร การเรียนแบบใช้ปัญหาเป็นหลักของคณะแพทยศาสตร์ มหาวิทยาลัยธรรมศาสตร์ ปีการศึกษา พ.ศ. 2556

วัตถุประสงค์: เพื่อศึกษาความคิดเห็นของนักศึกษาในการใช้เฟซบุ๊กเพจเพื่อสนับสนุนการเรียนรายวิชาบูรณาการระดับพรีคลินิก

วัสดุและวิธีการ: คณะกรรมการหลักสูตรรายวิชาระบบปัสสาวะและสืบพันธุ์ได้สร้างเฟซบุ๊กเพจและแนะนำ วัตถุประสงค์ของการสร้างเฟซบุ๊กเพจในช่วงเริ่มต้นแก่นักศึกษาแพทย์ชั้นปี 2 ที่ลงทะเบียนและคณาจารย์ผู้เกี่ยวข้องกับหลักสูตรรายวิชา ได้แก่ 1) เพจเป็นช่องทางสื่อสารในวงกว้างอย่างรวดเร็ว 2) เพจเป็นช่องทางสำหรับถามข้อสงสัยของนักศึกษาและตอบคำถามของคณาจารย์ 3) เพจกระตุ้นการเรียนรู้และ 4) เพจสร้างสัมพันธ์ที่ดีระหว่างนักศึกษาและผู้ประสานงานรายวิชา หลังจากสิ้นสุดรายวิชานักศึกษาทั้งหมด 177 ราย ตอบแบบสอบถามเกี่ยวกับการใช้เฟซบุ๊กเพจโดยยินยอมให้นำข้อมูลความคิดเห็นไปวิเคราะห์และเผยแพร่ได้ แบบสอบถามความคิดเห็นมีคะแนนความพึงพอใจ 5 ระดับ (มากที่สุด = 5 และน้อยที่สุด = 1) ค่าเฉลี่ยของแต่ละข้อคำถามถูกเปรียบเทียบตามผลการเรียนของนักศึกษา (ยอดเยี่ยม ดี ปานกลาง และอ่อน)

ผลการศึกษา: นักศึกษาชอบเฟซบุ๊กเพจ (ค่าเฉลี่ยความพึงพอใจ 4.64) และต้องการใช้เฟซบุ๊กเพจในรายวิชาอื่น (4.63) โดยเฉพาะนักศึกษาที่มีผลสอบระดับปานกลางเมื่อเทียบกับกลุ่มยอดเยี่ยม ($p<0.05$) เนื่องจากมีประโยชน์ในการถามคำถามกับคณาจารย์ได้โดยตรงทั้งข้อสงสัยจากการเรียนบรรยาย (4.54) การเรียนรู้ด้วยตนเอง (4.35) และสามารถลดเวลาในการทำความเข้าใจเนื้อหาจากการเรียนรู้ด้วยตนเอง (4.03) ในขณะที่ไม่สร้างความเครียด (2.10) แต่นักศึกษายังไม่ได้ใช้ประโยชน์อย่างเต็มที่ (3.25) จากการที่ไม่ได้อ่านข้อความต่าง ๆ ที่แสดงโดยละเอียด (3.68) ดังนั้นหากพัฒนาเฟซบุ๊กเพจให้นักศึกษาศึกษาข้อความต่าง ๆ โดยละเอียดจะทำให้มีประโยชน์ในแง่ที่ช่วยกระตุ้นการเรียนรู้ด้วยตนเองได้ (4.09)

สรุป: การใช้เครือข่ายสังคมออนไลน์โดยเฉพาะเฟซบุ๊กเพจบรรลุวัตถุประสงค์ทั้งสี่ข้อ เนื่องจากการนำเฟซบุ๊กเพจมาประยุกต์ใช้นับเป็นครั้งแรกทำให้คณาจารย์ส่วนหนึ่งกังวลเรื่องข้อมูลส่วนบุคคลที่จะนำเสนอต่อสาธารณะ ยิ่งกว่านั้นการแลกเปลี่ยนข้อมูลกันระหว่างนักศึกษายังมีน้อย การจัดทำเฟซบุ๊ก “กลุ่มปิด” ที่มีระบบการป้องกัน ข้อมูลและความคิดเห็นจึงน่าจะเหมาะสมกับรายวิชาบูรณาการในการเรียนการสอนแบบใช้ปัญหาเป็นหลัก