

**Educational use of Facebook by undergraduate students in Malaysia higher education:**

**A case study of a private university**

Lee Cheng Ean \*, Teh Phoey Lee\*

*Sunway University, MALAYSIA*

\*Correspondence to: [catherinelee@sunway.edu.my](mailto:catherinelee@sunway.edu.my), [phoyleet@sunway.edu.my](mailto:phoyleet@sunway.edu.my)

**ABSTRACT**

The learning environments in higher education are moving towards the integration of information and communication technology (ICT) such as social media. Recent years have witnessed an increased interest of using social media in higher education and this has created a growing phenomenon for the educational use of social networking sites such as Facebook, to create, engage, and share information among the students. This paper presents a qualitative analysis of the Facebook closed group activities of undergraduate students in a Malaysian private university. The analysis of data shows four main themes of students' education-related use of Facebook closed group and issues relating to students' use of Facebook for educational purposes due to its increasing prevalence in the everyday lives of students. This paper concludes with two main findings of the realities of students' Facebook closed group activity and the role of Facebook in students' experience in higher education.

**Keywords**

facebook,  
facebook closed group,  
educational use,  
higher education,  
undergraduate students,  
malaysia private university.

Received: 13 May 2016

Accepted: 19 June 2016

Published Online: 8 August 16

DOI: 10.20897/lectito.201641

**INTRODUCTION**

In the 21st century, social media has burgeoned into one of the most used channels of communication in the society. As social media becomes well recognised for its potential as a social communication channel, recent years have witnessed an increased interest of using social media in higher education (Alhazmi, & Abdul Rahman, 2013; Al-rahmi, Othman, & Musa, 2014; Al-rahmi, & Othman, 2013a; Chen, & Bryer, 2012; Selwyn, 2009, 2012 to name a few).

A survey by Pearson (Seaman, & Tinti-kane, 2013), The Social Media Survey 2013 shows that 41% of higher education faculty in the U.S.A. population has use social media in teaching in 2013 compared to 34% of them using it in 2012. The survey results also show the increase use of social media for teaching by educators and faculty professionals has increase because they see the potential in applying and integrating social media technology to their teaching. Many higher education institutions and educators are now finding themselves expected to catch up with the world of social media applications and social media users. This creates a growing phenomenon for the educational use of social media to create, engage, and share existing or newly produced information between lecturers and students as well as among the students.

Facebook has quickly become the social networking site of choice by university students due to its remarkable adoption rates of Facebook in universities (Muñoz, & Towner, 2009; Roblyer et al., 2010; Sánchez, Cortijo, & Javed, 2014). With this in mind, this paper aims to investigate the use of Facebook closed group by undergraduate students in a private university in the Klang Valley, Malaysia. It is also to analyse the interaction pattern among the students using the Facebook closed group pages.

**LITERATURE REVIEW**

*Social media in higher education*

The use of social media in higher education is an emergent trend since the introduction of Web 2.0 in the 20th century and the popularity of social media in the 21st century. Social media, also known as Web 2.0, came in 2004 when O'Reilly Media and MediaLive hosted the first Web 2.0 conference and Bart Decrem, founder of the popular

social-network platform Flock TM called social media as the ‘participatory web’ which comprise the interlinking of people engaging actively and interactively with the content (Bonzo, & Parchoma, 2010, p. 913). Other definitions given include Grosseck (2009) and Tess (2013). Grosseck (2009) defined Web 2.0 as the social use of the Web which allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online. Tess (2013) defined social media as “a term that is broadly used to describe any number of technological systems related to collaboration and community the task of defining social media is made more challenging by the fact that it is constantly in a state of change” (p. A60-A61).

Since 2006, scholars have begun to investigate the use of various social media tools in education such as Web 2.0 (Grosseck, 2009); wikis and blogs (Boulos, Maramba, & Wheeler, 2006); Facebook (Lewis et al., 2008; Pasek, More, & Hargittai, 2009); Twitter (Grosseck, & Holotescu, 2008); and social media in general (Rheingold, 2008; Väljataga, & Fiedler, 2009). Boulos, Maramba, and Wheeler’s (2006) research shows the potential impact of wiki, blogs and podcasts on higher education in the United Kingdom and the combined use of the three applications yield the most powerful learning experience. Grosseck (2009) on the other hand corroborates Boulos, Maramba, and Wheeler’s (2006) study because she claimed that Web 2.0 applications have an emerging role to transform teaching and learning and it might constitute a new Information and Communication Technologies (ICT) pedagogy in the 21st century known as pedagogy 2.0. Grosseck (2009) further promotes a scholarly inquiry about the need of a new type of pedagogy based on Web 2.0 together with the development and adoption of the best practices for teaching and learning in higher education. Her article revealed that Web 2.0 is the future of higher education, though careful thinking and empirical research are needed in order to find the best way to leverage these emerging tools for teaching and learning purposes.

Among the many studies reporting on the use of social media in higher education in the 21st century, four studies (Liu, 2010; Silius, Kailanto & Tervakari, 2011; Chen & Bryer 2012; Selwyn, 2012) have demonstrated the continued growth of evidence of using social media tools in higher education as both students and educators are using this technology for educational purposes. Much of the literature takes a positive view of leveraging social media technologies in higher education, yet, there are issues and concerns which require careful thinking when applying social media tools in formal learning. Therefore, more empirical research is needed in order to find the best way to leverage these emerging tools for teaching and learning activities.

Liu (2010) claimed that social media is ubiquitous especially in the commercial world and educators are now leveraging it in the educational arena. According to Liu (2010), students who are labelled as digital natives can easily embrace new technologies such as social media tools for learning purposes though social media is mostly use for recreational purposes. The author concluded that the fast advancement of technology appearing in the market is a huge challenge for both students and educators to keep up with the new technology trend use in education and she suggested that future technology integration in education should focus on what the students use instead of what the school wants them to use.

In addition, Silius, Kailanto, and Tervakari (2011) disclosed in their study that students’ attitudes towards social media in educational context has changed from using social media as a communication channel during their free time to use it for studying purposes. The main characteristics of a social enhanced learning system that motivate students to use social media in an educational context are: versatile features in supporting a learning community; usable and accessible with robust technological solutions; ease of use; provide clear added value such as support for networking and social interaction; quality of social networking site with quality of community within it; communication and collaboration; privacy and security issues; importance of informational quality; and mechanisms or policies for filtering, marking and removing content of poor quality (Silius, Kailanto, & Tervakari, 2011).

Another study reported that social media is not only extensively use by college students but also by educators to connect formal and informal learning and allowing students to connect in new and meaningful ways (Chen, & Bryer, 2012). The authors concluded that social media in higher education teaching is an emergent area for study; however, there is a need to call for institutional changes to facilitate and encourage experimentation by faculty members who wish to determine the efficacy of social media tools for teaching (Chen, & Bryer, 2012).

Lastly, Selwyn (2012) agreed with prior researchers that many higher education institutions and educators are now finding themselves expected to catch up with the world of social media applications and social media users. Yet, he argued the actual use of social media by students within the educational context as well as in their wider everyday lives. Selwyn (2012) raises issues that created the disparities between the educational rhetoric and educational realities of social media use and finally suggests higher education community to engage in considered and realistic debates over how best to utilise social media in appropriate ways for higher education settings and not merely on how social media is use in education.

#### *Social media in Malaysian higher education*

Although there is a growing body of empirical research on the use of social media in higher education, there is not abundance in literature in Malaysia context. Only a small number of researches found to focus on Malaysia

context: one investigated the use of Web 2.0 in a private college (Lau, 2010), another studied the impact of social media on students' satisfaction (Al-rahmi, & Othman, 2013a) and five others examined the use of social networking sites for education (Lim, 2010; Kabilan et al., 2010; Hamat, Embi & Hassan, 2012; Hamid et al., 2011; Rasiah, 2014).

Lau (2010) conducted a qualitative survey with 30 faculty staff and 23 students from a private college in Malaysia on the use of Web 2.0, specifically blog as a learning and assessment tool. The study concluded that both staff and students demonstrated a positive attitude towards Web 2.0 as an instrument for the processing and performance of teaching and learning. Five other research (Lim, 2010; Kabilan et al., 2010; Rasiah, 2014; Hamat, Embi, & Hassan, 2012; Hamid et al., 2011) also concur with Lau (2010) on the positive use of social media, specifically social networking sites in higher education. Lim (2010) conducted her study using a quantitative content analysis on the data of user interaction at Facebook as an online discussion among distance learners. She concluded that Facebook does have the potential to be used as a platform for online academic discussions for distance learners. Kabilan et al. (2010) conducted a survey with 300 undergraduate students from a public university in Malaysia to identify whether or not Facebook is a useful and meaningful learning environment for supporting and enhancing the learning of English language. Results show that Facebook has been utilised as an online environment to facilitate the learning of English and language instructors have integrate Facebook as an educational project to create meaningful learning experience. The study concluded that "learning of English in Facebook is feasible...Facebook would be able to facilitate and produce effectual and meaningful learning of English within an online community of English language learners" (Kabilan et al., 2010, p. 185). On the other hand, Rasiah (2014) used both qualitative and quantitative methods in assessing the effectiveness of using Facebook to enhance teaching and learning in a team-based learning environment involving large classes. The content analysis of 122 students' reflective journals and a quantitative survey revealed that Facebook creates a less threatening and flexible learning space which enhanced collaborative learning, while building a stronger rapport among the students and their lecturer in a highly engaging manner (Rasiah, 2014).

Hamat, Embi, and Hassan (2012) used a quantitative survey with 6358 students for measuring the use of Facebook for informal learning, while Hamid et al. (2011) used a qualitative interview with two lecturers from two Malaysian public universities to explore lecturer perspectives on their appropriation use of online social networking in higher education. Drawing on Hamat, Embi, and Hassan's (2012) research, students do make use of Facebook for activities that are common for informal learning and they have a more positive view of social networking and its effects on their lives as students. Hamid et al.'s (2011) study revealed that lecturers are now being encouraged to use social technologies in their teaching in order to encourage social learning and to prepare students as graduates who will contribute to a society that now relies heavily on social technologies. They concluded that online social networking activities are able to complement the current teaching and learning practices, demonstrates the confidence of lecturers in their teaching and shows the relevance of social technologies to support teaching and learning (Hamid et al., 2011).

### *Facebook*

Facebook was launched in February 2004 by its founder Mark Zuckerberg. Despite the presence of other strong competitors such as MySpace, Twitter, and LinkedIn, Facebook increased its users in a rapid pace and it is now one of the biggest social networking sites in United States of America (Tuunainen, Pitkanen, & Hovi, 2009). According to The Associated Press (October 23, 2012), Facebook has reached 1.01 billion people with 584 million active users each day and 604 million users using Facebook from a mobile device each month. On the other hand, Leeming, and Danino's (2012) case study on Facebook usage indicated that the total number of Facebook users in Malaysia has grown tremendously to approximately 10.1 million in one year. Facebook is beneficial for users in maintaining a large, diffuse network of friends, and to enhance their social capital, which is defined as the benefit one receives from one's relationship with others (Ellison, Steinfield, & Lampe, 2007, as cited in McCorkindale, 2010). Facebook began with a focus on colleges and universities, but now it has been widely used in high schools, professionals in corporate networks and other organisations such as nonprofit organisation (Boyd, & Ellison, 2008; Ellison, Steinfield, & Lampe, 2007).

### *Facebook use in higher education*

Prior literature reveal that the use of Facebook is growing in the educational field. Facebook, a major and popular social networking site with its current active users of 1550 million as in January 2016 (Statista.com, 2016), has been use by college and university students as a social communication channel as well as a platform for educational purposes.

Drawing on the literature reviewed, four studies show positive impact of Facebook use on students' academic performance in Malaysia context (Helou, Ab. Rahim, & Oye, 2012; Din, Yahya, & Haron, 2012; Al-rahmi, & Othman 2013b; Al-rahimi, Othman, & Musa, 2013), while Pasek, More, and Hargittai (2009)'s study show no

evidence of Facebook use to the diminished academic achievement for undergraduate students. Helou, Ab. Rahim, and Oye's (2012) study reveals 42% of the respondents agreed that there is a positive influence of the use of social networking site on students' academic performance. Din, Yahya, and Haron (2012) surveyed 59 online distance learners and the analysis shows a significant relationship between information retrieval on Facebook and academic performance. Both Al-rahmi, and Othman (2013b) and Al-rahmi, Othman, and Musa (2013) studied 80 undergraduate and postgraduate students from a public university in Malaysia and their studies revealed the benefits of Facebook in the academic setting through collaborative learning and interactivity between students and lecturers have improved students' academic performance. Lastly, Pasek, More, and Hargittai (2009) used a multipronged approach by asking the question in three different contexts for examining the relationship between grade point averages (GPA) and the use of Facebook. None of the three analyses detect a robust negative relationship between GPA and use of Facebook. Two of the analyses suggest that Facebook users that Facebook use was slightly more common among individuals with higher grades.

There is a paucity of literature on social media content analysis for Facebook use in education. Five studies found to content analysed online activities for educational use through Facebook wall postings (Selwyn, 2009; Leelathakul, & Chaipah, 2013; Staines, & Lauchs, 2013; Lim, 2010; Said, & Tahir, 2013), one study analysed students' reflection journals (Rubrico, & Hashim, 2014) and one study focuses on comparing Blackboard and Facebook online discussion forum (Kent, 2013). Selwyn's (2009) study revealed five main themes from students' Facebook walls such as (1) recounting and reflecting on the university experience, (2) exchange of practical information, (3) exchange of academic information, (4) displays of supplication and/or disengagement, and (5) 'banter' (i.e. exchanges of humour and nonsense), while Kent (2013) identified six categories for the results of analysing Blackboard discussion posts and Facebook posts which are: Administrative, Assignment Questions, Assignment Extensions, Learning Links, Unit Learning Material and Off Topic Posts.

Lim's (2010) study identified five categories for the analysis such as total interaction, interaction per post, post quality score, post that generate a high number of interactions and unique page view, and Said, and Tahir (2013) classified five dimensions such as interactive, social, cognitive, surface and deep information processing and value. The final two studies by Leelathakul, and Chaipah (2013) and Staines, and Lauchs (2013) briefly categorises the Facebook wall analysis into primary and secondary posts as well as number of posts and comments for the posts. Staines, and Lauchs (2013) further claimed that majority of the posts are contributed by lecturers (85%) compared to students (15%).

### *Research questions (RQ)*

This paper examines the use of Facebook in the lives of undergraduate students of a private university in Malaysia. In particular, the paper investigates the realities of students' Facebook closed group activity and the role of Facebook in students' experience in the contemporary university education. The remainder of the paper will consider the following two research questions: (RQ1) What aspects of students' interactions via Facebook closed group page? And (RQ2) What evidence of Facebook use in students' interactions for their university studies?

### **Methods**

The two research questions are explored through a qualitative study of the content of Facebook closed group page of undergraduate students who are studying at a private university for the March 2015 semester. The study covers two Facebook closed group pages created by first and second year of undergraduate students in the Department of Communication (n = 107), who are studying Bachelor of Arts (Hons) in Communication. The period of data collection is from 26 March 2015 to 31 May 2015 (the beginning of March semester to the mid-semester for two months). Both closed group pages were created by the student representative of the respective courses and have invited all the students of the course, together with a lecturer and a tutor to join the group. The first group consists of first year students with a lecturer and a tutor (n=54) and the second group consists of second year students with a lecturer (n=56). One of the author is the lecturer for both courses, therefore, the data was collected directly from the closed group page postings as the author has access to both closed group discussions.

In terms of data analysis, the data was analysed using the constant comparison technique (Glaser, & Strauss, 1967, as cited in Selwyn, 2009). Firstly, the author examines all the exchanges between the students and the lecturer from the Facebook group postings. The author then read again the group postings to gain an overall sense of the data. Finally, the data were coded in categories and relate these categories to the two research questions outlined in this study.

### **Results and discussion**

For the two months of discussion on Facebook closed group pages, a total of 68 postings was found in the first group and only 16 postings for the second group. Most of the postings were made by the course representatives and the lecturer. For example in the first group, the lecturer has posted 11 times while the course representative

has posted 22 times and other students have contributed 35 postings. For the second group which has fewer postings, most of the postings were made by the lecturer (13 postings), while the course representative who created this group has posted only once and students have posted twice throughout these two months. When analysing the education-related interactions from the two Facebook closed group postings, four main themes emerged from the data: (1) announcements and updates about course-related matters, (2) queries about assignments and course-related matters, (3) exchanges of support and humour, and (4) exchanges of files and information. In order to protect the privacy of the students, all names mentioned in the analysis were made anonymous and are labelled as Student Rep. K, Student S, Student G and so on. These themes are discussed as follows.

#### *Announcements and updates*

Students mainly use Facebook group discussion to post announcements and updates about course-related matters. For the first group, a total of 27 postings were announcements and updates related to the course and departmental matters, while only 10 announcements were made for the second group.

There were reminders and announcements on departmental matters, changes of class venue, assignment content and test venue.

Student Rep. K (first closed group) wrote on 26 March 2015, seen by all 54 members with 13 'likes' but with no comment:

*Announcement #1 (Sorry, couldn't resist :P) Hey everyone, about the Dept. Tee. Ms W mentioned that the head of our Dept. will be collecting the money and the sizes they'll need to order from me tomorrow. So a reminder for those who haven't paid to bring to the RM30 for tomorrow's class. As well as those who have not written a size on the paper ^.^ About Sizes...*

Student Rep. K (first closed group) wrote on 27 March 2015, seen by all 54 members with 19 'likes' and two comments:

*Oh, and this is for the PR Lecture on Tuesday. UE-Lecture Theater 7 is in the new building(There's a Lecture Theater 7 in the old building so don't get yourself confused, like how I did :P) So to get there, use the Elevator/Lift on your left when you face the new building and head to Floor 1. The Lecture Theater should be on your right. K. excitedly points to image\*...*

Student Rep. K (first closed group) wrote on 12 April 2015, seen by all 54 members with 13 'likes' and only with one comment:

*A reminder for tomorrow's library session. Credits to A.A for reminding me ^.^*

Student J (first closed group) wrote on 24 May 2015, seen by 48 members with 23 'likes' and 36 comments: *[URGENT] Hello everybody! Last minute announcement here! apparently Mr A cant make it for class tmrw, so there is no presentation and class! it will be postponed to next week! please help me pass this message to everybody! THANKS!*

Student M. (first closed group) wrote on 6 May 2015, seen by 50 members with nine 'likes' and four comments:

*Ms. W has informed me that she will be checking the synthesis papers on Week 9. Please take note! 🙏*

As this theme illustrates, students would turn to Facebook to seek for clarification especially on the first Facebook group. Most of the postings were made by the student representative because he plays the role of relaying information about class times or locations, where to access materials and sending reminders on behalf of the Lecturer. This analysis shows that Facebook is a useful means of last minute information-seeking as in many instances, information concerned the practical logistics of attending the course were announced and posted by the student representative (Selwyn, 2009).

On the other hand, the content analysis of the second Facebook group page indicated that majority of posts were contributed by the Lecturer rather than the students. All 10 postings of announcement and updates about the course and assessments in the group page were posted by the Lecturer. The result demonstrates very little evidence of student engagement and only the Lecturer establishing the discussion with the students. This confirms Staines, and Lauches's (2013) assertion that posting on Facebook page require a substantial amount of 'seeding' by the Lecturer (p. 799). Below shows the postings of the Lecturer on the second group.

The Lecturer (second closed group) wrote on 15 April 2015, seen by 49 members with nine 'likes' and three comments:

*hey guys, just wanna double confirm. what's our attire for tomorrow's PR presentation? Thanks 😊*

The Lecturer (second closed group) wrote on 14 April 2015, seen by 50 members with three 'likes' and only one comment:

*example of event news release*

The analysis of the first group page shows that students turn to Facebook to ask questions and seek clarification from their peers in regards to course assessment. This result was similar with Kent's (2013) observation that the nature of posts on Facebook is different in content as discussion about assignments have increased on the Facebook group. However, in the second group, the Lecturer shared samples of assignments on the group with 90% of students seen the posts and files, very few 'likes' with no comment. This shows that students of the second

group were very passive and performed the activity of 'lurkers' who log in to read posts but do not offer their opinions (Lim, 2010, p. 79).

#### *Exchanges of support and humor*

Another category of Facebook exchange centred around the seeking of moral support as well as sharing of entertainment and humour among the students. From the first group page, we found a total of 23 postings sharing birthday wishes, support for tests, promotions of food and beverages as well as postings of pictures of students' activities and jokes such as 9GAG. However, on the second group page, there is no evidence found for this exchange.

Student S (first closed group) wrote on 15 April 2015, seen by all 54 members with 16 'likes' and six comments:

*HAPPY BIRTHDAY to MR. FANTASTIC: K!*

*Many, Many Happy Returns of the Day bro...*

*BTW I hope the rest of the class joins me in covering him in whipped cream ☺*

Student M (first closed group) wrote on 29 April 2015, seen by 50 members with 17 'likes' but only one comment:

*Good luck for Corp Comm tmr guys! 😊👍*

Student Rep. K (first closed group) wrote on 19 May 2015, seen by 50 members with 22 'likes' and four comments:

*Good luck for the test tomorrow people! May we all achieve the 'Self-Actualization' phase in Maslow's Hierarchy ☺*

The above analysis concurs with Selwyn's (2009) research that there were exchanges which were humorous in nature and this type of exchange was common throughout students' non university-related use of Facebook. On the other hand, we found a "situation where students sought to distance themselves from roles which had to be enacted but with which they did not necessarily wish to be identified by others" (Selwyn, 2009, p. 171) in the second group. This is because none of the students exchange any support or pictures of their activities. They only view the postings made by the Lecturer and by a few students on announcements and updates as well as queries about assignments.

#### *Exchanges of files and information*

The last theme demonstrates the exchange of files and information. A total of seven files and information were uploaded on the first group and only two were found on the second group. For the first group, the Lecturer has uploaded three files about course-related matters, while the student representative has uploaded two files about assessments. Two other students namely Student A and Student M also uploaded files about the course content. Student A posted an article on 1 May 2015. Fifty members have seen the posting with 14 'likes' and only one student commented. Student M posted additional information about the course content on 7 April 2015 with all 54 members seeing the post with 10 'likes' and two comments.

For the second group page, two files were posted by the Lecturer about a class trip and assignment. The first file was uploaded on 28 April 2015 with 46 students seeing the post with seven 'likes' and four comments. Another file was uploaded on 30 April 2015 about a sample of news coverage with 46 students saw the post and only one 'like' was found. Drawing from the analysis above, we agree with Staines, and Lauchs (2013) that although students rarely posted on the Facebook group page, Facebook was very useful for easing communications between students and lecturer especially for information sharing and engagement with course materials.

## **Conclusion**

Our study presents two main findings of the realities of students' Facebook closed group activity and the role of Facebook in students' experience in higher education. Firstly, there are four themes emerged from the qualitative content analysis of Facebook closed group pages which are announcements and updates, queries about assignments and course-related matters, sharing of files as well as exchanges of other matters such as birthday wishes, advertising of products, pictures of students having fun, supports given to each other for upcoming test, and some random chat; and secondly most students were passive users as they only view the postings in the close group page, but not actively commenting or liking the post. This observation of Facebook group pages concur with prior literature (Liu, 2010; Silius, Kailanto, & Tervakari, 2011; Chen, & Bryer, 2012; Selwyn, 2009, 2012) that both students and lecturers are using this technology for educational purposes.

Students have used Facebook as a platform to make announcement as well as to seek clarification on course-related matters while the Lecturer has utilised this platform for communication with the students beyond the classroom.

Nevertheless, comments of the posts were only given when the topic of discussion was about assessments such as test dates, test focus and format as well as about announcement on cancellation of tutorials. On the other hand, 'likes' were given on discussion about course matters such as change of class venue or cancellation of

classes as well as for exchanges of support and humours. Thus, the data presented in this study shows that students were not actively engaging with the lecturer and peers throughout the seven weeks of study because the interaction pattern of the Facebook groups is mainly based around course-related matters.

Although Facebook has been acknowledged by scholars as the world's largest social networking site which is increasingly use as a channel for communication and collaboration among students in higher education (Kent, 2013), the students in this study are simply using Facebook group as a broadcast medium for transmitting information and announcements on course-related matters such as changes of venue for classes, queries about assignments and replacement classes. To conclude, in view of the above, we would suggest that Facebook acts as a communication channel for making announcement and only serve as a supplementary tool for teaching and learning; yet for effective use of Facebook in the classroom, positive attitude of the students to actively participate in the discussion is crucial.

### Acknowledgements

This research was supported by Sunway University Internal Research Grant Scheme 2014 (INT-FOA-DCLA-0114-11).

### REFERENCES

- Alhazmi, A. K., & Abdul Rahman, A. (2013). 'Facebook in higher education: Students' use and perceptions'. *Advances in Information Sciences and Service Sciences (AISS)*, 5, (15), 32–41.
- Al-rahimi, W. M., Othman, M. S., & Musa, M. A. (2013). 'Using TAM model to measure the use of social media for collaborative learning'. *International Journal of Engineering Trends and Technology (IJETT)*, 5, (2), 90–95.
- Al-rahmi, W. M., & Othman, M. S. (2013a). 'Evaluating student's satisfaction of using social media through collaborative learning in higher education'. *International Journal of Advances in Engineering & Technology*, 6, (4), 1541–1551.
- Al-rahmi, W. M., & Othman, M. S. (2013b). 'The impact of social media use on academic performance among university students: A pilot study'. *Journal of Information Systems Research and Innovation*, 1–10.
- Arteaga Sánchez, R., Cortijo, V., & Javed, U. (2014). 'Students' perceptions of Facebook for academic purposes. *Computers & Education*', 70, 138–149.
- Bonzo, J., & Parchoma, G. (2010). 'The paradox of social media and higher education institutions'. In *The 7th International Conference on Networked Learning* (pp. 912–918).
- Chen, B., & Bryer, T. (2012). 'Investigating instructional strategies for using social media in formal and informal learning'. *The International Review of Research in Open and Distance Learning*, 13, (1), 87–104.
- Din, N., Yahya, S., & Haron, S. (2012). 'Information retrieval and academic performance among Facebook users'. In *AicE-Bs 2012 Cairo ASIA Pacific International Conference on Environment-Behaviour Studies* (Vol. 68, pp. 258–268).
- Grosbeck, G. (2009). 'To use or not to use web 2.0 in higher education?' *Procedia - Social and Behavioral Sciences*, 1(1), 478–482.
- Grosbeck, G., & Holotescu, C. (2008). 'Can we use Twitter for educational activities?' *The 4th International Scientific Conference of eLearning and Software for Education*, 1–8.
- Hamid, S., Waycott, J., Chang, S., & Kurnia, S. (2011). 'Appropriating online social networking (OSN) activities for higher education: Two Malaysian cases'. *Asvilita*, 526–538.
- Helou, A. M., Ab. Rahim, Z. Z., & Oye, N. D. (2012). 'Students' perceptions on social networking sites influence on academic performance'. *International Journal of Social Networking and Virtual Communities*, 1, (1), 7–15.
- Kabilan, M. K., Ahmad, N., & Zainol Abidin, M. J. (2010). 'Facebook: An online environment of English in institutions of higher education?' *The Internet and Higher Education*, 13, (4), 179-187.
- Kent, M. (2013). 'Changing the conversation: Facebook as a venue for online class discussion in higher education'. *MERLOT Journal of Online Learning and Teaching*, 9, (4), 546–565.
- Lau, A. (2010). 'Web 2.0 as a catalyst for rethinking teaching and learning in tertiary education: A case study of KDU College (Malaysia)'. In *Proceedings of the 5th International Conference on E-Learning* (pp. 197–206).
- Leelathakul, N., & Chaipah, K. (2013). 'Quantitative effects of using facebook as a learning tool on students' performance'. In *The 2013 10th International Joint Conference on Computer Science and Software Engineering (JCSSE)* (pp. 87–92).
- Lewis, K., Kaufman, J., Gonzalez, M., Wimmer, A., & Christakis, N. (2008). 'Tastes, ties, and time: A new social network dataset using Facebook.com'. *Social Networks*, 30, 330–342.
- Lim, T. (2010). 'The use of Facebook for online discussions among distance learners'. *Turkish Online Journal of Distance Education*, 11, (October), 72–81.

- McCorkindale, T. (2010). 'Can you see the writing on my wall? A content analysis of the Fortune 50's Facebook social networking sites'. *Public Relations Journal*, 4, (3), 1–14.
- Muñoz, C. L., & Towner, T. L. (2009). 'Opening Facebook : How to use Facebook in the college classroom'. In 2009 Society for Information Technology and Teacher Education, Charleston, South Carolina (pp. 1–13).
- Pasek, J., More, E., & Hargittai, E. (2009). 'Facebook and academic performance: Reconciling a media sensation with data'. *First Monday*, 14, (5). doi:10.5210/fm.v14i5.2498
- Rheingold, H. (2008). 'Using social media to teach social media'. *The New England Journal of Higher Education*, 23, 25-26.
- Roblyer, M.D., McDaniel, M., Marsena, W., Herman, J., & Witty, J. V. (2010). 'Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites'. *The Internet and Higher Education*, 13, (3), 134-140.
- Rubrico, J. G. U., & Hashim, F. (2014). 'Facebook-photovoice interface: Empowering non-native pre-service English language teachers'. *Language Learning & Technology*, 18, (3), 16–34.
- Said, M. N. H. M., & Tahir, L. M. (2013). 'Towards identification of students' holistic learning process through Facebook in higher education'. In *The 9th International Conference on Cognitive Science* (Vol. 97, pp. 307–313).
- Seaman, J., & Tinti-kane, H. (2013). *Social Media for Teaching and Learning*. Available at <http://www.onlinelearningsurvey.com/reports/social-media-for-teaching-and-learning-2013-report.pdf>. (Assessed 20 July 2015).
- Selwyn, N. (2009). 'Faceworking: exploring students' education-related use of Facebook'. *Learning, Media and Technology*, 34, (2), 157–174.
- Staines, Z., & Lauchs, M. (2013). 'Students' engagement with Facebook in a university undergraduate policing unit'. *Australasian Journal of Educational Technology*, 29, (6), 792–805.
- Statista.com (2016). Numbers of Facebook users worldwide. Available at <http://www.statista.com/statistics/264810/number-of-monthly-active-facebook-usersworldwide/> (Assessed 10 January 2016).
- Tess, P. A. (2013). 'The role of social media in higher education classes (real and virtual) – A literature review'. *Computers in Human Behavior*, 29, (5), A60–A68. doi:10.1016/j.chb.2012.12.032
- Tuunainen, V. K., Pitkanen, O., & Hovi, M. (2009). 'Users' awareness of privacy on online social networking sites – Case Facebook'. In *BLED 2009* (pp. 1–17).
- Väljataga, T., & Fiedler, S. (2009). 'Supporting students to self-direct intentional learning projects with social media'. *Educational Technology and Society*, 12, 58–69.