

The Use of WhatsApp Group in Class-Related Information Sharing Through Academic Discussions

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ABSTRACT

The world nowadays is acquainted with the term 'technology' as humans are surrounded with sophisticated gadgets which may help to ease communication amongst human beings. The purpose of this study was to investigate the students' perceptions on the use of WhatsApp Group in class-related information sharing through academic discussions. Apart from that, this study also examined the impacts of using WhatsApp Group in discussion related to learning as well as to investigate whether or not WhatsApp Group may improve students' learning process. This study was a quantitative study conducted in a college in Perak. Questionnaires were distributed to 150 respondents by using random sampling. The data were analysed by using the SPSS Version 22.0. The results indicated that students have positive perceptions and it gives positive impacts to students' learning by using WhatsApp Group in Class-related Information sharing through academic discussions. The result also shows that WhatsApp Group may lead to students' improvement in their learning process.

INTRODUCTION

The world these days are definitely surrounded by technology. This is proven when Bansal and Joshi (2014) stated that teachers now are required to diverse the use of technology in their teaching, since the students are

more technology-savvy. Teachers are now converting their traditional teaching method to become more technology-like teaching styles to ensure the students' interest is always there in the classrooms, during the teaching and learning sessions. Researchers have found that there is booming of e-learning classrooms, where the students may learn the content online by using the computer mediated tools such as laptops, iPad and smartphones. There are numerous e-learning sites that can be easily found by the teachers and students in order to improve their teaching and learning process and is reflected to be a new notion covering a variation of applications, learning procedures and learning approaches (Barhoumi & Rossi, 2013). E-learning targets to distribute teaching to students which are not present in the classroom. It delivers admission to learning properties when the teacher and students are separated by time, distance or both (Honeyman & Miller, 1993).

However, Amry (2014) indicates that learning could also be affected by multiple variables, including the cognitive and psychological states of the learner, teacher professionalism as well as nature and complexity of the pedagogical approach. On top of that, Prensky (2001) suggests that our students today are all suitable to be recognised as 'native speakers' of the digital language of computers, video games and the Internet. The statement given by Prensky (2001) indicates that the advancement of learning styles is appropriate due to the attitude of young generations in which they are keener to communication and learning through mobile devices such as smartphones.

BACKGROUND OF THE STUDY

In the current scenario, students are categorized as digital natives and they are exposed to digital gadgets since they were born. Throughout their life expectancy, they are surrounded by ICT tools such as laptops, computers, mobile phones and the terms Wall Posts, Status Updates, as well as those microblogging lexical terms namely OOTD, ASAP, LOL, HB and so forth that may indicate the use of Social Media in their daily life. With that, teachers nowadays are moving towards the adaptation of ICT in their teaching and learning such as by the use of online discussions using WhatsApp Group for the purpose of enhancing the digital native students' participations. This happens when the digital native students

would prefer to ask questions outside of the classrooms at their leisure time using WhatsApp. Hence, this research will investigate the use of WhatsApp Group Discussions in class-related information sharing through academic discussions at a college in Malaysia.

RESEARCH OBJECTIVES

The research objectives of this study are:

1. To gauge students' perceptions on the use of WhatsApp Group in class-related information sharing.
2. To identify impacts of using WhatsApp Group to share class-related information.
3. To investigate whether or not WhatsApp Group discussion may improve learning process by sharing information in discussion beyond the class hour

Research Design

This study is a descriptive research utilizing questionnaire as the instrument. The questionnaire consists of three sections which are (1) WhatsApp Group Effects to Class-related Information Sharing, (2) Perceptions towards WhatsApp Group to Class-related Information Sharing and (3) WhatsApp Group Helps to Improve Learning Process beyond the Class Hour. The questionnaire was adapted from Norliyana (2013) and Nur Amalina (2014) and it uses Likert Scale as a medium of measurement.

Samples

The sample of this study includes 150 students from Diploma in International Business (DIB) in MARA Professional College, Seri Iskandar, Perak, Malaysia. These students are digital natives living in the digital gadget world in the 21st century. These students are taking Fundamental Business English at the moment the study is carried out. Their entrance qualifications to further their study in this college are at least 5 credits including Bahasa Melayu and English.

Demographic Background

Table 1 indicates the percentage of male and female students who participated in the study. Findings revealed that female respondents was higher than male respondents. There were 107 female respondents which comprised 71.3% of the whole sample whereas only 43 respondents were male, which made up of 28.3% from 150 samples.

Table 1: Distribution of Gender

	Frequency	Percent (%)
Male	43	28.7
Female	107	71.3
Total	150	100.0

Table 2 illustrates the distribution of age of the respondents. It was clear that the highest respondents involved in this study were 19 years old which comprise 58 respondents while the lowest was 22 years old and above which comprised only 7 which made up of 4.7% out of 150 respondents. It was clear that the respondents of 18 years old and 20 years old were relatively similar in range which include 39 respondents of 18 years old and 37 respondents of 20 years old.

Table 2: Distribution of Age

	Frequency	Percent (%)
18 years old	39	26.0
19 years old	57	38.7
20 years old	37	24.7
21 years old	9	6.0
22 years and above	7	4.7
Total	150	100.0

Table 3 illustrates the years of respondents' experience to use WhatsApp. It indicates that 59 (39.2%) respondents have been using WhatsApp for 3 to 4 years and followed by 55 respondents to use WhatsApp for 1 to 2 years (36.7%). In addition, 28 students have experienced using WhatsApp for 5 to 6 years (18.7%) while 5 students have been using WhatsApp for more than 6 years. There were 3 samples opted for others in

which 1 of the 3 has been using WhatsApp for only 4 months, and followed by another 2 samples for 7 months and 9 months.

Table 3: Distribution of Years Using WhatsApp Group

	Frequency	Percent (%)
1-2 year	55	36.7
3-4 years	59	39.3
5-6 years	28	18.7
More than 6 years	5	3.3
Others	3	2.0
Total	150	100.0

Table 4 indicates the frequency of WhatsApp Checking Daily by the students. A total of 93 out of 150 students was found to frequently check their WhatsApp more than 16 times daily. The lowest was 1-5 times daily with the frequency of 4 while 27 respondents check their WhatsApp Application for 6 to 10 times daily and 18 students checked their WhatsApp for 11 to 15 times daily. There were 6 respondents opted for Others which means 1 respondent checked his WhatsApp every second, the second respondent checked the application for 19 times daily, and followed by 2 other respondents for 32 times daily, 27 times daily and lastly for more than 20 times daily.

Table 4: Frequency of WhatsApp Checking Daily

	Frequency	Percent (%)
1-5 times daily	4	4.0
6-10 times daily	27	18.0
11-15 times daily	18	12.0
More than 16 times daily	93	62.2
Others	6	4.0
Total	150	100.0

Table 5 indicates the number of WhatsApp Group the respondents have in their WhatsApp Application. Majority of the respondents have 4 to 7 groups with the frequency of 67 (44.7%), while the second highest was 8 to 10 groups with the frequency of 52 (34.7%).

Table 5: Number of WhatsApp Group

	Frequency	Percent (%)
1-3 groups	7	4.7
4-7 groups	67	44.7
8-10 groups	52	34.7
Others	24	16.0
Total	150	100.0

Table 6 demonstrates the average time the students spent to communicate per session. The highest percentage found at less than 15 minutes per session with 41 students (27.3%) who opted for that range, while the second was at 26% students admitted that they spent at least 16 to 30 minutes per session. Falling not too far behind the leading range was 28 students who determined to spend more than 1 hour per session.

Table 6: Time Spent to Communicate in WhatsApp Group per Session

	Frequency	Percent (%)
Less than 15 minutes	41	27.3
16-30 minutes	39	26.0
31-45 minutes	21	14.0
46-60 minutes	19	12.7
More than 1 hour	28	18.7
Others	2	1.3
Total	150	100.0

Students' Perceptions towards WhatsApp Group

This section outlines the findings of the students' perceptions on the use of WhatsApp Group in Academic Discussion.

Table 7: Distribution of Findings for Students' Perceptions

Item	Item Detail	Mean	Std. Deviation
B15	Promotes a collaborative and cooperative learning environment with my lecturers and classmates.	4.42	4.24
B12	Helps me to have instant discussions with my lecturer and classmates.	4.38	4.09
B10	Helps me to collaborate with my classmates.	4.20	0.85
B8	Let's me stay up-to-date with my lecturer and friends.	4.15	0.84
B14	Helps me actively participate in general discussion about our academic course topics.	4.13	1.65
B11	Eases the process of discussion between lecturer and students without having to have face-to-face meeting.	4.00	0.83
B9	Helps me to get useful information related to my academic content.	4.02	0.82
B13	Increases my interaction with my lecturers and classmates.	3.63	1.00

Table 7 clarified that the mean value for item B13 was the lowest with mean value of 3.63 (SD=1.00). On the contrary, item B15 had the highest mean value of 4.42 with 4.24 standard deviation value. Overall results show that the respondents have positive perceptions on WhatsApp Group usage in academic discussions.

This section also contained one open-ended question. The question was "Do you think that WhatsApp Group will be able to help you to share information related to class with classmates?" Some of the feedbacks were:

Respondent 86

"WhatsApp can also be useful during emergency such as when we as students don't have credit because it is free."

Respondent 89

"WhatsApp may give simple way of communication and no need to see face to face because we can get rapid information."

Respondent 93

“Using WhatsApp can be more interesting and more efficient while we exchange ideas and information between class members.”

Respondent 105

“WhatsApp Group helps me to ease my burden to complete my assignment when we do jokes and it makes me laugh and release stress.”

In short, these points of view justified that the students would feel comfortable and excited towards the implementation of the use of WhatsApp group as a method to share information amongst the lecturers and students.

WhatsApp Group Impacts to Class-related Information Sharing

Table 8 clarified that the mean value for item C25 was the lowest with mean value of 3.92 (SD=0.87). On the contrary, item C19 has the highest mean value of 4.42 with 0.89 standard deviation value. Overall results show that have positive perceptions on WhatsApp Group usage in academic discussions.

Table 8: WhatsApp Group Impacts to Class-related Information Sharing

Item	Item Detail	Mean	Std. Deviation
C19	When I am not sure about some matters related to my course subject, I will ask my lecturer and classmates in WhatsApp Group	4.42	0.89
C20	I use WhatsApp Group to share my learning content with my lecturer and classmates	4.41	0.89
C21	I believe WhatsApp Group is a good medium to develop close relationship between lecturer and students.	4.24	0.75
C18	I believe WhatsApp Group would help me to remember information that we have learned in class.	4.09	0.93
C22	I believe I would be more confident to voice out my opinion in WhatsApp Group rather than face-to-face interactions.	3.96	0.97

C23	I believe WhatsApp Group can be useful for organizing learning activities with lecturer and classmates.	3.96	0.97
C24	I believe WhatsApp Group is a relevant, active and interesting way of communicating with lecturer and classmates especially for post classroom discussions.	3.93	0.87
C17	I believe WhatsApp Group plays an important role in exchanging information with lecturer and classmates after the class hour.	3.93	0.87
C25	I believe WhatsApp Group has a significant potential for functioning as an educational tool in discussions after the class hour.	3.92	0.87

This section also contains one open-ended question. The question was “What is the most significant impact of using WhatsApp group in sharing class-related information with lecturer and classmates?” Some of the answers were:

Respondent 5

“WhatsApp Group may give positive impacts on the relationship between classmates and also between lecturers.”

Respondent 12

“Helps to get instant feedbacks from lecturers and friends when needed.”

Respondent 25

“WhatsApp Group gives easy ways to me to any class-related word, especially in deal with assignments.”

Respondent 30

“WhatsApp Group give me a lot of benefits especially when I don’t understand about any subjects.”

Respondent 36

“Assignment and tasks can be distributed equally and we can have good discussions in WhatsApp Group.”

Respondent 47

“WhatsApp Group is an interactive way to do work require team work.”

Respondent 86

“WhatsApp group helps me to have small meeting with teammates.”

These opinions justified that most students believe that WhatsApp group could enhance their learning during or after class sessions and at the same time they would also believe that WhatsApp group could promote good relationship with other classmates and lecturers.

WhatsApp Group Helps to Improve Learning Process

Based on Table 9, the mean value for item D27 is the lowest with mean value of 2.37 (SD=0.95). On the contrary, item D31 has the highest mean value of 3.98 with 0.95 standard deviation value. Overall results show that it has positive improvement on students’ learning process.

Table 4.10: WhatsApp Group to Improve Learning Process

Item	Item Detail	Mean	Std. Deviation
D31	WhatsApp Group may help me to boost up my confident level in voicing out opinion instead of face-to-face interactions.	3.98	0.95
D28	WhatsApp Group helps me to improve my understanding on matters I do not understand about my course content.	3.87	0.86
D29	WhatsApp Group may improve the way I communicate with lecturers and classmates by getting rapid feedback.	3.87	0.73
D30	WhatsApp Group may improve the relationship between lecturer- students and students-students in academic discussion.	3.74	0.88
D27	WhatsApp Group helps me to improve in developing my skills (Writing, Speaking, Listening, Reading) related to the academic outside of class.	2.37	0.95

This section also contains one open-ended question. The question was “How will WhatsApp Group help you to improve in sharing information related to the course you undergo?”. The feedbacks were generally positive and a few of the feedbacks were:

Respondent 17

“From the WhatsApp, we can be able to share and inform any information or discuss task that has been given by lecturers because most of the students do not have enough time to go and see lecturers face-to-face so we can just discuss in the WhatsApp Group.”

Respondent 33

“WhatsApp Groups helps me improve my understanding about anything I don’t understand in the class.”

Respondent 87

“This helps me improve my learning when I take photos during lecturer present and forward it in WhatsApp group so I can help my friends to understand also.”

Respondent 99

“Helps me to save money because I don’t need to always topup my phone and just discuss anything in WhatsApp group.”

Respondent 111

“It helps me to get extra information and knowledge from the forward message from friends.”

Respondent 121

“WhatsApp group may help me to discuss about tasks without having to meet and have face-to-face meeting so it improves my time management for meeting face-to-face.”

Respondent 130

“By having discussion in WhatsApp group, I can improve my pronunciation where the lecturer give the words and ask us to record our voice and try to pronounce the words correctly.”

Respondent 143

"I can always refer back to the previous messages so that I won't forget the old information during I do revisions."

What are the students' perceptions on the use of WhatsApp Group in class-related information sharing beyond the class hour?

Based on the data analysis that was done on demographic background, it could be concluded that all respondents were active in using WhatsApp in their daily life. The communication on using WhatsApp would not just focus on the interactions between peer to peer, but they could also be actively interacted in group communications. This could be seen from the analysis that 62% respondents spent more than 16 times daily to check on WhatsApp and 79.4% respondents had at least 4 WhatsApp groups and more. This indicates that all respondents did not have problems in using WhatsApp since they were active to communicate in WhatsApp group. Hence, this analysis supported the statement by Jones et al. (2010) that students, known as Generation-Y nowadays may not be having difficulties in learning through the latest Social Media since they have been familiarised with those sophisticated platforms.

Majority of the students agreed that WhatsApp group created a collaborative learning environment in which the result could be seen on the mean score for item B15 "promotes a collaborative and cooperative learning environment with my lecturers and classmates" (mean = 4.42). Therefore, this result supports the output from a study by Rojas (2010) that ICT could be used as one method to encourage students to keep on learning, as WhatsApp, also a tool under ICT, could create good environment for learning.

On top of that, the overall perception was computed as shown in Table 7 with the mean score 4.09 and standard deviation 0.93 which indicate that majority of the students had positive perception towards using WhatsApp group in sharing information. Hence, it was believed that students felt encouraged to use the new ways of learning method in discussion and it could enhance collaborative learning (Kessler, 2010). Students could also gain extra information and knowledge by using WhatsApp group discussion with the help of Social Media especially the WhatsApp application that could gather more information online.

A number of respondents also provided positive feedbacks and opinions about the implementation of WhatsApp group in sharing information related to class with other classmates. In conclusion, these points of view justified that the students would feel comfortable and excited towards the implementation of the use of WhatsApp group as a method to share information amongst the lecturers and students. This result may upkeep the statement by Tian et al. (2011) that apart from receiving information on the learning contents, students could also enhance and create more joyful lifestyle. On top of that, students would feel learning is not a burden based on the environment that has been generated when students may have discussions using Social Media (Rojas, 2010).

What are the impacts of using WhatsApp Group to share class-related information?

Based on the results, most of the students agreed that WhatsApp group provided positive impacts in sharing class-related information. The result in Table 8 shows that the highest mean score was 4.42 for item C19 “When I am not sure about some matters related to my course subject, I will ask my lecturer and classmates in WhatsApp Group”. This result justified that most of the students believe that learning process would become easier and flexible with the use of WhatsApp Group in discussions. Students do not need to wait for any specific time to discuss in case they are having problems related to their study and discussion for any matters could be done at anytime even after classroom sessions (Preston et al., 2013).

The second highest mean score was calculated for item C20 “I use WhatsApp Group to share my learning content with my lecturer and classmates” which received the mean score of 4.41 which revealed that majority of the students believed that WhatsApp group could be one of the tools for them to share knowledge and information with their lecturer and classmates. Nowadays, knowledge and information is not only gained from the books, but it could also be gained from other online sources such as forums, videos and blogs. WhatsApp group could easily help students to share information with classmates and lecturers for the purpose of knowledge sharing or to create discussion in order to get clear understanding about information that has been shared (Bertelson et al., 2009).

Besides that, most of the students gave good responses and feedbacks about the impacts of using WhatsApp group in sharing information. These feedbacks justified that most students believe that WhatsApp group could enhance their learning during or after class sessions and at the same time they would also believe that WhatsApp group could promote good relationship with other classmates and lecturers. This result reflected that learning could be more effective with quality output when students feel comfortable and at the same time it generates good relationship among teacher and students (Preston et al., 2013; Tian et al., 2011).

How can WhatsApp Group discussion help to improve students learning process by sharing information in discussion beyond the class hour?

Based on Table 10, the highest mean score of 3.98 was calculated for item D31 “WhatsApp Group may help me to boost up my confident level in voicing out opinion instead of face-to-face interactions”. This is consistent with Kessler (2010) that the encouragement for students to participate more in discussion by asking more opinions could be done through discussion on WhatsApp group. The lecturers could also receive benefit from this discussion in which they can evaluate their students’ academic performances base on the topic discussed.

The second highest mean score was 3.87 which is calculated for item D28 “WhatsApp Group helps me to improve my understanding on matters I do not understand about my course content”. Majority of the students agreed with this item as discussion could be done in more proactive environment in which is more comfortable to voice out with opinions (Rojas, 2012). Besides that, WhatsApp group could also be the medium for students to revise lessons which have been delivered in class with classmates and lecturers.

Other than that, most of the students gave positive feedbacks and comments in the open ended question that was asked in which it required their personal opinion on WhatsApp group towards learning process. It could be concluded that the students believed that this medium could benefit them to get information easily particularly by using the online discussions through WhatsApp Group. Furthermore, communication could also be done with less expenses. Besides that, students believed that WhatsApp group is very useful to discuss topics related to learning anytime and anywhere.

CONCLUSION

Students have shown positive responses on the use of WhatsApp Group in class-related information sharing through academic discussions. With this, it allows all parties to be easily updated and they may even receive rapid feedbacks on the go as everybody is having the WhatsApp Application in their smartphones and tablets now. Apart from that, WhatsApp group may also motivate the students to communicate and have discussions on academic matters, since it may bring confidence to students to voice out opinions in the discussions. Teachers and lecturers may also enhance students to follow this new way of communication to become handier, so that learning sessions would be interesting. In conclusion, this research is done with hope to shed the light on the trend of using WhatsApp Group in discussing several matters. With the notable findings that have been gathered, it becomes clearer

REFERENCES

- Adam Mahamat Helou, & Nor Zairah Ab. Rahim. (2011). Pattern Of Undergraduates' Participation in the WhatsApp Discussion Forum at the University of Ilorin Nigeria. *Journal of Information Technology Management, 15*(3), 310-321.
- Amry, A. B. (2014). The Impact of Whatsapp Mobile Social Learning on the Achievement and Attitudes of Female Students Compared with Face to Face Learning in the Classroom, *10*(22), 116–136. Retrieved on 18 June 2015, from <http://ejournal.org/index.php/esj/article/viewFile/3909/3700>.
- Andrew, Nusca. (2009). Smartphone vs. feature phone arms race heats up; which did you buy. *Journal of Information Technology, Volume 10*(3), 110-117. Retrieved on 18 June 2015, from <http://ejournal.org/index.php/esj/article/viewFile/3909/3700>.
- Bansal, T., & Joshi, D. (2014). A Study of Students' Experiences of Mobile Learning. *Journal of Information Technology, 14*(4). Retrieved on 18 June 2015, from <http://socialscienceresearch.org/index.php/GJHSS/article/view/1326/1267>.

- Barhoumi, C., Rossi, PG. (2013). The Effectiveness of the Instruction Oriented Hypertext Systems compared to Direct Instruction in e-learning Environment. *Contemporary Educational Technology*, 4(4), 281-308.
- Bertelsen, O. W. and S. Bodker. (2009). Activity theory. In J. M. Carroll (Ed.), *HCI models, theories, and frameworks: Toward a multidisciplinary science*. San Francisco, CA: Morgan Kaufmann. 291-324.
- Bere, M. (2012). How Social Media Can and Should Impact Higher Education. *Outlook*, 21, 11–12. Retrieved on 17 July 2015 from http://findarticles.com/p/articles/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Boyd, D., & Ellison, M. (2009). Social Network Sites. *Journal of Information Technology Education: Research*. 82(13), 50-55.
- Cassidy, J. (2006, May 15). Me media: How hanging out on the Internet became big business. *The New Yorker*, 82(13), 50.
- Chafkin, M. (2007, June). How to kill a great idea! *Inc. Magazine*. Retrieved August 27, 2007 from <http://www.inc.com/magazine/20070601/features-how-to-kill-a-great-idea.html>.
- Charles, A. (2013). Nokia revenues slide but Lumia sales rise offers hope. *The Guardian*. *Journal of Computers & Marketing*, 54(1), 776–782.
- Cheung, W. S., Hew, K. F., & Ng, S. L. (2010). Toward an understanding of why students contribute in asynchronous online discussions. *Journal of Educational Computing Research*, 38(1), 29–50.
- Crescente, H. R., & Lee, W. H. (2011). Getting to know one another a bit at a time. *Human Communication Research*, 28(3), 317–348.
- Crompton, H. (2013). A historical overview of mobile learning: Toward learner-centered education. In Z. L. Berge & L. Y. Muilenburg (Eds.), *Handbook of mobile learning*, (pp. 3–14). Florence, KY: Routledge
- Dixon, P. M. (2006). *Virtual college*. Princeton, NJ: Peterson's.

- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “Friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
- Festa, P. (2003, November 11). Investors snub Friendster in patent grab. CNet News. Retrieved August 26, 2007 from http://news.com.com/2100-1032_3-5106136.html.
- Flemming, C. (2012). Social networks and Information Technology. *Information, Communication, & Society*, 8(2), 125-147.
- Giesen, D., Meertens, V., Vis-visschers, R., & Beukenhorst, D. (2012). WhatsApp Development in Education. 30(7). 1–82.
- Haythornthwaite, C. (2005). Social networks and Internet connectivity effects. *Information, Communication, & Society*, 8(2), 125-147.
- Honeyman, M; Miller, G. (1993). Agriculture distance education: A valid alternative for higher education?. Proceedings of the 20th Annual National Agricultural Education Research Meeting: 67–73.
- Hong, K. S., Abang Ahmad Ridzuan, & Kuek, M. K. (2008). Students’ attitudes on the use of the Internet for learning: A study at a university in Malaysia. *Educational Technology & Society*. (Unpublished thesis). Universiti of Malaya, Malaysia.
- Huffpost Education (2013). Social networking in schools. Educators debate the merits of technology in classrooms. Retrieved on 17 July 2015 from http://findarticles.com/p/articles/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Isil, W. R., & Gary, J. W. (2013). Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations: Getting to know one another a bit at a time. *Human Communication Research*, 28(3), 317–348.
- Jalil, S. A., Jalil, A. K., Latiff. (2010). Social Media And Our Youths Today: Exploring The Impact Of Social Media On Malaysian Youths. Retrieved

- on 17 August 2015 from http://findarticles.com/p/articles/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Jones, N., Blackey, H., Fitzgibbon, K., & Chew, E. (2010). Get out of MySpace!. *Computers & Education*, *54*(1), 776–782.
- Johnson, L., Levine, A., & Smith, R. (2009). *The 2009 horizon report*. Austin, Texas: The New Media Consortium.
- Kessler, S. (2010). Twitter increases student engagement (study). Retrieved on 30 April 2015 from http://www.mashable.com/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Kirschner, P. a., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, *26*(6), 1237–1245. <http://doi.org/10.1016/j.chb.2010.03.024>.
- Kosik, S. W. (2007). The Implications of Facebook. Sharing the Commonwealth: Critical issues in higher education. 9-10. Retrieved on 17 August 2015 from http://findarticles.com/p/articles/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Kvavik, R. B. (2004). Convenience, communications, and control: How students use technology. *34*(5), 135-145.
- Krejcie, V. & Morgan, Z. (1970). Mutual teaching: Review of Enlightening Research, *64*(4), 479–531.
- Prensky (2001). Computer-mediated message possessions on interpersonal evaluations: Getting to know one another a bit at a time. *Human Communication Research*.
- Preston, G., Phillips, R., Gosper, M., McNeill, M., Woo, K., & Green, D. (2013). Web-based lecture technologies: Highlighting the changing nature of teaching and learning. *Australasian Journal of Educational Technology*, *26*(6), 717-728.
- Rosenshine, B. & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research*, *64*(4), 479–531.

- Macmillan Oxford Dictionary (2010). Seventh Edition. Chicago. Macmillan Press.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university. *Learning Media and Technology*, 34(2), 141-155
- Mandl, H., & Zumbach, J. (2008). Web-based teaching and learning technologies. *Australasian Journal of Educational Technology*, 26(6), 717-728.
- Martin, A. (2006). Literacies for the digital age. In A. Martin (Ed.), *Digital Literacies for Learning* (pp. 3-25), London: Facet.
- Merriam Webster's Dictionary (2014). WhatsApp. Retrieved on 30 April 2015 from http://www.merriamwebster.com/mi_hb3184/is_20101129/ai_n56465985/pg_2/?tag=mantle_skin;content.
- Motiwalla, L. F. (2007). Mobile learning: a framework and evaluation. *Computers & Education*. 49(3), 581-596.
- Norliyana (2013). The Role of Microblogging for the Curriculum Activities among the Secondary School Students in Shah Alam. (Unpublished thesis). Universiti Teknologi MARA. Shah Alam, Malaysia.
- Nuramalina (2014). The Role of Social Networking Sites in Improving UiTM's Undergraduates' Academic Learning Process. (Unpublished thesis). Universiti Teknologi MARA. Shah Alam. Malaysia.
- Oxford Advanced Learners Dictionary (2009). Seventh Edition. Oxford University. Oxford Press.
- Rojas, F. A. (2012). Students' Perspective of the Role of Facebook in their Studies. *Journal of Social Science*. 49(3), 581-596.
- Rosenshine, B. & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research*, 64(4), 479-531.

- Selwyn, N. (2012). Social media in higher education. In *Europa World of Learning 2012*. Social Science Research. 978-1-85743-620-4.
- Shirky, C. (2008). *Here comes everybody*. London, Allen Lane. A review of the research. *Review of Educational Research*, 55(3), 177-185.
- Sharifah Sofiah. (2013). Relationship between Facebook Usage and Attitude with Facebook Addiction among Malaysian Female University Students. 30(7), 111-120. Retrieved on 18 June 2015, from <http://eujournal.org/index.php/esj/article/viewFile/3909/3700>.
- Schubert-Irastorza, C., & Fabry, D. (2014). Job Satisfaction, Burnout and Work Engagement on higher education. *Journal of Research in Innovative Teaching*, 7(1), 37–50.
- Skog, D. (2005). Social interaction in virtual communities: The significance of technology. *International Journal of Web Based Communities*, 1(4), 464-474.
- Statista Online Statistics Portal (2014). WhatsApp Application Users. Retrieved on 25 Jan 2015. From <http://upstart.bizjournals.com/multimedia/interactives/2015/01/facebook-whatsapp-users-statista-infographic.html>.
- Tian, S. Yu, A. Y., & Kwok, R. C. (2011). The impact of online social networking on learning. A social integration perspective. *International Journal of Networking and Virtual Organisations*. 1(7). 98-118.
- Trentin, L. C., & Repetto, J. B. (2013). Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations: Getting to know one another a bit at a time. *Human Communication Research*, 28(3), 317–348.
- Veira, A. K., Leacock, C. J., & Warrican, S. J. (2014). Learning outside the walls of the classroom: Engaging the digital natives. *Australasian Journal of Educational Technology*, 30(2), 227–244.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.