Using Facebook for the Purpose of Students' Interaction and its Correlation with Students' Academic Performance

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ABSTRACT
Facebook has now become the most popular social networking tool among university-aged youth. Its popularity has transformed it into an acceptable platform for educational purposes. The use of Facebook is currently more suited to facilitate online interaction among learning participants. The purpose of this study is to investigate students' perception towards the use of Facebook for course-related online interaction and its effect on academic performance. The data were collected using a survey method of data collection. A quantitative data analysis process was employed using SPSS statistics software. The findings of the study revealed that students had positive views towards the use of Facebook for online interaction with peers. Additionally, the findings reveal that there is a relationship between students' perceived online interaction via Facebook and academic performance.

Keywords: Student interaction, Social Network, Facebook, academic performance.

INTRODUCTION
Facebook is just one part of web 2.0 technology. Web 2.0, or social networking tools, have changed the way people access, manage and exchange knowledge, as well as the way they connect and interact. This change has led to the emergence of different learning styles, especially among young people. On the other hand, educators believe that social networking tools offer flexible and dynamic learning opportunities that are often more appealing and engaging than traditional learning arrangements (Heid, Fischer, & Kugemann, 2009).

Facebook in higher education
Facebook is almost universally-used among higher education students. These students consider Facebook as their main social media choice and therefore spend a great part of their time in its use in their normal day (Ellefsen, L, 2015). In a study conducted in one of Malaysia's large public Universities, the researchers found that, among 105 students, only three students stated that they did not use Facebook (with only 2.8 percent) (Alhazmi, A. and Rahman, A, 2013). Moreover, in a study conducted in Universiti Teknologi Malaysia (UTM), the findings of the study showed that 97.10% of students use Facebook compared to 28.50 %use blogs and only 14.50% use Twitter alongside their use of Facebook (Aldheleai, 2010).

Students, on the other hand, spend a considerable amount of time actively on Facebook. Wiley and Sisson (2006) in their study reported that 91% of college students use Facebook. Another study showed that college students use Facebook on an average of 10 to 30 minutes daily (Ellison, Steinfield, & Lampe, 2007). Similarly, results of a study by Pempek, Yermolayeva and Calvert (2009) showed that college students spend an average of 27.93 minutes per day during weekdays and an average of 28.44 minutes per day during weekends on Facebook. However, Alhazmi, and Rahman (2013) reported that 78.9% of students spend more than one (1) hour a day on Facebook. More interesting facts were found by Junco, (2012) when the findings went beyond other studies by revealing that students spend 100 minutes every day on Facebook. The findings showed that Facebook is the place where nowadays university students are linked with their virtual world.

The EDUCAUSE Center for Applied Research (ECAR) conducted a study that targeted 36,950 students from 126 US universities and one Canadian university. Results found that 90% of those students are using social networking tools. The number of Facebook users from the percentage of social networking users totaled 97% and they reported daily activity on this site (Smith and Caruso, 2010). Students use Facebook for different

purposes and this use can differ from one student to another. According to Wesseling (2012), there are four major activities practiced by Facebook users which include:

i. information-sharing (receiving/providing information and generating ideas),
ii. sharing for educational purposes (for learning, problem-solving and sharing   work),
iii. social purposes (retrieving personal information about others or themselves, chatting, making appointments and generally keeping in touch)
iv. leisure (gaming and relaxing).

In general, students have positive perceptions towards using social networking tools as a learning medium; and they went beyond that when they agreed with a suggestion to adopt social networking as an e-learning platform (Tasir, Al-Dheleai, Harun and Shukor, 2011). In particular, higher education students seem to have a positive attitude towards the use of Facebook for educational purposes. In a focus group study conducted by Ellefsen (2015) it was reported that all focus groups' participants had positive feelings towards the potential use of Facebook within higher education. Wesseling (2012) revealed that students use social networking sites (e.g. Facebook) for a number of purposes and in different percentages; the percentage of students who use these sites for social purposes is 70.1% and to exchange information 70.2%. The study also showed that 49.7% of students use Facebook for educational purposes. The percentage of information exchanged by Facebook users reflects the current trend of the users to take the benefits of this tool. On the other side, student highly believe that Facebook can facilitate and enable the instructors to achieve their online roles of instructional design and organization, facilitating students' discourse and providing direct instructions (Al-Dheleai and Tasir, 2016). This finding is considered as encouraging for the idea of using Facebook for learning purposes. Different findings have been found in the Malaysian context by Hamat et al (2012) where it was discovered that 84% of Malaysian students use social networking sites to interact and communicate with their peers for informal learning purposes. However, only 49.7 of students communicate with their lecturers for academic matters and this is quite similar with Wesseling's (2012) findings. Therefore, to encourage students' to interact more with the instructors, Al-Dheleai and Tasir (2015) recommended the use of Facebook group as interaction medium as students and instructor can interact through Facebook group without being Facebook friends; this can reduce students' concern about invading their privacy. From the findings of those studies, it is obvious that students are trying to gain benefits from Facebook for their learning activities.

Further research on learning through Facebook has been conducted by, Idris and Ghani (2012) where they analyzed Facebook discourse. They stated that social network sites could indeed become a platform where users generate reflective thinking, construct knowledge and consequently enhance learning. Their findings showed that users generally utilized all the indicators of construction of knowledge in their Facebook interaction, despite the virtual and asynchronous nature of social network sites (Idris & Ghani, 2012).

In continuous efforts by researchers to examine the possibility of using Facebook for specific course-related learning, another study in Malaysia was conducted by Kabilan, Ahmad, and Abidin (2010) concerning Facebook as an online environment for English learning in Malaysia. The findings of their study revealed that students have a positive opinion about the use of Facebook for learning English; students believe that Facebook can facilitate English language learning in terms of (1) language skills improvement, and (2) students' motivation, confidence and attitudes towards English language learning. Additionally, students agreed that the use of Facebook would enhance their communication skills. Researchers attributed students' positive opinions towards Facebook as an environment in which to facilitate English learning in that online platforms, such as Facebook, provide authentic interaction and communication opportunities that the students might not have experienced before. Researchers concluded that, through Facebook, students would be the managers of their own learning with the help of other Facebook members and their instructors (Kabilan et al., 2010). However, a study by Kabilan et al (2010) focused on learning English while other courses need to be investigated to determine how Facebook can further facilitate students' learning processes.

Facebook and students' performance
It is certain that the way in which students use Facebook can determine the effect of its use on students' academic achievement. Facebook has a positive effect on students' achievement when used for educational purposes. Junco (2012) found that when students use Facebook for educational purposes such as gathering information ,checking to see what friends are up to and sharing information (sharing links), it results in a positive academic outcome better than when they used it merely for socializing such as status update and chatting. There is also a positive effect when students contact or visit their instructor's website. Students viewing their instructor's website reflect a high level of motivation, effective learning, teacher credibility and positive attitudes towards the course and the teacher (Mazer, Murphy, & Simonds, 2007, 2009). In her study, Haverback (2009)

observed and examined her students' activities within the Facebook community. The activities she observed included the ways in which students discuss their assignments, ask and answer questions, post information and support each other for their Reading Education Methods course. She found that students are motivated to be involved in Facebook discussions with better understanding of the theoretical principles of effective reading. The development of good reading ideas can be seen better when students work in-group rather than when they read individually. Therefore, university students believe that Facebook and similar social networking tools have the possibility to support classroom work (Roblyer, McDaniel, Webb, Herman, and Witty, 2010).

OBJECTIVES
i. To determine students' perceptions about the use of Facebook for student-student interaction;
ii. To analyze the difference in students' perception of using Facebook for student-student interaction based on their gender;
iii. To analyze the relationship between students' perception regarding the use of Facebook for student-student interaction and their academic performance.
iv.

METHODOLOGY
The quantitative method was employed for both the data collection and data analysis process of this study. The questionnaire was used as a data collection instrument to collect data from the respondents. Forty-nine (49) students in Universiti Teknologi Malaysia were the respondents for this study. The data of this study was collected during the academic year of 2015/2016 Semester 1. The data was analyzed using the Statistical Package for Social Science SPSS 20.

INSTRUMENT
The questionnaire was developed by the researcher to measure students' perception of course-related interactions on Facebook and their academic performance. The questionnaire is comprised of eight constructs which are: question; answer; comment; discussion; information–sharing; scaffolding; and reflection. The independent variables constructs are based on a pattern of electronic discussions and knowledge construction (Zhu, 1996). The researchers developed the items that measure each construct in order to explain students' perception on each interaction category. The dependent variable items were also developed by the researchers to measure students' perceived academic performance when using Facebook for student-student course-related interaction. The researchers conducted a reliability test to determine the level of internal consistency of the measurement instrument. The findings of the reliability test showed that the questionnaire has a high internal consistency level with Cronbach's Alpha 0.95.

Table 1: Questionnaires' items reliability statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.956	.958	23

DATA ANALYSIS
The data analysis were done using Statistical Package for the Social Science "SPSS, version .20" software. Students' perceptions of student-student interaction in online interaction via Facebook were analyzed through a descriptive analysis process by finding the mean and standard deviation for every construct. One simple t-test was used to analyze the difference between students in their perception about student-student online interaction via Facebook based on their gender. Pearson correlation was used to ascertain the correlation between student-student interaction and their academic performance.

Findings
The findings in Table 2 show that students strongly believe that they can post questions to other peers with mean 4.22 and SD of .77. Students also expected that posting questions on Facebook should help them to understand course content with mean 4.12 and SD of .92. In general, students have a high and positive perception about posting questions on Facebook with an overall mean of 4.17 and SD of .67.

Table 2: Students' perception of posting questions on Facebook

Question		Mean	SD
Item No	**Item**		
1	I can post my questions to other course participants via Facebook.	4.22	0.77
2	Students' questions via Facebook should be related to the course content.	4.18	0.69
3	Posting questions via Facebook should help me to find an appropriate answer from other course participants.	4.12	0.92
Overall mean		4.17	0.67

The findings shown in Table 3 revealed that students believe that they can post their answers via Facebook with mean of 4.18 and SD .69. They also expecting that other students' answers via Facebook can help them to better understand the course content with mean of 3.96 and SD of .64. The overall mean value 4.11 shows that students have a high perception of posting answers via Facebook with overall mean of 4.10 and SD .64.

Table 3: Students' perception of posting answers on Facebook

Answer		Mean	SD
Item No	**Item**		
1	I can post my answers to other course participants' questions via Facebook.	4.18	0.69
2	I should receive answers for my questions from other course participants via Facebook.	4.16	0.68
3	Students' answers via Facebook should help me to understand the course content.	**3.97**	0.77
Overall mean		4.10	0.64

The findings in Table 4 reveal that students strongly believe that they can comment on other students' course-related posts on Facebook with mean of 4.32 and SD of .51. Students also expecting that other students should comment on what they posts on Facebook with mean of 4.14 and SD of .67. In general, students have a high perception about posting comments related to their course via Facebook with overall mean of 4.22 and SD .57.

Table 4: Students' perception of posting comments on Facebook

Comment		Mean	SD
Item No	**Item**		
1	I can comment on other students' course-related posts on Facebook.	4.32	0.51
2	Other students should comment on my course-related posts on Facebook.	4.20	0.76
3	Comments' from peers on course-related posts via Facebook should help me to understand the course content.	4.14	0.67
Overall mean		4.22	0.57

The findings in Table 5 indicate that students strongly believe that they can participate in discussions related to their course on Facebook with mean of 4.20 and SD .57. They also believe that discussion on Facebook should be related to the course content with mean of 4.16 and SD .65. Students in general have a high positive perception regarding the discussion on Facebook with overall mean of 4.14 and SD .54.

Table 5: Students' perception of participating in discussion on Facebook

	Discussion		
Item No	**Item**	**Mean**	**SD**
1	I can participate in the course-related peer discussion via Facebook.	4.20	0.57
2	Other students' should participate on the course-related discussion via Facebook.	4.16	0.58
3	Students' discussion via Facebook should be related to the course content.	4.16	0.65
4	Course-related discussion via Facebook should help me to understand the course content.	4.06	0.71
Overall mean		4.14	0.54

The findings in Table 6 show that students believe that they can share information related to their learning via Facebook with mean of 4.38 and SD .57. Moreover, students have a high perception that sharing information related to their learning via Facebook can help them to better understand the course content with mean of 4.36 and SD .60. In total, students have a high perception about the ability and benefit of sharing information related to their course with overall mean of 4.40 and SD .52.

Table 6: Students' perception of sharing information on Facebook

	Information Sharing		
Item No	**Item**	**Mean**	**SD**
1	I can participate in sharing information with other students via Facebook. (ex: website link, video, document)	4.38	0.57
2	Other students should share information via Facebook. (ex: website link, video, document).	**4.44**	0.61
3	Information sharing by students via Facebook should be related to the course content.	4.42	0.61
4	Information sharing by peers via Facebook should help me to understand the course content.	4.36	0.60
Overall mean		**4.40**	0.52

Findings in Table 7 demonstrate that students greatly believe that via Facebook they can scaffold their peers to help them to understand the course content with mean of 4.14 and SD .54. Additionally, students strongly believe that other students' support via Facebook help them to understand the course content with mean of 4.10 and SD .68. Generally, students have a high perception of the ability and benefit of students' scaffolding in their learning with overall mean of 4.10 and SD .54.

Table 7: Students' perception of scaffolding peers via Facebook

	Scaffolding		
Item No	**Item**	**Mean**	**SD**
1	I can provide information via Facebook to support peer students understanding of the course content.	4.14	0.54
2	Other students should provide information via Facebook to support my understanding of the course content.	4.08	0.57
3	Students' support via Facebook should help me to understand the course content.	4.10	0.68
Overall mean		4.10	0.54

The findings in Table 8 highlight that students believe that Facebook allows them to post statements that reflect their level of the course content understanding with mean of 4.28 and SD .57. Moreover, students strongly believe that other students' should reflect on their level of the course understanding with mean of 4.18 and SD .66. Generally, students have a high perception on the ability posting reflection statements via Facebook with overall mean of 4.20 and SD .56.

Table 8: Students' perception of posting reflections on Facebook

Reflection			
Item No	Item	Mean	SD
1	I can poste statements via Facebook that reflect my level of course content understanding.	4.28	0.57
2	Other students should post statements via Facebook that reflect their level of the course content understanding.	4.18	0.66
3	My posts, comments and discussion via Facebook should reflect a good level of the course content understanding.	4.14	0.64
	Overall mean	**4.20**	**0.56**

An independent sample t-test was conducted to examine whether there was any significant difference between female and male students in their perception of using Facebook for student-student interaction. The findings of group statistics table revealed that female students reported a slightly lower level of perception (Mean = 4.13, SD = .421) than their counterpart male students (Mean = 4.37, SD = .567). However, the difference between female and male was not significant (t = -1.601, df = 47, p = .116).

Table 9: Group statistics for students' difference on perception of using Facebook for student-student interaction based on gender.

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Student-student interaction	Female	35	4.13	.4210	.07117
	Male	14	4.37	.5678	.15176

Table 10: Independent Sample Test for students' difference on perception of using Facebook for student-student interaction based on gender.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Student-student Interaction	Equal variances assumed	2.39	.128	-1.60	47	.116	-.23602	-.23602	-.53266	.06061
	Equal variances not assumed			-1.40	18.99	.175	-.23602	-.23602	-.58686	.11481

The Pearson Correlation Coefficient test was conducted to determine the relationship between students' interaction via Facebook and their academic performance. The findings of the test revealed that student interaction via Facebook was positively and significantly related to students' academic performance, r = .567, n = 49, p = .000.

Table 10: The correlation between students' perception about the use of Facebook for student-student interaction and their academic performance.

		Student Academic performance
Student-student interaction	Pearson Correlation	.567**
	Sig. (2-tailed)	.000
	N	49

**. Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION AND CONCLUSION

The findings of this study indicated that students have a positive perception regarding interaction with their peers for learning purposes via Facebook. It is clear that students' interaction via Facebook is seen to be important for students, as it links students with each other outside of their class time. Students' interaction via Facebook can allow them to discuss course contents at any time they need. Via Facebook, a student can post questions, share information and discuss with peers when facing any difficulties during their study time or during preparation of their assignments. Asking questions in order to share information, conduct discussions or other investigated acts among peers can help students to better understand the course content and, as a result, enhance academic performance. Therefore, the findings of this study show the positive and significant relationship between students' interaction via Facebook and their academic performance. Similarly, previous studies found that academic use of Facebook is related to students' better academic performance (Junco, 2012).

In terms of specific types of students' interaction, this study shows that students in general expressed a positive perception towards all students' interaction types via Facebook. However, these findings also showed that students believe that their interaction via Facebook is to be varied according to the type of students' interaction. This difference may reflect the level of importance of each type of student interaction from his/her particular point of view. For example, students seem to be inclined to ask direct questions and provide direct answers. This appears to have less importance than other processes investigated in this study. Of course, students still believe that they can post questions and answers that are related to the course as it will help them in understanding the course content. However, students may think that direct questions and answers might provide specific and limited information compared to other methods investigated in this study. Similarly, Zhu (1996) found that students posted questions in order to seek opinions and initiate discussions rather than asking for specific answers.

On the contrary, students registered a higher perception regarding information-sharing via Facebook and its impact in helping them to understand the course content. The higher education students' perception of information-sharing can be attributed to students' experience of using Facebook to share a wide range of information in different forms. Therefore, students can share information in the form of text, photo, and video. Students also can share information through disclosing links of online information sources via Facebook. Additionally, students can share their course events, announcements and even learning materials on a Facebook page. Therefore, students tend to give this type of student interaction via Facebook more importance than the other investigated types. This finding is compatible with previous findings which showed that 70.2% used Facebook in order to exchange information (Wesseling, 2012).Student's "comments" on other students' posts was found to be important from the students' point of view. In the interaction type "comment", students can comments on other students' posts and give their opinions in a way that keeps it in line with the course content. Students believe that comments on learning posts can considerably help them to understand the course content. Interestingly, as students are willing to comment on other students' posts, they also welcome other students to comment on their posts. These findings indicate that students have trusted others sufficiently to be able to express their opinions and respect their opinion even when they disagree about their post. However, previous studies argued that accepting the points of view of other people, and also disagreement, reflects the level of respect and build-up of trust among learners (Kehrwald, 2010).

In terms of discussions on Facebook as being one of the types of students' interaction, students strongly believe that they can participate in course-related discussions via Facebook. Discussions on Facebook can be conducted based on a student's own initiative with or without the presence of the instructor. Nevertheless, students still believe their discussions on Facebook will be related to the course content. Moreover, students still agree that their discussions on Facebook can help them to better understand the course content. This perception indicates that students are willing to be given the chance to work more independently and to have more control over their online learning environment. This finding is in contradiction with other studies which found that only five per

cent (5%) of undergraduates and graduates agreed about the use of Facebook mainly for purposes of collaboration with classmates (Manasijević, D., Živković, D., Arsić, S., and Milošević, 2016)

Reflection on the various types of student learning practices is one of the types of student interaction that has been investigated via Facebook. Students strongly believe that they can share their reflections concerning the level of their understanding of the course content. This point indicates that students have the confidence to share their level of understanding of the course content with others. Similarly, students expect other students to also have their understanding level of the course content. Upon reflection, students tend to let others know their level of the course content understanding either positively or negatively. In this case, students are willing to openly share their learning experience and seem to be looking for support from others who can help them to continue their positive feeling about their study. Similarly with negative learning experience reflections, students need support from others to help them to overcome difficulties. Therefore, one of the student interaction types investigated is that of scaffolding. Interestingly, in the scaffolding interaction type, students expressed their willingness to provide scaffolding and support to other students in the form of information that can help them to better understand the course content.

Conclusively, this study proved that many types of student online interactions can be conducted on Facebook. Moreover, interactions via Facebook can significantly enhance students' academic performance. Additionally, it was found that students are willing to continue their learning tasks and work with peers through Facebook interaction so as to enhance their learning academic performance. Generally, students consider Facebook as an appropriate environment for course-related interaction with their peers. One of the significant advantages is that, on Facebook, students can initiate the discussion and control their learning environment. Moreover, this finding shows that students were open to interaction with other course participants and also were willing to share with them whatever can facilitate their learning and enhance course content understanding. This finding is supported by previous studies which found that a relatively high percentage (70%) of students are comfortable to interact with other students and support more opportunities for interaction with the instructor and other students (Spears and Miller, 2012; Sher, 2009).

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