Use of Facebook as a medium for asynchronous learning: perceptions among undergraduate industrial technology students at a public higher education institution in the Philippines

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ABSTRACT

The online social networking, Facebook has gained much popularity among the public primarily for interactions and for the exchange of information. However, the extent of the benefits of this social networking platform in facilitating students' learning needs to be assessed. A quantitative descriptive study was conducted to determine the perceptions of undergraduate industrial technology students in a public university of using this social networking platform as one of the tools for asynchronous learning. Seventy (70) randomly selected respondents were asked to answer some questions related to their perceptions of using Facebook in their learning activities. The respondents, as a whole group, had a "Favorable" perception towards using Facebook as a learning tool for asynchronous learning. There were no significant differences in the perception of using Facebook when the respondents were grouped according to sex, length of membership and the time spent on using the social network. Respondents who had low scholastic standing had a "Strongly Favorable" perception towards Facebook as a learning tool and their level of perception was significantly different from both groups with average and high scholastic status. There was a weak correlation between the level of perception towards the use of Facebook and the different independent variables and the degree of relationship was not significant. Nevertheless, Facebook can still be used as a platform to create awareness among students about their lessons in school and can be used as one of the avenues to help students who are weak academically through online tutorials and correspondence.

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INTRODUCTION

Social network allows individuals to construct a personal profile within a bounded system and connect with common users within that system (Boyd and Ellison 2008). Over the years, the use of social networks has considerably expanded, and these include websites that are related to work (e.g., LinkedIn.com) or those that are used solely for recreation (e.g., MySpace). These social media sites do have a common purpose, and that is to connect people digitally.

Social network sites (SNSs), including MySpace and Facebook are popular among young people (Silius et al. 2010) because these can be used in education to enhance student learning and encourage them to network and share resources with one another (Alexander 2006; Boulos and Wheeler 2007; Chen et al. 2009). In these social networking sites, a user has direct interaction with another participant; thus, creating different kinds of groups that cater to different needs.

Facebook, one of the popular social network sites, has become a powerful communication medium. In fact, Facebook is described as "one of the new titans of the Internet" as it facilitates interconnectivity among users through personal relationships and recommendations with the inclusion of features including *like* and *comment* (Schwartz 2011). On a global scale, slightly more males than females use Facebook and the largest Facebook users are those in the age group between 26-34 years of age followed by 18-25 years old and then 13-17 years old (Hilton and Plummer 2012).

The use of Facebook also allows the possibility of creating closed groups that allow asynchronous and synchronous interactions among its members (Meishar-Tal et al. 2012). This facilitates sharing of information, such as links to websites, text documents, pictures, and many other features. The Facebook group contains at least two of the three components of the learning management systems: the digital content component and the interaction component. Hence, it raises the possibility of utilizing Facebook as an alternative learning management system in both synchronous and asynchronous teaching platforms.

There are few research studies that demonstrate the educational potential of Facebook in higher education (Boyd and Ellison 2008; Junco 2012). Selwyn (2009) stressed that the conversational, collaborative and communal dimensions of Facebook are what its users' value. Moreover, much

of the learning that takes place on Facebook is similar to the type of learning that happens outside of the classroom. It is evident that Facebook provides an environment for informal learning that encompasses a range of essential skills including teamwork and organizational competencies, which are relevant for future employment (Madge et al. 2009). Likewise, Vivian (2011) recommended further research into the relationship between the use of social network services and informal learning so that teachers can be informed about how to effectively incorporate this technology into the teaching and learning process. The perceived benefits of Facebook on the facilitation of informal learning among students provided the impetus for this study as there is scarcity of available data along this line of research in the Philippines. Using a small cohort size of undergraduate students of Industrial Technology in a public higher education institution, the students' perception towards using Facebook in asynchronous learning was assessed and the relationships of the different variables such as sex, scholastic status, length of membership to Facebook and the time spent of using Facebook to these perceptions were also determined.

METHODS

Respondents

The study was conducted at the Iloilo Science and Technology University **(**Main Campus), a public institution of higher education located in Central Philippines. The subjects were the students enrolled in the Bachelor of Industrial Technology (B.I.T.) during the First Semester 2017-2018. A total of 70 respondents were included in the study determined by random sampling.

Data-Gathering Procedures

The instrument used to gather data was a modified version of the validated questionnaires of Hilton and Plummer (2012) and of Barczyk and Duncan (2013) on Perception on the use of Facebook for asynchronous learning. These items were modified from the validated instrument on Classroom Community Scale that measures students' responses in relation to their attitudes towards the use of the internet for distance education (Rovai 2002). The standardized instrument had a Cronbach's coefficient of 0.93 and the equal-length split-half coefficient was 0.91, indicating excellent reliability.

The questionnaire was composed of two parts: Part 1 was about the respondent's personal details such as sex, grade point average in the preceding semester, length of membership to Facebook and the duration spent on browsing Facebook per day, and Part 2 which consisted of 10 questions, pertaining the use of Facebook in the various areas of their learning activities

which they rated based on a scale of 0-100. The approval to conduct the study was granted by the head of the institution and the respondents who took part in the study gave consent to have their responses used anonymously in the study.

Data Analyses

The respondents were categorized into the different variables including sex (male or female), academic status (High: GPA of 1.75-1.0; Average: GPA of 2.5–1.76; and Low: GPA of <2.5), length of membership to Facebook (less than 1 year, 1-3 years and more than 3 years) and the amount of time spent browsing Facebook per day (less than 1 hr, 1-3 hours, and more than 3 hours). The students' perception on the utilization of Facebook as one of the tools to assist them in learning was expressed in percentage based from the mean values that the student has rated in the 10 questions. The mean values were classified either as: strongly unfavorable (0-20), unfavorable (21-40), neutral (41-60), favorable (61-80) and strongly favorable (81-100).

Descriptive profile of the respondents and the degree of their perception on the use of Facebook for asynchronous learning were determined by obtaining the means, standard error of the mean, frequency counts and percentage. Significant differences among variables tested using two tailed t-test (sex) and Analysis of Variance (ANOVA) (for scholastic status, length of membership to Facebook and time spent for using Facebook) were determined. Correlation analysis was used to establish the relationship between the different variables of the study and the degree of perception on the use of Facebook for learning activities. Statistical tests were all done at 0.05 level of significance.

RESULTS

In terms of personal details (Table 1) majority of the respondents were males (88.6%), had average scholastic status (GPA of 2.5–1.76; 78.6%), been a member of Facebook for more than 3 years (62.9%) and spent browsing or using Facebook on the average less than 1 hr per day (50.0%). Although majority (54.3%) (Table 2) of the respondents had a "Strongly Favorable" perception towards the use of Facebook in asynchronous learning, the average perception of the group was 78.9%$\pm$ 6.1, which was "Favorable".

When grouped according to sex, majority of the males (75.0%) and females (51.6%) had a "Strongly Favorable" perception towards the use of Facebook in asynchronous learning (Table 3A) and no significant differences (P>0.05) in the levels of their perceptions were noted (Figure 1A). In terms of scholastic status, all in the low academic status and majority (51.0%) of those

in the average scholastic status had a "Strongly Favorable" perception on the use of Facebook for asynchronous learning (Table 3B). Further analysis revealed that the perception on the use of Facebook in asynchronous learning among students who were low in their scholastic status was significantly different ($P<0.05$) from the groups who had either Average or High scholastic status (Figure 1B).

Table 1. Profile of the respondents in the study (n=70).

Variable	Frequency	Percentage (%)
1. Sex		
Male	62	88.6
Female	8	11.4
2. Scholastic status		
Low	8	11.4
Average	55	78.6
High	7	10
3. Length of Membership		
Less than 1 year	8	11.4
1 - 3 years	18	25.7
More than 3 years	44	62.9
4. Time spent on Facebook		
Less than 1 hr per day	35	50
1 - 3 hrs per days	24	34.3
More than 3 hrs per day	11	15.3

Table 2. Perceptions of the students on the use of Facebook in asynchronous learning (n=70).

Perception	f	%
Strongly Unfavorable	2	2.9
Unfavorable	1	1.4
Neutral	7	10.0
Favorable	22	31.4
Strongly Favorable	38	54.3
TOTAL	70	100

Table 3. Distribution of the students' perceptions towards the use of Facebook in asynchronous learning activities according to (A) sex, (B) scholastic status, (C) length of membership to Facebook and (D) amount of time spent on Facebook per day (n=70).

A. Sex	Strongly Unfavorable (0 - 20)	Unfavorable (21 - 40)	Neutral (41 - 60)	Favorable (61 - 80)	Strongly Favorable (81 - 100)	Total (n/%)
Female (f/%)	0 (0)	0 (0)	2 (25.0)	0 (0)	6 (75.0)	8
Male (f/%)	2 (3.2)	1 (1.6)	5 (8.1)	22 (35.5)	32 (51.6)	62
B. Scholastic Standing	**Strongly Unfavorable (0 - 20)**	**Unfavorable (21 - 40)**	**Neutral (41 - 60)**	**Favorable (61 - 80)**	**Strongly Favorable (81 - 100)**	**Total (n/%)**
Low Scholastic Achievement (f/%)	0	0	0	0	8 (100)	8
Average Scholastic Achievement (f/%)	1 (1.8)	1 (1.8)	6 (10.9)	19 (34.5)	28 (51.0)	55
High Scholastic Achievement (f/%)	0	0	1 (14.2)	3 (42.9)	3 (42.9)	7
C. Length of Membership to Facebook	**Strongly Unfavorable (0 - 20)**	**Unfavorable (21 - 40)**	**Neutral (41 - 60)**	**Favorable (61 - 80)**	**Strongly Favorable (81 - 100)**	**Total (n/%)**
Less than a year (f/%)	0 (0)	0 (0)	2 (25.0)	3 (37.5)	3 (37.5)	8 (100)
1 to 3 years (f/%)	1 (5.6)	1 (5.6)	0 (0)	6 (33.3)	10 (55.5)	18 (100)
More than 3 years (f/%)	0 (0)	0 (0)	5 (11.4)	13 (29.5)	26 (59.1)	44 (100)
D. Duration of Facebook Use per day	**Strongly Unfavorable (0 - 20)**	**Unfavorable (21 - 40)**	**Neutral (41 - 60)**	**Favorable (61 - 80)**	**Strongly Favorable (81 - 100)**	**Total (n/%)**
Less than one hour/day (f/%)	0 (0)	1 (2.9)	3 (8.6)	15 (42.8)	16 (45.7)	35 (100)
1 to 3 hours/day (f/%)	2 (8.3)	0 (0)	3 (12.5)	3 (12.5)	16 (66.7)	24 (100)
More than 3 hours/day (f/%)	0 (0)	0 (0)	1 (9.1)	4 (36.4)	6 (54.5)	11 (100)

When the respondents were grouped according to the length of membership to Facebook, majority (55.5% and 59.1%) of those who have been a member for at least 1 year had a "Strongly Favorable" perception towards the use of Facebook in asynchronous learning, while those who have been a member of Facebook for less than year perceived the use of this social media platform as either "Favorable" to "Strongly Favorable" (Table 3C). However, no significant differences ($P>0.05$) in the levels of perception were observed among the groups (Figure 1C). In terms of the daily use of Facebook, majority of those who spend at least 1 hour in Facebook had a "Strongly Favorable" perception on the use of the social media platform in asynchronous learning

(Table 1D), and the levels of perception among the groups were not significantly different (P>0.05; Figure 1D).

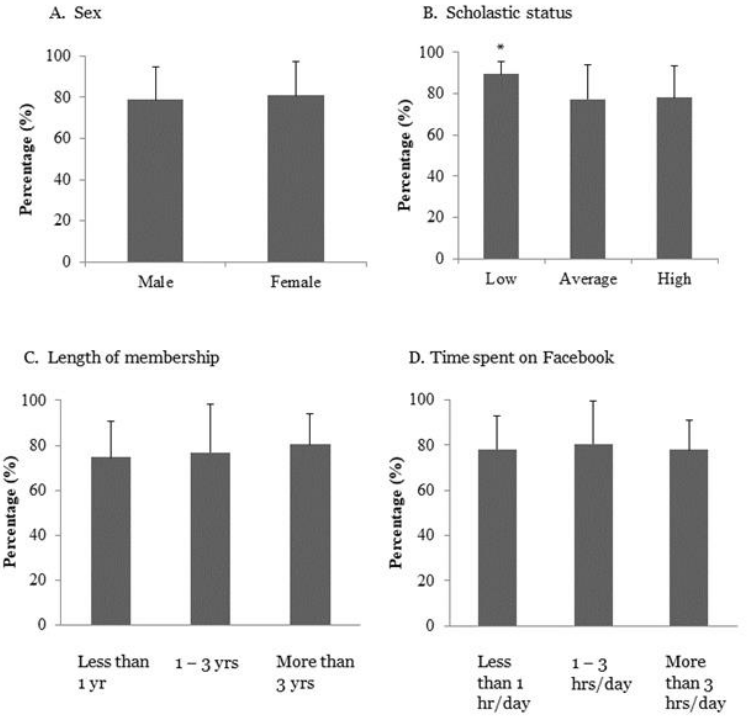

Figure 1. Perception (expressed as percentage) of the students towards the use of Facebook in their learning activities. A total of 70 respondents were involved in this study. An asterisk above column bars indicates significantly different (P<0.05).

Correlation analysis revealed a weak but no significant relationship (P>0.05) between the different variables and the levels of perception towards using Facebook in the learning activities of the respondents (Table 4).

Table 4. Correlation of the different variables with perception towards using Facebook in the students' learning activities (n=70).

Variable	Coefficient of Correlation (r)	Significance
Sex	0.042	Not significant
Scholastic status	0.174	Not significant
Years of membership	0.13	Not significant
Time spent on FB	0.023	Not significant

DISCUSSION

The present study clearly demonstrated that Industrial Technology is still a male-dominated degree program, with more males taking this course than females. Not only this scenario is prevalent in the Philippines but in other countries as well, where Industrial Technology has one of the lowest numbers of female students, faculty members and even those involved in the executive department (Kulatunga et al. 1999; Kassi and Dugger 2000; Weber and Custer 2005). In order to attract more women to enrol in this degree, there should be intensive campaigns in re-directing the public perception that this course could also be suitable for women and there are job prospects along this field that women can enter. Schools that offer degree programs in industrial technology are encouraged to redesign the curriculum and break sex-role stereotypes in the choices of degrees by providing more opportunities for women participation in traditionally male-dominated degree programs. For example, Weber and Custer (2005) suggested that more women can be recruited to take up technology courses if curriculum developers in technology education are able to design and implement teaching and learning methods that can comprehend "women's ways of knowing". Moreover, Shroyer et al. (1995) stressed that the inclusion of environmental and social technologies into industrial technology curriculum could also be appealing to female students.

It is evident that students had a generally favorable perception towards using Facebook as one of the means to help them in their learning particularly when they are not inside the classroom. The favorable perception towards Facebook is manifested on the widespread use of this social media platform in the daily lives of the students. For example, Cain (2008) estimated that 80-90% of the college students in the United States use Facebook. Among secondary school students in Ontario, Canada, more than 70% agreed that Facebook is a useful a tool in learning (Fewkes and McCabe 2012). A survey done from 126 universities in the US and one Canadian university revealed that 90% of the students used social networking services, and 97% of them used Facebook (Junco 2012). Similarly, about 95% of the British undergraduate students regularly used social networking services (Madge et al. 2009). Aside from its widespread popularity and use, Facebook is also an important method of communication, particularly for students in their late teens to twenties (Hilton and Plummer 2012). Learning institutions can take advantage of this positive perception of students towards Facebook so that teachers can prepare teaching and learning materials that can be uploaded to a Facebook page, which the students can access when they are not in school. Facebook could help convey the teacher's messages (Madge et al. 2009; Roblyer et al. 2010) and thus can reinforce learning among students.

Four independent variables were used to find out if these had correlation with the level of perception of the students regarding the use of Facebook as a platform for asynchronous learning. No significant correlations were found, yet, students had a favorable perception towards Facebook as a tool in asynchronous learning. This indicates that there are other factors that need to be explored, which might have an effect on how students perceive the use of Facebook in their learning of a particular subject. Kabilan et al. (2010) in their studies involving college students in Malaysia obtained similar results on the use of Facebook in the learning of English. In general, the students favorable views toward Facebook as means of facilitating the leaning of a particular subject might be explained by the fact that online platforms, to which Facebook belongs, offer genuine interactions among students in an informal setting. If students experience positive interactions among themselves, they develop increased self-confidence and a deeper sense of connectedness with one another, which are important factors in a learning environment (Wang and Chen 2007; Kabilan et al. 2010). Moreover, Lave and Wenger (1991) opined that students will have a positive view towards learning if it is viewed as a form of social participation brought about by authentic and relevant interactions. Teaching-learning situations including asynchronous learning that are carried out in social online communities, such as Facebook should therefore allow and facilitate the necessary interactions among students that result in the enhancement of learning (Wenger et al. 2002). As such in this study, the students viewed the use of Facebook as a positive experience for them and they could use that favorable experience when they study a new subject. This positive reinforcement will help them understand and learn better the various concepts and lessons that are given to them.

Taken together, the results of the study showed that the undergraduate students of Industrial Technology had a positive and favorable perception towards the use of Faceboook as a means of facilitating learning outside the classroom. This social networking platform can be used by teachers and perhaps included in the course syllabi as an additional way of connecting with students. It should provide encouragement to educational institutions in considering the use of Facebook to move forward in their efforts to recruit and interact with students in order for them to attain their institutional objectives. Facebook is not a "silver bullet" for educational or any other kind of organizations' efforts to recruit and communicate with students, rather it should be added to the toolbox of those reaching out to young adults. Although there is so much to learn about social media in general, and Facebook in particular, it is evident that this is one of the tools in asynchronous learning that cannot be overlooked in terms of its potential. Future research should also focus on methods that can assess the ability of Facebook towards the development of competencies among students when online platforms are integrated in the subject. Moreover, a comparison between traditional learning management approaches and the use of Facebook in the teaching-

learning process should be done in order to determine the most efficient educational platform for student engagement and learning.

Overall, the authors believe that educational institutions should explore Facebook as a means of not only to communicate with students but also to facilitate self-directed learning. There is still much to learn on how Facebook or any other social media can aid students' learning, nevertheless, it offers potential benefits in the teaching-learning process that should not be overlooked.

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