# Facebook as a Learning Tool in Formal Learning Process

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**Abstract.** Social networks and the huge number of users in worldwide offer great social and business potential. In this research, we aim to find the required features in social networks (Facebook) to enhance it as learning tool. Firstly, we observed the exist Facebook features that can be used in the learning process in comparison with the LMS (Fronter). Afterwards, we propose some required feature in Facebook based on the experiment that we ran on students. Those students had been studying Introduction to Information Security course in the second year of bachelor degree in our university.

**Keywords:** Facebook · eLearning · Learning tools · Formal learning process

## 1 Introduction

Learning can be seen as a constructive process where learners build understanding through acquiring knowledge on a scaffolding of meaning [1]. The learning process can occur in three main modes: formal, non-formal and informal learning. Formal learning is an organized learning process through institutions like universities. This type of learning is a systematic process follows the institute regulations and rules, it can be online or offline. The students have to pass an evaluation process to be reward a certification. The learning and the knowledge is restricted to specific subjects through the learning process. Non-formal learning is a learning process organized by a social group. The learning mode is planned and is usually the result of voluntary participation. Informal learning is an unorganized learning process directed and controlled by the learner [2, 3]. In our research, we are focusing on the formal learning mode.

Christopher Whitty and Rachid Anane propose a framework to enhance student engagement with the community through non-formal learning [4]. They used social networks to encourage students to share types of knowledge within the learning process. They implement the framework in a social network to facilitate the social interaction and collaboration between the learners, which gives the possibility for the learner who control his learning process to explore topics outside restricted Learning Management System (LMS) structures.

Other researchers have published work in progress papers about merging social network with LMS's. In the paper published by Caminero et al. "Work in progress: Extending an LMS with social capabilities: Integrating Moodle into Facebook." [5], the

authors proposed the integration of the most used social network (Facebook) with open source learning management system (Moodle) [6, 7]. They are targeting courses, which had distanced learners. Their aim was to increase the social communication between the students to improve the learning process. The authors created an application to give the students the ability to access Moodle through Facebook, also they developed a web service in Moodle accessed by Facebook and used for their ease of implementations. As this is a work in progress paper data is still being collected.

Dabbagh and Kitsantas published the paper "Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning." [8]. In this study, they provide a pedagogical framework for using social media to create personal learning environments (PLE) that support students through their regulated learning. That framework contains three levels. The second level is a social interaction and collaboration, where they ask the instructor to encourage students to participate and collaborate in activities through the learning process. They are aiming to encourage the students to self-regulated learning process targeting to help students find a new and better strategies for formal learning.

The above research gives indicators of the potential for using Facebook in formal learning to improve the learning process and communication/connection between students, teacher and the subject materials. In our research, we are seeking to check which features are needed in Facebook to make it usable as a learning tool with or without LMS in the formal learning process.

The rest of the paper is organized as follows. Section 2 describes our with Facebook. Section 3 gives an analysis of the results. Lastly, Sect. 4 concludes the paper.

## 2 Experiment Setup

This experiment was directed to bachelor degree students who are studying an information security course at our university. They were using both Facebook and an LMS (Fronter) in the course. The professor of the course Nils K. Svendsen created a Facebook group for the course. Firstly, we observed the students interactions and participations with the Facebook group and the LMS during the 10 week course. Afterwards, we published a questionnaire for the students and we collected the data.

## 3 Result and Analysis

We found that the most of students joined the Facebook group in the same moment they saw the name of the group in the first lecture. In total 87 students or more than 70 % of the total student body interact with Facebook course groups through the duration of the course (Fig. 1).

The questionnaire contained six questions concerning the students' interaction with the LMS (Fronter) and with the Facebook group during the course. Figures 2 and 3 show students' appreciation and use of Facebook compared to Fronter using a Likert scale of 1 to 5 with 5 for strongly agree and 1 for strongly disagreeing with the statement in the questionnaire.
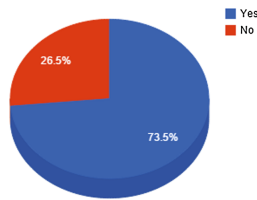
**Fig. 1.** Students' interaction in the Facebook group of Information security course
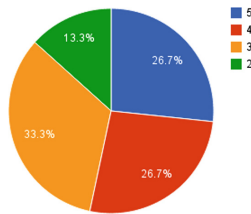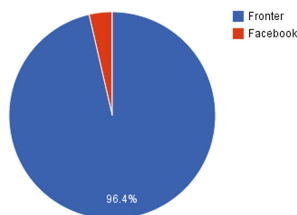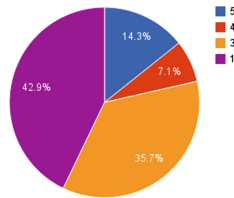


**Fig. 2.** Facebook easier than Fronter
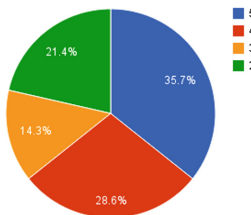


**Fig. 3.** Facebook better for notification than Fronter.

Figure 4 shows which platform the student used to submit work in the course. Most of the students used LMS (Fronter) to submit. Figure 5 shows that the most of the students did not find it ease submitting tasks in Facebook. The fifth question was about the ease to return and review topics/files through the course using Facebook vs Fronter? As seen in Fig. 6, more than 70 % of the students used Fronter to return and review the course files.
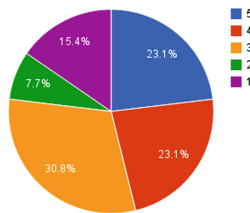


**Fig. 4.** Which platform to submit.

**Fig. 5.** Facebook easy to submit.
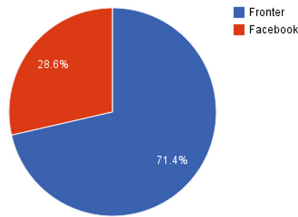


**Fig. 6.** Return/Review material



**Fig. 7.** Facebook vs Fronter easy of use

Question six is: Do you use Facebook more than Fronter forum during the course? Figure 7 shows that it was easier for more than 75 present of the students to use Facebook to discuss and subject matter of the course than the Fronter forum.

Table 1 below is a preliminary list comparing Facebook and Fronter features that can be used to enhance the learning Interaction communication process.

## 4    Conclusion

This action research has studied the use of Facebook as learning tools and compared it to a traditional learning management system (Fronter). Based on this case study, we found that most of student were more interested to use Facebook to get notifications about the course. Also, they were more often used and preferred Facebook as a forum to discuss the tasks and exercises in the course.

**Table 1.** Comparison between Facebook and Fronter LMS capabilities

| Action | LMS (Fronter) | Facebook |
|---|---|---|
| Transfer files to and from teacher | Yes | Yes |
| Organizing transferred files/file repository/file management | Yes | No |
| Students receiving tasks from the teacher | Yes | Yes |
| Giving online exams for students controlled by some period | Yes | No |
| Forum: capability of having a discussion about appropriate topic | Yes | Yes |
| Capability of evaluating the student's participation in the forum | Yes | Yes |
| Evaluate students' exams | Yes | No |
| Evaluating tasks/homeworks | Yes | Yes |
| Chat control | Yes | Yes |
| Check users online | Yes | Yes |
| Check user participation percentage | Yes | No |

In general, we found that Facebook was easier and faster for the students to deal with the course through the learning process, but from analyzing the answer of questions 3, 4 and 5 we found that was difficult for the students to submit tasks and manage course files through the Facebook. In this case study the student found Fronter the easiest method to do that.

The previous results indicate Facebook requires a better and easier file transfer system if is to be used as learning management tool. This feature will help students to deal with clear file system where they can submit their tasks and submit work to the instructor easier.

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