

## The educational use of Facebook as a social networking site in Animal Physiology classes

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### Abstract

This study aims at performing a sample application of the educational use of Facebook as a social networking site in Animal Physiology classes, and to determine students' views on the application. The research sample was composed of 29 third year undergraduate students attending the Biology Education Department of Hacettepe University. The Applied part of the research was undertaken during the Spring semester of the 2014-2015 academic year in Animal Physiology classes. A Facebook group called "BIO 314 Animal Physiology" was created for sharing purposes in relation to the course content. The lecturer, as well as the students, shared the group for fourteen weeks on several occasions, and made comments on instances of sharing. In addition, the lecturer assigned the students tasks for the activities and the students were expected to fulfill the tasks. Students' views were obtained through a survey of open-ended questions prepared as the tool of data collection, then the views were put to qualitative analysis. The results showed that the use of Facebook for educational purposes made factors such as sharing, helping each other, increasing communication, reaching the lecturer and visualising the content, easier for students, but there were also students who held negative views on the issue.

Keywords: Facebook, Educational Use of Facebook, biology teacher candidates.

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## 1. Introduction

The changes that occurred with the development of information and communication technology have created a development including the people's social life and communication. That continuous development directly affects the use of technology (Coklar, 2010). As is commonly known, the number of internet users, and the length of time they spend on the internet, has rapidly increased both in our country and all over the world. In parallel to the increased use of the internet, social networking sites that enable users to create their own content are also becoming widespread (Amichai-Hamburger & Vinitzky, 2010).

An examination of the literature on social networking sites shows that there are various descriptions concerning the issue. Some examples include the following: social interaction network (Cetin, 2009); unofficial, independent learning environment (Stevenson & Liu, 2010); an environment of advertisement and public relations (Onat & Alikilic, 2008); an online community of people (Buss & Strauss, 2009); an environment of marketing and the reformist phenomenon of the internet (Akar, 2010).

Social networking sites are sites that enable people to create their profile, either fully or partially open to the public in a recorded system, to share a link, to display a list of other users and see the list of relationships between people in the system, and to enable online communities to share their likes, activities, messages, e-mails, videos of discussion groups, conversations and files. Social networking sites bring together people who have things in common, enabling them to communicate and exchange information in their groups (Boyd & Ellison, 2007).

The properties of social networking sites can be listed as in the following:

- Social networking sites are participatory; each internet user is a source of news and information.
- Social networking sites are transparent, and what information is produced and shared, and by whom, can be seen.
- Social networking sites are accessible, and everybody with an internet connection can easily follow what happens on social networking sites.
- Social networking sites are also a channel of communication; users can communicate with each other.

Thanks to social networking sites, which have risen rapidly in recent years, people can express themselves, escape stress by having fun, and can come together in accordance with shared purposes and opinions. One such site, which has risen rapidly and which has an extensive number of members, is facebook.com (Kobak & Bicer, 2008). The software was first developed in 2004 by Mark Zuckerberg (a student of computer sciences at Harvard University), for use between students on the campus, is today one of the most well-known and most commonly used networking sites in the world (Lim, 2010). Facebook is an online social networking software which enables its users to communicate and interact in networks they create as communities, which are open to groups, or to everyone, according to the levels of permission, and to share information with other users (Gonzales & Vodicka, 2010).

Facebook is derived from "paper facebooks" (Wikipedia, 2012). The term is the name of a form that students, teachers and other staff in universities and schools in the United States complete. Zuckerberg finished encoding Facebook and opened it to Harvard students only in 2004, but its fame spread into other universities, high schools and companies in Boston within a very short time. Due to the great interest in Facebook, Zuckerberg decided to extend the application beyond Harvard. He announced in 2006 that everybody with a valid e-mail address could register on Facebook, which had an age limitation of 13 and above. Facebook, which is free for users, obtains its income from banner and sponsor links and from advertisements (Demirer, 2010).

The fact that the users of social networking sites are mostly young people and students, and that these sites offer rich content makes us think that they can also be used for educational purposes. The fact that students of any age use social networking sites, and that those sites occupy an important place in students' lives has aroused the interest of some educators (Selwyn, 2007).

McLoughlin and Lee (2007) list the educational benefits that social networking sites can offer as:

- Social support and connectivity,
- Cooperative information, discovery and sharing,
- Content formation,
- Information and content modification.

Muijs et al. (2010), on the other hand, describe the educational benefits of social networking sites as:

- Developing schools,
- Increasing opportunities (cooperating with other schools),
- Sharing sources.

Social networking sites facilitate students' interaction with the teacher and the content in educational environments due to the properties those sites have. They also support students' use and development of research, inquiry and problem-solving skills.

For instance, while Facebook ensures student-student interaction in the form of web-based communication, it also enables teachers to communicate with their students in relation to assignments, activities and sharing resources. Facebook also enables students to cooperate with other students for such purposes as asking questions and cooperating in assignments and group projects.

There are several reasons why Facebook is preferred so much. These reasons include the following: It provides users with a rich variety of multimedia; it facilitates connecting to other sites and sharing; it offers choices such as groups, activities and applications; it is possible to communicate to chat online or offline with other communities; it has a platform supporting mobile devices so that games work, there are visuals, and the Turkish language is also available (Karademir & Alper, 2011). What makes Facebook different from other social networking sites is its application attachment. It is said that there are more than 7,000 applications on Facebook that are created by the site itself and by users. The applications are small pieces of software, most of which were prepared by software developers apart from Facebook and which have certain functions. This property of Facebook causes users to spend more time on the site (Kobak & Bicer, 2008).

Using Facebook in higher education, which is popular among university students because it is used by many people and it is free, becomes a need to be met in certain cases. Since Facebook is generally used by young people and university students, many researchers began to teach their lessons on Facebook in order to reduce the effects on students of time wasted on Facebook. The reason for this is that the software supports cooperative learning with an increase in student-content, student-student and student-teacher interaction (Kalafat & Goktas, 2011). Due to such networks, interpersonal interactions take on a new dimension (Yu et al., 2012).

Students' views obtained in research concerning the use of Facebook in education demonstrate that Facebook offers advantages in students' adaptation to the university environment; improves their communication with other students (Madge, Meek, Wellens & Hooley, 2009); supports students to present their own views; and to use and improve their inquiry and problem solving skills. It also assures students' active participation (Gulbahar, Kalelioglu & Madran, 2010) in that people around also use this network and they can ask questions, and using the network does not require much prior knowledge; it enables the revision process due to the fact that it is open to peer teaching; and it

supports students through educational games and multimedia in that what is shared is not deleted (Kalafat & Goktas, 2011). In addition, perhaps the most important benefit of using Facebook in educational settings, and its potential benefit, is its effect on raising students' motivation (Lam, 2012; Llorens & Capdeferro, 2011; Coklar, 2012). Moreover, it also results in an increase in students' interest in the course (Coklar, 2012; Malita, 2011).

Using social networking sites in teaching and learning activities is considered important. An examination of the research concerning the educational use of social networking sites in Turkey and across the world, shows that most research centres around Facebook. Some of the research can be listed as the following: Ajjan and Harsthone (2008), for instance, point out that social networking sites improve learning, assure school-student and student-student communication and interaction, reduce students' anxiety about courses and raise their satisfaction, improve their reading and writing skills, and that those sites are vehicles that are easy to use and easy to integrate into classes. In the same way, Munoz and Towner (2009) state that pictures, videos and messages suitable to course subjects, assignments and applications can be used for educational purposes on Facebook. In addition, Heather Rogers at Haverback Towson University used a Facebook group created under the name of "the Girls of 324 Reading Methods Group" to meet teacher candidates in reading classes (Gulbahar, Kalelioglu & Madran, 2010). The group functioned as a platform where group assignments were discussed, questions were asked, information was sent, and opinions supported.

Some studies, though small in number, are available in Turkey regarding the educational use of social networking sites. However, those studies are, in general, theoretical, and in the form of reviews. Of them, Mazman and Usluer (2009) developed a recommended model for the educational use of social networking sites. The researchers used social factors, ease of use, perceived benefits and innovativeness as the fundamental structure; and image, subjective norms, facilitating factors and community identity as the determiners of the structures. A study conducted by Cavdar, Yigit and Alev (2010) aimed to raise teacher candidates' awareness of social networking sites. In the research, which was performed with 108 teacher candidates, the teacher candidates were directed to various social networking sites during the classes, and their learning outcomes were asked in an open-ended question at the end of the process. Keles and Demirel (2011) performed a sample application in relation to the educational use of Facebook with undergraduate students, and they analysed the application process in terms of students' interactions with each other, with the lecturer, and with the course content.

A close examination of the relevant literature makes it clear that there is an insufficient number of studies on the use of Facebook in biology education. Therefore, this study is thought to serve as an example to practitioners and researchers in terms of a course on Animal Physiology.

This study aims to perform a sample application for the educational use of Facebook as a social networking site in Animal Physiology classes, and to obtain students' views on the issue.

## **2. Method**

This study employs a phenomenology research design in the framework of a qualitative research approach. The data obtained were analysed through a content analysis technique. A phenomenology design focuses on phenomena that we are aware of, but we do not have in-depth and detailed knowledge. Phenomenology forms the basis for studies aiming to research phenomena that are not completely unfamiliar to us, and which we cannot fully make sense of (Yildirim & Simsek, 2008).

### 2.1. Participants

The research sample was composed of 29 third year students attending the Biology Education Department of Hacettepe University.

### 2.2. Data collection tools

The application part of the research was performed in the Spring semester of the 2014-2015 academic year in classes in Animal Physiology. A Facebook group called “BIO 314 Animal Physiology” was created for sharing within the scope of the course. The course lecturer was the administrator in the Facebook group; it was a closed group. The lecturer, as well as the students, shared the group for fourteen weeks on several occasions, and made comments on instances of sharing

Students’ views were obtained by using the open-ended question “**what are your views of the effectiveness of the use of a Facebook group in classes?**” as the tool of data collection. The data obtained were then put to content analysis (one of qualitative analysis techniques), then encoded. The encoded data were assessed in different conceptual categories and the results were interpreted.

### 3. Findings

Students’ views are tabulated in different conceptual categories. The results of the analysis, as well as the interpretations, are presented below.

Table1. Students’ Views on the Effectiveness of the Use of Facebook in Physiology Classes

| What are your views of the effectiveness of the use of a Facebook group in classes? | Frequencies | Percentages |
|-------------------------------------------------------------------------------------|-------------|-------------|
| Contributing to learning.                                                           | 25          | 37.91       |
| Its use in classes was very effective and instructive.                              | 6           | 9.09        |
| We have learnt new things, and it was nice.                                         | 4           | 6.06        |
| It is useful in understanding the information and commenting upon it.               | 4           | 6.06        |
| It enables us to keep up to date when current events are shared.                    | 2           | 3.03        |
| I have had the opportunity to follow current scientific events closely.             | 2           | 3.03        |
| My tendency to research developed more.                                             | 2           | 3.03        |
| I was informed of diseases I had never heard of before.                             | 1           | 1.52        |
| I learnt a term every day and became informed of systems.                           | 1           | 1.52        |
| It assured permanence in learning.                                                  | 1           | 1.52        |
| It helped reinforcement in some topics.                                             | 1           | 1.52        |
| It was quite suitable for use in classes.                                           | 1           | 1.52        |
| Positive effects.                                                                   | 11          | 16.7        |
| Definitely, there are not disadvantages.                                            | 2           | 3.03        |
| I believe it is quite effective.                                                    | 3           | 4.55        |
| Considering today’s conditions, the application was nice.                           | 1           | 1.52        |
| Our perspective rose thanks to the activity.                                        | 1           | 1.52        |
| Its use in classes was quite effective in terms of general knowledge.               | 1           | 1.52        |
| It assured the continuity of the class on Facebook.                                 | 1           | 1.52        |
| I shared what I had learnt with people around me.                                   | 1           | 1,52        |

|                                                                                         |    |        |
|-----------------------------------------------------------------------------------------|----|--------|
| This activity has a lot of advantages for anyone having an account.                     | 1  | 1.52   |
| Negative effects.                                                                       | 18 | 27.33  |
| It is impossible to follow the sharing continuously.                                    | 4  | 6.06   |
| While the amount of sharing increases, the quality decreases when there is competition. | 1  | 1.52   |
| It is more efficient for my friends using Facebook regularly.                           | 1  | 1.52   |
| Sharing long written texts makes it less interesting.                                   | 1  | 1.52   |
| We should have mentioned fewer and more specific topics.                                | 1  | 1.52   |
| It can be created in relation to the lesson process.                                    | 1  | 1.52   |
| Theoretical knowledge was not interesting to me.                                        | 1  | 1.52   |
| Not being able to logon to Facebook when I ran out of an internet package.              | 1  | 1.52   |
| There was too much sharing.                                                             | 1  | 1.52   |
| It turned into a problem when everybody started to share something.                     | 1  | 1.52   |
| There was not much discussion in relation to information.                               | 1  | 1.52   |
| Waste of time.                                                                          | 1  | 1.52   |
| It causes distraction.                                                                  | 1  | 1.52   |
| Some of our friends had problems in accessing the internet.                             | 2  | 3.03   |
| Making visual contributions to the course.                                              | 2  | 3.03   |
| I liked visual sharing.                                                                 | 2  | 3.03   |
| Assuring access to diverse information and sources.                                     | 10 | 15.19  |
| We discussed our opinions with friends in the light of newly learnt information.        | 1  | 1.52   |
| I think it increases the effectiveness of information.                                  | 1  | 1.52   |
| I learnt about new sites and new information thanks to sharing.                         | 3  | 4.55   |
| There was an exchange of ideas.                                                         | 1  | 1.52   |
| I corrected wrong knowledge through discussions.                                        | 1  | 1.52   |
| It can enable us to learn outside classes.                                              | 1  | 1.52   |
| It made us look at scientific journals.                                                 | 1  | 1.52   |
| Everybody researched the current sharing and stated their thoughts.                     | 1  | 1.52   |
| No answers.                                                                             | 3  | 4.55   |
| No answers were given.                                                                  | 3  | 4.55   |
| Total                                                                                   | 66 | 100.00 |

**1. Students' views on the effectiveness of using the Facebook group in classes:** it became possible to make evaluations in 6 different categories in terms of functions and concepts, by considering biology teacher candidates' views on the effectiveness of using Facebook in classes as a whole.

- **Contributing to learning:** 37.91% of the valid codes produced by biology teacher candidates were analysed in this category. A total of 9.09% of the teacher candidates stated their opinions, saying "Its use in classes was very effective and instructive."
- **Positive effects:** 16.7% of the valid codes produced by biology teacher candidates were analysed in this category. Accordingly, 4.55% of the teacher candidates stated their opinion in relation to the use of the Facebook group in classes with the sentence "I believe it is quite effective."

- **Negative effects:** 27.33 % of the valid codes produced by biology teacher candidates were analysed in this category. A total of 6.06% of the teacher candidates explained their views with the sentence “it is impossible to follow the sharing continuously.”
- **Making visual contributions to the course:** 3.03 % of the valid codes produced by biology teacher candidates were analysed in this category. Of the codes, the ones produced by two biology teacher candidates were analysed in this category, and their statement was “I liked visual sharing”.
- **Assuring access to diverse information and sources:** 15.91 % of the valid codes produced by biology teacher candidates were analysed in this category. A total of 4.55% of the teacher candidates stated their opinion in the sentence “I learnt about new sites and new information thanks to sharing”.
- **No answers:** 4.55 % of the valid codes produced by biology teacher candidates were analysed in this category.

#### 4. Discussion and Recommendations

Facebook, which day-by-day occupies a greater place in our lives and is growing rapidly, is one of the most popular social networking sites for university students. This is regarded as one of the biggest factors for its use as an effective and efficient instrument of learning. The fact that Facebook is free of charge, and that the majority of university students are members of it, make its use inevitable as an instrument in learning and the teaching process.

Blackey and Chew (2009) mention the benefits of social networking sites for university students, academicians and institutions in enriching learning and the teaching experience. They suggest that social networking sites develop communication skills, increase participation and social adherence, strengthen peer support, and assure that cooperative learning occurs. Teacher candidates' views demonstrate that including Facebook in learning-teaching processes facilitates learning, reinforces knowledge, ensures permanence in learning, enables users to keep up to date in terms of current events, increases inquiry and interpretation skills, provides information on what is not taught in classes but what is wondered, and that it assures the continuity of classes on Facebook. The findings show that social networking sites can be used more easily than other teaching methods and systems, as they are flexible and user-friendly. Many students and researchers create communities by taking simple steps, and sharing between themselves makes communication and feedback easier (Gulbahar, Kalelioglu & Madran, 2010). It was observed that the application caused improvements in students' learning experiences such as asking questions, explaining, criticising, giving examples, discussing and problem solving - which are all very important. The fact that students, who are active in their learning process, also help each other with learning is evidence that Facebook supports cooperative learning.

It became evident in this research - which used a qualitative research approach – that teacher candidates in biology could use these environments effectively in teaching through cooperation and sharing diverse sources/materials, and that those environments had positive effects on permanent learning. In consequence of the research it was found that the biology teacher candidates stated that their awareness was raised as they could use those environments for educational purposes. In addition, instances of sharing within the Facebook group facilitated following the course content and revision; thus it facilitated efficient and regular study. Facebook enabled students to share new information, and the Facebook group turned into a learning environment that helped students to follow the classes every week.

It was concluded that students helped each other and shared what they had, and that some students' communication with their classmates increased thanks to the Facebook group. In this way, some students' communication with their classmates increased at the end of the application, and communication occurred between people who did not use face-to-face communication in the classroom. Thus, Facebook provides an alternate educational environment for students who cannot

express themselves sufficiently in the classroom. Accordingly, it may be said that using Facebook for course-related sharing contributes to interaction between students. In addition, many students were found to think that using Facebook for educational purposes was beneficial. However, it was pointed out by some of the biology teacher candidates that it has negative as well as positive effects. The points mentioned were: the need to have an internet connection to follow the Facebook group or Facebook profiles; unnecessary sharing on Facebook; distracted attention and wasting of time. It is thought that individual differences between students, and especially negative attitudes towards the Animal Physiology course, might be influential in disagreements arising.

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