

Evaluations of Students on Facebook as an Educational Environment

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Abstract

Taking cognizance of the transformation experienced in education technologies, the concept that comes into prominence in integration of ICTs to education process at present is web 2.0. The main philosophy of web 2.0 technologies is its contribution to content formation of users and high-level interaction between users. One of web 2.0 technologies used widely is social networking sites. In this study, educational use of Facebook, which is a social networking site, was assessed in terms of student views. To that end, 27 students were inserted to an interaction in Facebook environment as a part of a formal lesson for 2 months. The students appraised Facebook positively in aspects of dissemination of information, arousing interest, motivation, presenting interaction opportunity, whereas negatively in terms of being nested with entertainment, problem of control mechanism, excessive informational convergence. The students made suggestions about Facebook in terms of educational usage, providing teacher supervisions, introducing education in Facebook environment and including student performance in this environment into academic assessment process.

Keywords: *Social networking sites; SNS; Facebook; Web 2.0; facelearning.*

Introduction

Technological developments have also affected the internet world, and internet has become a platform in which the content is generated by numerous people and information among users is shared out, instead of being an environment that the information is transferred by a limited number of people. In this context, some technologies have been named web 2.0 at present.

The term web 2.0 that was first set forth in 2004 by Tim O'reilly was born from the philosophy used by a secondary-generation internet practice group, which is a user centred design (Wikipedia, 2010). O'reilly stated the most significant feature of web 2.0 term as increasing interaction-cooperation on internet web and users' being able to have the right to comment on information administration (O'reilly, 2005). Today web 2.0 technologies are named as the new schools (Solomon & Schrum, 2007). Basic web 2.0 technologies can be exemplified as video-sharing sites, blogs, wikies, podcasting, instant messaging programs. Of web 2.0 technologies, one of the most popular and maybe the most interaction providing between users is Social Networking Sites (SNS). Social Networking Sites are a

subject for trainers for educational sense in terms of their both common usages and functions they have, and various model suggestions for uses of these technologies have been made (Byrne, 2009; Gunawardena, et al., 2009; Selwyn, 2007).

Social Networking Sites and Facebook

Although there are social sites such as MySpace, Friendster, Reunion, one of the social sites that is the most common, has the highest number of users and provides the most interaction opportunities is Facebook. Like in any other social networking sites, Facebook is a platform that features interaction between users. Via this platform, the users share content and thusly become active participants contributing content creation. As of August 2011, there are over 750 million active users and 50% of the users use Facebook every day (Facebook, 2011). Facebook users can create a friend list right after membership process and can specify those who can or cannot take part in the interaction (friend selection and limitation of authority) when they sign in. Sharings can be conveyed among friends and enriched with comments.

Between friends named by Facebook platform and members related with each other, information sharing (text, photo, audio and writing) can be performed. Sharings can be seen by people related with each other. Information sharing of members (text, photo, audio and writing) is carried out with a set of basic process on Facebook platform. Important ones of those are; video sharing, photo sharing, text sharing, commenting, activity announcements, chat-instant messaging and group creation. Via options available on the platform, each member can share information, and this shared information can be quoted from a common page that friends can see. Considering interaction environment and information share feature that facebook enable, the hypothesis that facebook can be used as educational environment has been designed in that sense in the research.

Group Creation Process on Facebook Platform

It was stated that sharings performed in terms of facebook use can be accessed by all old and new students and accordingly that causes information complexity and mess (Bosch, 2009). There is, however, create group process on facebook that would prevent this mess on facebook platform. Facebook members can create a group with the option "Create group" on their main pages. Create group feature puts away this problem and enables limitations of sharings with certain people. Under the circumstances, teachers as group admins are able to arrange the group as they wish. The group can be renamed, desired invitations of facebook users can be made or people who want to join the group can be added and unwanted ones can be prevented. In brief, a virtual classroom environment intended to a lesson can be generated on facebook. A sharing performed in a group is both shared on facebook, and information that alerts users about that a sharing have been done is sent to group members via e-mail. Facebook provides significant interaction occasions for users to become active.

Literature Review

McCharty (2010), who defines facebook as a significant educational environment owing to its popularity and easy use, performed a blending (virtual and real) learning environment and collected data from 120 students. In the result of the research, McCharty (2010) emphasized the significance of the two key factors as peer interaction and academic engagement on facebook learning environment. McCharty also put forth the finding that cultural interaction, which could not be provided in the classroom for students, could be enabled on facebook environment. Another study in which facebook is researched in terms of education-oriented concept was conducted by Arnold and Paulus (2010). At

the end of this research designed with 10 students' participation qualitatively, it was propounded that numerous educational information is being shared on social networking environment; however, there are misused sharings as well. Besides, researchers also emphasized that teachers do not have active control over misused sharings and there must be prevention on those kinds of sharings.

As to Morgan (2010), defined to have had complicity on the matter of usage of this platform, which is education-oriented for students as a result of the research. At the end of the research, a suggestion for students about how to use facebook in educational sense was made. Bosch (2009), on the other hand, received opinions of 50 students receiving education from facebook about educational and training facebook use. It was reported at the end of the research that educational facebook use is more of sharing lesson materials over facebook, planning common project studies and providing communication between teachers and students. Madge et al. (2009), in their research, took 213 university students' views on educational use of facebook. It was stated that the students might think to use facebook for informal education rather than formal education. Researchers, however, made suggestions about the fact that wide range of studies on educational use of social networking sites have to be conducted. Conole and Culver (2010) specified that cultural matters are as significant as technical matters in social network use in educational sense and educational use of social networks would be gained in time in a cultural frame.

There exist various researches in which educational use of social network sites are probed. In majority of these studies, suggestions that educational use of SNSs have to be researched practically have been made (Bosch, 2009; Madge, et.al, 2009; Yuen & Yuen, 2008; Anderson, 2007; Solomon & Schrum, 2007; Kosik, 2007).

The Aim of the Research

The aim of this research is to determine the views of students receiving education on facebook environment through facebook use as an educational environment. Questions below are tried to be answered in that sense:

- What are students' views about advantages that education on facebook environment provides?
- What are students' views about disadvantages that education on facebook environment set forth?
- What are the students' suggestions about educational environment on facebook environment in order to be more efficient?

Method

Research Model

Views of students were taken about educational usage of facebook in the scope of this research designed with qualitative method. The research is as case study design with its qualitative method. Case study is research design examining the fact with its own life framework (Yin, 1984; Yildirim & Şimşek, 2006). 27-students receiving education-support service via facebook were interviewed within the scope of the study.

Participants

A group including 27 students (8 women, 19 men), who take science history lesson for two credits and are trained in Selcuk University, Computer Teaching Department in 2010-2011 education years, was presented an education-support service on facebook. In consequence of education process for the student group receiving education-support service over facebook for two months, November 10th, 2010 – January 10th, 2011; facebook views of the students in that group were asked. Education environment on facebook, on the other side, was named facelearning.

Procedures

In the lesson called Science History, education-support service (facelearning) was presented over facebook for two months. Accordingly a group named science group was created on facebook environment. Interaction between students was provided via the group. Steps below were followed for creation of facebook group and education process:

Group creation: The group "Science History" was created by teacher and account settings were made according to members' access only.

Announcement for students not having an account: It was determined in application group that a student does not have an account and facebook account was activated by the student.

Invitation / Acceptance of members: Students in application group were delivered invitation or those who wanted to join were accepted into the group.

Pre-training for students: A written document on which the group is introduced with the main lines and example processes are available was sent to the students via bilimtarihi@facebook.groups.com mail account.

Performing two-month education: Sharings were performed between students to whom two-month web-assisted education was adapted.

Evaluation of the education: Getting views of students about facelearning education.

Group settings were altered in the way that only group members can follow Science History lesson on facebook in order to prevent external entries. On the other hand, the mail account bilimtarihi@groups.facebook.com was created in order to communicate with group members via e-mail. A student was determined not to have a facebook account and this student was provided to have a facebook account. Students were given a brief training about the aim of the group and about how to use it. For two months, interaction opportunity was presented through facebook, in parallel with theoretical teaching process in classroom for two months. Students were provided to make sharing and to interact with each other by leading them to interesting research questions appropriate for the lesson content.

Data Collection

A semi-structured interview form was prepared to receive evaluations (advantages, disadvantages and suggestions) of students using facelearning application for education on facebook environment. Each student was interviewed for ten minutes for the purpose of evaluation of education on facebook.

Data Analysis

For analysis of interviews conducted with students, content analysis method was used. Content analysis is appropriate for analyses of themes in which no theoretical aspect is available in qualitative researches (Yildirim & Şimşek, 2006). Interviews conducted with students for content analysis were put in writing and the data were processed to indexes, then processes that are required for content analyses were followed respectively as creating codes from indexes, deducing themes from the codes, identification of themes by arranging and propounding findings in line with these themes (Bernard, 2000; Yildirim & Şimşek, 2006). Another important issue in analyses of qualitative data is data reliability. Views of three different experts were regarded for data reliability in coding of data, creating themes from the codes and identification of themes. The reliability of the study, with Consensus / (Consensus+Dissensus)*100 formula, was calculated as; 84% for advantages, 88% for disadvantages and 79% for suggestions. Findings obtained for each questions were shared in titles.

Findings

Via interviews performed with students after education process, suggestions about advantages provided by educational use of facebook, disadvantages caused and use that is more effective were made. Obtained findings were given in titles.

Advantages Provided by Educational Use of Facebook

The first question inquired to 27 students who participated in educational practice on facebook group named Science history was aimed to determine what advantages the educational facebook use provides. 27-students gave 69 valid responses to this question. It was set forth that students refer to 10 different advantages in the wake of content analysis (Table 1).

Table 1. Advantages that Educational Use of Facebook Provides

	f	%
Dissemination of information and informing everyone	18	26.1
Piquantness and motivation	12	17.4
Interaction chance	9	13.0
Ease of access to information – time gain	9	13.0
Entertainment into education	7	10.1
Multimedia support	5	7.3
Interpretation of information	4	5.8
Providing a democratic environment	3	4.3
Providing permanence	1	1.4
Mass education eligibility	1	1.4
Total	69	100

As seen in Table 1, dissemination of information and informing everyone about published information via facebook (26.1% - 18 students) is the most voted advantage. That is to say, in the case that a sharing is made through facebook, it was suggested as the most significant advantage in terms of sending an automatic mail in order to inform the students about a sharing. Another advantage that students explain is piquantness and motivation (17.4% - 12 students). Other significant advantages are ranged as providing interaction chance (13.0%), ease of Access to information – time gain (13.0%), and entertainment into education (10.1%). Presenting multimedia support (7.3%),

interpretation of information (5.8%), providing a democratic environment (4.3%), providing permanence (1.4%), mass education eligibility (1.4) can stand in line as other advantages.

Examples of dissemination of information and informing, piquantness and motivation, interaction chance themes, as the most expressed advantages by students, are given below.

Dissemination of information and informing

"...everyone shares something. I've gained more knowledge than I expected at the beginning of the application. I think it is synergy. Besides, all the group members were informed about updates on improvements via mails..."

Piquantness and motivation

"In order that people can have an opinion on something, formation of piquantness at the outset is quite important. Users' access to information at any moment on facebook, which is used long period of time, will necessarily arise their piquantness and this is a considerable motivation..."

Interaction chance

"...friends, who are not close to each other in classroom and maybe just exchange hellos, could find the chance to communicate with each other. A sharing, how can I say, almost built a communication bridge in classroom."

Disadvantages of Education on Facebook Platform

Twenty-seven students who participated in education on facebook were asked about disadvantages of education on platform. Eight of 27 students stated that education on facebook does not have any disadvantages. As for one student mentioned that normally, there would have been some entanglements if the group creation process had not been included and added that this process did remove the complication. Responses of 18 students, who think educational use of facebook has disadvantages, were analysed and given in Table 2.

Table 2. Disadvantages of Education on Facebook Platform

	f	%
Being nested with entertainment	6	26.1
Doubt for the accuracy of shared information	5	21.7
Problem of control mechanism	4	17.4
Informational convergence	3	13.0
Excessive information overload	2	8.7
Distractions	2	8.7
Lack of visual sharing	1	4.3
Total	23	100

Twenty-three disadvantages were labelled by students for the education on facebook environment while those were collected in titles (Table 2). The disadvantage that was voted highest by the students was that education is offered as nested with entertainment (26.1%). Students considered the education, which is nested with entertainment, as a disadvantage. Within disadvantages, accuracy

doubt for the information takes the second place with 21.7%. Problem of control (17.4%), informational convergences in the content (13%), excessive information overload (8.7%) and distractions on facebook page (ads, links and the like) (8.7%) were the other disadvantages pointed out. A student expressed the lack of visual sharing as a disadvantage.

Example views are given below for disadvantages of education on facebook platform stated by students.

Being nested with entertainment

"I mean I idle around on different sharings except for the education, such as watching videos."

Doubt for the accuracy of shared information

"... Considering the fact that the information on facebook is shared by the students, we may say that there is may be mistrust against shared writings or videos"

Problem of control mechanism

"Controlling is tough. People may share unnecessary stuff. There may be malicious use for the group. Also it is inconveniency that everybody adds something into the group..."

Suggestions Made by Students about Educational Use of Facebook

Students who receive facelearning education were asked to make suggestions considering their experiences for people who want to perform the education on facebook. After analysed, students' responses are given in table (Table 3).

Table 3. Suggestions of Students about Educational Use of Facebook

	f	%
Teacher supervision must be increased	12	24.5
Comments must be encouraged	9	18.4
Teacher-student interaction must be increased	6	12.2
Education must be introduced on facebook environment	5	10.2
It must influence academic success	4	8.2
Sharing can be classified in titles	4	8.2
Subject sharing must be more brief	4	8.2
Activities must be organized	2	4.1
Work for cooperation must be carried out	2	4.1
Project-based practices must be performed	1	2.0
Total	49	100

Twenty-seven students who participated in facelearning application made 11 different suggestions about educational use of facebook, considering their experiences as well. Respectively, those suggestions are; teacher supervision must be increased (24.5%), sharing comments must be encouraged (18.4%), teacher-student interaction must be increased (12.2%), education publicity through facebook must be redounded (10.2%), this environment must be included into assessment

process for academic success (8.2%), desultory subject titles must not be sorted as in forums in facebook group and facebook must take notice of this (8.2%), sharings must be more brief instead of boring, long ones (8.2%), activities on facebook environment must be allowed to (4.1%) work for cooperation must be carried out (4.1%) and students must be led to make projects and these projects must be shared on this environment so that they can be evaluated by friends (2.0%).

Suggestions made by students about educational use of facebook can be exemplified as below.

Teacher supervision must be increased

"I think sometimes sharings may be misemployed. I think a sharing, which is out of its purpose, or bad reviews must be supervised by a teacher. Nay, constantly..."

Comments must be encouraged

"... comments made to the sharing even attracted my attention to it much more. I wondered and focused on it in a manner. Comment or like affect members necessarily. Comment must be encouraged furthermore; contributions in the form of comments can be included giving marks..."

Teacher-student interaction must be increased

"Teacher can play a more active role in guidance role. Students must be able to consult for a comment to the teacher. For example, students must be able to ask for resource or make sharing after consulting the comment to teacher before directly making the sharing..."

Conclusions and Discussion

Facebook, as a phenomenon and a sort of social networking site of today's internet world (SNS-Social Networking Sites), is one of the commonly-used web 2.0 technologies, on which users spend much of their time. The extensity and popularity of this technology, generally used for communication and entertainment, have brought its potential of educational use to the agenda, and have been mentioned by educators (Solomon & Schrum, 2007). Besides, there have been numerous suggestions about the educational use of facebook (Yuen & Yuen, 2008; Anderson, 2007; Solomon & Schrum, 2007). Many theorists like Bandura (Social Learning Theory) and Vygotsky (Social Constructivism) emphasized the role of interaction in learning (Luckin, 2008; Tu, 2000). In this respect, facebook is also important for being a user-friendly and common technology that could improve the interaction between teacher-student and student-student, which cannot be sufficiently provided in classroom environment (McCharty, 2010). The research that aims to evaluate facebook as an educational support environment with the help of students' opinions was carried out with 27 students receiving 2-credits science history lesson. The group creation function of facebook, identified by Bosch (2009), is used to prevent any informational convergence, possible to happen as a result of its being accessible for everyone. Moreover, it has been limited only with members through facebook group creation setting so as to reject others' access but students'. The education system service on facebook has been called as facelearning. All students stated that they had not used facebook as a formal education environment.

Twenty-seven students shared 84 different sharings on facebook (significant inventions in history (33 sharing), educational technologies (18 sharing), Turkish scientist (13 sharing), global scientist (11 sharing), small-scale inventions (5 sharing), and announcement (4 sharing). According to multimedia properties, these 57 of the 84 sharings were text-based, 19 were photo, 5 were video and 3 were sharings with links. Students also interacted with each other on these sharings. As a facebook service, students liked these sharings of their friends 143 times and added 63 comments.

Students' interactive learning on facelearning environment designates active learning. As an indication of active learning, students have become active participants on facebook that question the information, contribute to the formation of the information and think critically instead of being passive recipients of information (Buckley, Garvey & McGrath, 2011; Rotgans & Schmidt, 2011; Michael, 2007). Students have not only knowledge and skills but also attitudes towards the subject they are searching in the active learning process (Matveev & Milter, 2010; Silberman, 1996). Within this context, students have also been able to express their attitudes by their comments and likes in addition to their sharings in facelearning process. With the education service on facebook, students have been able to share what they want democratically, have taken educational responsibilities, have evaluated freely each other's sharings and have brought synergy with cooperation. As interacting on facebook as an educational environment between the dates November 10th, 2010 – January 10th, 2011, students' assessments on the use of facebook as an educational environment were received.

Students receiving the education over facebook stated that the educational use of facebook has provided numerous advantages like dissemination of information, Piquantness and motivation, interaction chance, ease of access to information, time gain and entertainment into education. This finding corresponds to Kosik's (2007) that mentions the interaction, which cannot be provided in classroom environment, can be better provided in virtual environment and McCharty's (2010) finding that facebook has become a modern communication and telecommunication environment. Besides, such contributions stated by students as dissemination of information, Piquantness and motivation, interaction chance, ease of access to information, time gain and entertainment into education are highlighted elements for ideal teaching processes in literature (Demirbas, 2011; Moss and Crowley, 2011; Huizenga, et al., 2009; Kawachi, 2003). Within this scope, it can be inferred that facebook has many opportunities in education and supports ideal educational environment via students' opinions.

The students having the formal education on facebook for the first time were asked about its disadvantages as an education environment and 9 of 27 students stated no disadvantage. Disadvantages stated by other students were about its being nested with entertainment, the doubt of accuracy of the shared knowledge, control mechanism problem, informational convergence, excessive overload of information, distractions and the lack of visual sharings. This finding might have resulted from the lack of students' educational facebook experience. Morgan (2010) indicated that students who receive education through facebook environment have confusions about educational use of facebook platform and suggested to train them. Conole and Culver (2010), correlatively, signified that social and cultural aspects of educational use of social networks are also significant as well as technical matters, and that an enculturation in terms of social network use is necessary. Suggestions such as being nested with entertainment, distractions, having a control mechanism made by students at certain points refer to a requisite for cultural background and training about facebook.

The highest voted suggestion made by students about educational use of facebook is teacher supervision increase. Arnold and Paulus (2010) explained that teacher supervision is significant in educational use of facebook environment. Students viewed teachers as an important element of education process even on visual platform. As to other suggestions made by students are ranged as;

encouraging comments for other sharing, increase of teacher-student interaction, publicity of education on facebook environment and sharing's effect on academic success. Further comments of students to each other's sharing and more interaction of teachers with students are similar to the suggestion of McCharty (2010) about providing multi-cultural interaction like student-student and student-teacher. The suggestion about increasing publicity of education on facebook platform shows similarities with Morgan's (2010) finding, which includes the fact that students have confusions about how to use social networks in educational sense emotionally and behaviourally; and the requirement to train students about the use of this new technology. Suggestions made by students must be emphasized to have significant contributions to educational use of facebook

Suggestions

Facebook that attracts attention especially with its young user profile has a significant usage potential as an education platform. This technology can be used actively by teachers, with the aim of taking the education beyond the classroom and removal of class hour limitations. Facebook can be used by teachers as an important platform, in practices that are co-operational, based on problem solving and project-based. For that very reason, a cultural preparation can be gained to teachers and students by training them about educational use of facebook. Teachers must be provided to play a more active role for surmounting the problems such as informational convergence, problem of control mechanism and preventing irrelevant sharing. Participation of students can be increased by including their academic performance of students on facebook environment to the assessment process.

References

- Anderson, P. (2007). What is web 2.0? Ideas, technologies and implications for Education. *JISC Technology and Standards Watch*, Feb. 2007.
- Arnold, N., & Paulus, T. (2010). Using a social networking site for experiential learning: Appropriating, lurking, modeling and community building. *Internet Higher Educ*, 13, pp.188-196.
- Bernard, H.R. (2000). *Social research methods. qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Bosch, T.E. (2009). Using online social networking for teaching and learning: Facebook use at the University of Cape Town. *Communicatio*, 35(2), pp.185–200.
- Buckley, P., Garvey, J., & McGrath, F.(2011). A case study on using prediction markets as a rich environment for active learning. *Computers & Education*, 56(2), pp.418–428.
- Byrne, R. (2009). The effect of Web 2.0 on teaching and learning. *Teacher Librarian*, 37(2), pp.50-53.
- Conole, G., & Culver, J. (2010). The design of cloudworks: applying social networking practice to foster the exchange of learning and teaching ideas and designs. *Computers & Education*, 54(3), pp.679–692.
- Demirbas C. (2011). Innovative preschool education. *Energy Educ Sci Technol Part B*, 4, pp.647-652.
- Facebook. (2011). Facebook statistics. Retrieved 18 January, 2011, from <http://www.facebook.com/press/info.php?statistics>.

- Gunawardena, C.N., Hermans, M.B., Sanchez, D., Richmond, C., Bohley, M., & Tuttle, R. (2009) A theoretical framework for building online communities of practice with social networking tools. *Educational Media International*, 46(1), pp.3-16.
- Huizenga, J., Admiraal, W., & Akkerman, S. (2009). Mobile game-based learning in secondary education: engagement, motivation and learning in a mobile city game. *Journal of Computer Assisted Learning*, 25(4), pp.332-344.
- Kawachi, P. (2003). Initiating intrinsic motivation in online education: review of the current state of the art. *Interactive Learning Environments*, 11(1), pp.59-81.
- Kosik, A. 2007. *The implications of facebook. Sharing the Commonwealth: Critical issues in higher education*, pp.9–10.
- Luckin, R.(2008). The learner centric ecology of resources: A framework for using technology to scaffold learning. *Computers & Education*, 50 (2), pp.449–462.
- Madge, C., Meek, J. Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology*, 34(2), pp.141-155.
- Matveev, A.V., & Milter, R.G. (2010). An implementation of active learning: assessing the effectiveness of the team infomercial assignment. *Innovations in Education and Teaching International*, 47(2), pp.201–213.
- McCharty, J. (2010). Blended learning environments: using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology 2010*, 26(6), pp.729-740.
- Michael, J. (2007). Faculty perceptions about barriers to active learning. *College Teaching*, 55(2), pp.42 -47.
- Morgan, J.J. (2010). Social networking web sites: teaching appropriate social competence to students with emotional and behavioral disorders. *Intervention in School and Clinic*, 45(3), pp.147-157.
- Moss, K., & Crowley, M.(2011). Effective learning in science: The use of personal response systems with a wide range of audiences. *Computers & Education*, 56 (1), pp.36–43.
- O'reilly, T. (2005). *What is Web 2.0*. Retrieved December 16, 2010, from <http://oreilly.com/web2/archive/what-is-web-20.html>.
- Rotgans, J.I., & Schmidt, H.G. (2011). The role of teachers in facilitating situational interest in an active-learning classroom. *Teaching and Teacher Education*, 27, pp.37-42.
- Selwyn, N. (2007). Screw blackboard... do it on Facebook!: An investigation of students' educational use of Facebook. *Pole 1.0 – Facebook social research symposium*, November 15,2007, at University of London.
- Silberman, M. (1996). *Active learning: 101 strategies to teach any subject*. Boston: Allyn and Bacon.
- Solomon, G., & Schrum, L. (2007). Web 2.0 Web Tools, new schools. *International Society for Technology in Education (ISTE)*. Washington: ISTE Publication.
- Tu, C.H. (2000). On-line learning migration: from social learning theory to social presence theory in a CMC environment. *Journal of Network and Computer Applications*, 23(1), pp.27-37.
- Wikipedia. (2010). *Web 2.0. Wikipedia The Free Encyclopedia*. Retrieved November 21, 2010, from http://en.wikipedia.org/wiki/Web_2.0.
- Yildirim, A., & Şimşek, H. (2006). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayınevi.

Yin, R. K. (1984). *Case study research: Design and methods*. Newbury Park, CA.:Sage.

Yuen, S.C.Y., & Yuen, P. (2008). Web 2.0 in education. In K. McFerrin et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference*, Chesapeake, VA: AACE, pp.3227-3228.