Eguz, E. (2020). Using Web 2.0 tools in and beyond the university classrooms: A case study of Edmodo. *International Online Journal of Education and Teaching (IOJET)*, 7(3). 1205-1219. https://iojet.org/index.php/IOJET/article/view/660

Received: 06.07.2019
Received in revised form: 19.02.2020
Accepted: 21.05.2020

USING WEB 2.0 TOOLS IN AND BEYOND THE UNIVERSITY CLASSROOMS: A CASE STUDY OF EDMODO

Case Study

Esra Egüz

Trinity College Dublin

eeguz@tcd.ie

Esra Eguz graduated from Istanbul University, Department of Turkish Language and Literature. She received her MA and PhD in Classical Turkish Literature from the same university. She also earned MPhil degree in Applied Linguistics from the Trinity College Dublin.

USING WEB 2.0 TOOLS IN AND BEYOND THE UNIVERSITY CLASSROOMS: A CASE STUDY OF EDMODO

Esra EGUZ

eeguz@tcd.ie

Abstract

New internet technologies have not only transformed communication but also revolutionized teaching and learning. One of the greatest steps forward in this area was Web 2.0 technology. In addition, new technologies such as podcasts, social networking, and online learning communities started to shape communication between teachers and students, and these became tools for sharing educational content. This paper examines the use of Web 2.0 tools in higher education, specifically in a case study of Edmodo. The first section of the paper provides information about the relationship between Web technologies and education. The second section focuses on a case study using Edmodo as a Web 2.0 tool to teach classical Turkish literature to third-year undergraduate students. The main purpose of the case study is to identify and classify the purposes for which the students and teacher preferred to use Edmodo for communication and in which ways they communicated with each other. A mixed research methodology with a combination of qualitative and quantitative methods was used to collect the data. An open-ended survey was also conducted via SurveyMonkey (www.surveymonkey.com) in regard to students' perceptions of Edmodo. The result of the study showed that student-initiated communications via Edmodo were much fewer than teacher-initiated communications.

Keywords: Edmodo, Web 2.0, e-learning, class interaction

1. Introduction

1.1. Historical Background of Web Technology and Education

The invention of the computer transformed almost every aspect of people's lives in a very short time. The first conception of modern computers was the Turing machine, proposed by Alan Turing in 1936 (Kidd, 2010). In the 1940s, the first digital computers began to appear. PLATO was created by Donald Blitzer in 1952 (Kidd, 2010). This system pioneered online forums, message boards, chatrooms, and instant messaging and created the first online communities (Kidd, 2010). Finally, in 1953, the first PC (personal computer) was introduced by IBM (International Business Machines). Since the 1960s, computers and e-learning have evolved in different ways in the field of education; however, in the 1960s there were not enough educational applications of computers in universities, and one of the reasons for this was the high cost (Kidd, 2010, p. 2).

In 1989, the World Wide Web was designed by Tim Berners-Lee at CERN (the European Organization for Nuclear Research) (Berners-Lee et al., 1992). In their own paper, Tim Berners-Lee, Robert Cailliau, and Jean-François Groff declared the two aims of the World Wide Web initiative as "… firstly to make a single, easy user-interface to all types of information so that all may access it, and secondly to make it so easy to add new information that the quantity and quality of online information will both increase" (Berners-Lee et al., 1992, p. 454).

The World Wide Web brought significant developments to the field of education. In 1981, the first completely online educational course was launched which was the first large-scale, online learning institution (Harasim, 2006). The internet removed distance barriers in education, and the electronic campus became the virtual campus (Hope, 2010, p. 11). In the 1990s and 2000s, e-learning continued to grow, and most institutions in the world began to offer online courses to their students. This development brought a new term to education, e-learning.

The term e-learning, also called technology-based learning, covers "… a wide set of applications and processes, including computer-based learning, Web-based learning, virtual classrooms, and digital collaboration" (Urdan & Weggen, 2000, p. 8). E-learning is also related to online learning. "Online learning constitutes just one part of technology-based learning and describes learning via Internet, intranet, and extranet" (Urdan & Weggen, 2000, p. 8). In other words, e-learning includes online learning, and online learning also covers computer-based learning. The historical context of e-learning development has been illustrated as a table, shown below, by Paul Nicholson (Nicholson, 2007, p. 7).

Table 1: The historical context of e-learning development

ERA	FOCUS	EDUCATIONAL CHARACTERISTICS
1975–1985	Programming; drill and practice; computer-assisted learning (CAL)	Behaviourist approaches to learning and instruction; programming to build tools and solve problems; local user–computer interaction.
1983–1990	Computer-Based Training Multimedia	Use of older CAL models with interactive multimedia courseware; passive-learner models dominate; constructivist influences begin to appear in educational software design and use.
1990–1995	Web-Based Training	Internet-based content delivery; active-learner models are developed; constructivist perspectives are common; limited end-user interactions.
1995–2005	E-learning	Internet-based flexible courseware delivery; increased interactivity; online multimedia courseware; distributed constructivist and cognitivist models common; remote user-to-user interactions.

As seen in the Table 1, e-learning began with the invention of computers and grew with the invention of the internet. The second-greatest technological development in e-learning that occurred after 2004 was Web 2.0 technology.

1.2. Web 2.0 and E-Learning 2.0

To define Web 2.0, Web 1.0 should be defined first. According to Kidd and Chen (2009), in the history of the internet's development, Web 1.0 is a retronym that represents most websites between 1994 and 2004. The key characteristic of Web 1.0 was its read-only feature. In other words, users were reading and receiving information from websites, a feature that made Web 1.0 more static. The term Web 2.0 was used by Tim O'Reilly in a conference in 2004. O'Reilly indicated that one of the key lessons of the Web 2.0 era is that users add value. He also declared that Web 2.0 applications are built based on a network of cooperating data services (O'Reilly, 2009). Unlike Web 1.0, Web 2.0 gave users the opportunity to write as well as read. Internet users started to create comments, express

opinions and feelings, and send visual and auditory material using various Web 2.0 tools such as chatrooms, blogs, forums, wiki websites, and social-networking sites like Facebook- in other words, user-generated content (Strobbe et al., 2010). The differences between Web 1.0 and Web 2.0 were explicated in Table 2 by Gwen Solomon and Lynne Schrum (Solomon & Schrum, 2007, p. 23).

Table 2: The differences between Web 1.0 and Web 2.0

WEB 1.0	**WEB 2.0**
Application based	Web based
Isolated	Collaborative
Offline	Online
Licensed or purchased	Free
Single creator	Multiple collaborators
Proprietary code	Open source
Copyrighted content	Shared content

The use of Web 2.0 tools also resulted in e-learning, referred to as e-learning 2.0. "Electronic learning developed from the first distance modalities (video recordings, CDs, DVDs) to e-learning (web technology) and e-learning 2.0 that uses web 2.0 channels" (Patrut & Patrut, 2013, p. 1-2). The difference between them was identified as "the e-learning 1.0 was highly structured, formal, based on a rigid division of the roles among teachers, students and tutors while in the e-learning 2.0, the web becomes a means that increases the participation and co-operation of all subjects" (Patrut & Patrut, 2013, p. 3).

Web 2.0 was also very useful in regard to social aspects. It supported social networking and gave people opportunities to interact and exchange information, ideas, opinions, and more (Patrut & Patrut, 2013, p. 2). Moreover, this social aspect transformed educational methods and techniques as well as communication between teachers and students. According to Monica and Bogdan Patrut (2013), platform 2.0 that is more participative and interactive has encouraged the evolution of e-learning. Young people are interested in technology and are already users of various social-networking platforms. They could adapt online educational platforms easily.

The benefits of using Web 2.0 tools such as blogs, wikis, and podcasts in an educational context were identified by learning specialists Fernette and Brock Eide's research and cited by Will Richardson (Richardson, 2006, p. 20). They include promoting critical thinking and creativity and analogical thinking, increasing access and exposure to quality information, and combining solitary as well as social interaction.

There are numerous educational technology resources available to teachers and students based on Web 2.0. These have been designed for a wide variety of purposes, such as creating infographics, transforming text to speech, creating podcasts, screen capturing, bookmarking, surveys and polls, quizzes and other assessments, authoring, annotating, web conferencing, creating interactive slideshows, digital storytelling, teaching and learning vocabulary, spelling, and other conventions of language, sharing documents, and creating collaborative resources.

1.3. Edmodo as a Web 2.0 Tool

Edmodo is a free learning platform designed in 2008 as a Web 2.0 tool for teachers, students, and parents for educational purposes (Edmodo, n.d.).

There are several ways to communicate using Edmodo, such as sending a post, private message or a *like*. Edmodo also offers a safe communicative environment that prevents content from being searchable on the internet (Carlson & Raphael, 2015, p. 7).

Instructors have the ability to create several groups on Edmodo. When students create personal accounts on Edmodo using their e-mail addresses and passwords, they can join the group by typing in the group code, which is shared by the instructor. After that, they can see the content and communicate with the teacher and other students.

Edmodo is a highly beneficial educational tool for teachers too. It is "a powerful hub for the flipped or blended classroom as well as for a more traditional classroom enhanced with technology use" (Carlson & Raphael, 2015, p. 3). Teachers can create groups, share content and materials related to their courses, and communicate with their students at any time. They can also create quizzes and surveys or ask students to upload their homework before a specific deadline. It also gives teachers an opportunity to send a note on a selected day and time.

Edmodo is available at www.edmodo.com. It also has an application for mobile phones. The Edmodo website has 85 million members from 190 countries and has been used in 400,000 schools. Moreover, 380 million messages have been sent, and 600 million resources were shared via Edmodo (Edmodo, n.d.).

2. Literature Review

A number of recent studies have been conducted in different countries regarding university students' perceptions of Edmodo.

The studies agree that students find using Edmodo as a technological tool to be beneficial. For instance, Manowong's (2016) study focuses on an EFL classroom and aims to determine 94 undergraduate students' perceptions of Edmodo by using a five-point Likert scale questionnaire. Findings show that Edmodo is a useful and effective learning tool that improves the college students' motivation. Al-Said (2015) investigates the students' perceptions of Edmodo. The research sample is 32 university students in Saudi Arabia. Five-point Likert scale analysis shows students think that using Edmodo increases the effectiveness of learning and communicating between teacher and students. It is also motivating and time-saving. Balasubramanian et al. (2014) also conduct a study on Edmodo. The participants include 285-degree students at a private university in Malaysia. Of these students, 249 are selected as samples for a five-point Likert scale questionnaire. The quantitative analysis shows that the students find Edmodo to be user-friendly. They especially like to use forum and group discussions. They agree that Edmodo helps them access the study materials easily and submit assignments fast. In another study (Mokhtar 2018), Malaysian students' perceptions of Edmodo is similar, although the sample is four students. The interviews with students show Edmodo helps them reach the learning materials. Another example (Oyelere et al. 2016) evaluates the learning experiences of students using Edmodo in a Nigerian university. Data is collected from 87 students through questionnaires and interviews. The result shows that Edmodo has a positive pedagogical impact on learning.

Moreover, studies conducted in Turkey also claim the effectiveness of Edmodo. For instance, Hamutoglu and Kıyıcı (2017) perform research on 37 university students. Qualitative data analysis shows that students think Edmodo improves their interaction with the teacher. However, some feel Edmodo should have an online chat facility. As the sample for his study, Uzun (2015) prefers to choose the five least active and the five most active Edmodo users out of 52 college students who take the same course. Uzun interviews these 10

students to review their posts. The qualitative data analysis shows students have positive perceptions of Edmodo. Most state that Edmodo gives them the opportunity to participate and communicate. However, some find Edmodo time-consuming and difficult to use. Teyfur et al. (2017) conduct a study with 41 university students. The data obtained from the surveys shows that students find Edmodo useful for interaction between students, although its mobile application has several problems. Tavukcu's (2018) research is based on a semi-experimental model. In his study there are two groups: one group is experimental and uses Edmodo, and the other group is the control who doesn't use Edmodo. Each group consists of 53 college students. The result shows that the students who use Edmodo get higher scores in the project evaluation achievement. They also interact with the teacher more.

3. Methodology

3.1. Data Collection

Data for this study were collected in connection with the 16th century Turkish literature class, which was taught at Istanbul University in the 2016-2017 academic year, and from Edmodo. The course is compulsory for third-year undergraduate students in the Turkish Language and Literature Department. The content includes the history of 16th century Ottoman-Turkish literature and analysing poetry from the same era. The sample of this study is 163 students.

This course was lectured for both formal and evening classes. In the formal class, there were 128 students, and there were 126 in the evening class; the total number of students was 254. The distribution of the students by gender is shown in Figure 1. A total of 179 (70%) of the students were female and 75 (30%) were male.

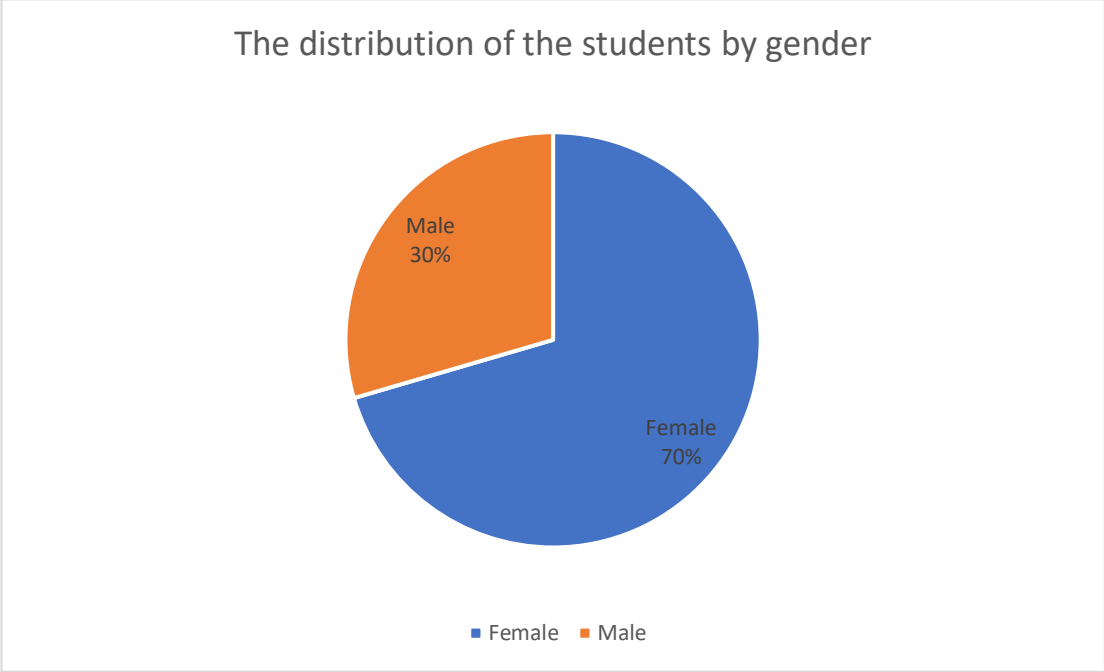

Figure 1: The distribution of the students by gender

After the announcement about Edmodo, 163 of 254 students (64%) have attended the Edmodo class. The distribution of the attendants is shown in Figure 2. A total of 128 (79%) of the attendants were female and 35 (21%) were male.

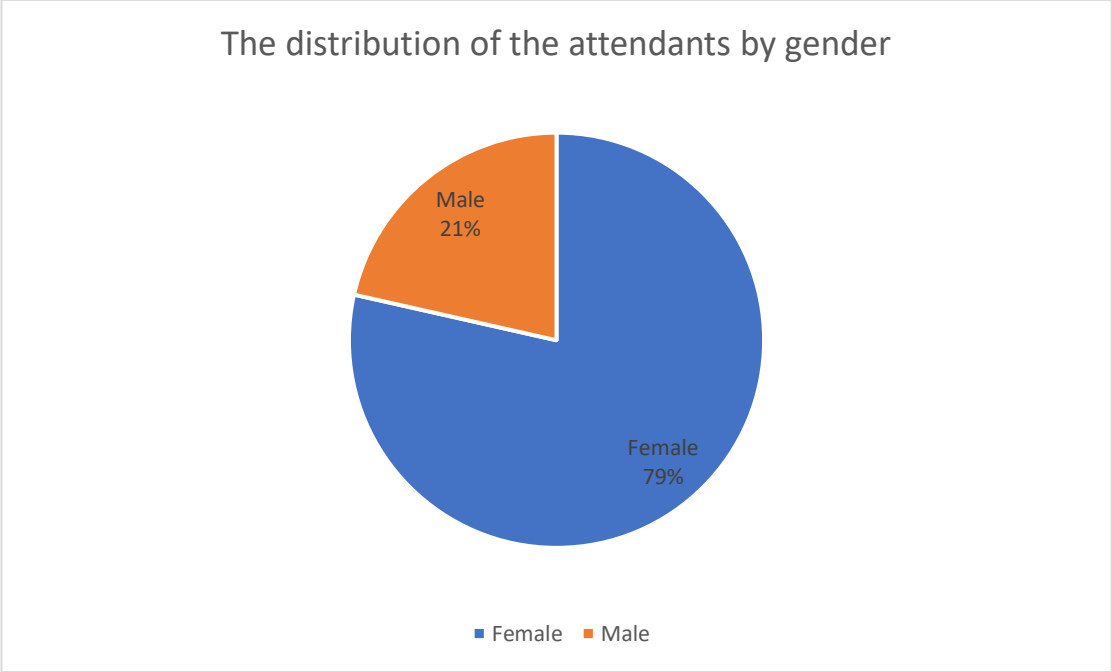

Figure 2: The distribution of the attendants by gender

The data in the "Students' Perceptions of Edmodo" section depend on an open-ended survey that was conducted via SurveyMonkey (www.surveymonkey.com) for the same course, and its link was shared on Edmodo. The question was, "Do you think Edmodo promotes students' engagement in the course?" and it was answered by 37 students out of 163 (23%).

3.2. Data Analysis

A mixed research methodology with a combination of qualitative and quantitative methods was used for this study. Qualitative analysis was used to analyse data on Edmodo and SurveyMonkey. Moreover, the data collected from these platforms were classified by content/theme. A quantitative method was used for coding and reducing qualitative data to numbers.

The collected data were classified as communications initiated by the teacher and by the students. After that, interaction topics between the teacher and students were categorized.

4. Findings

4.1. Teacher-Initiated Communication

Figure 3 below shows the percentages of the types of teacher-initiated communications on Edmodo.

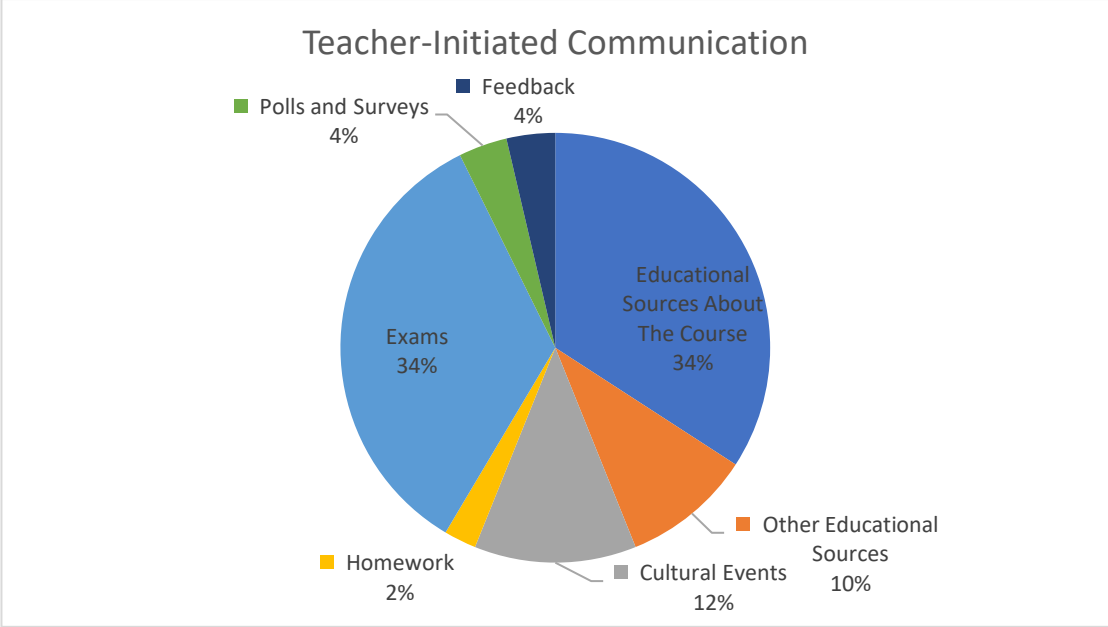

Figure 3: Teacher-initiated communication

As seen, the posts were categorized the themes as educational sources about the course, other educational sources and cultural event announcements, homework announcements, exam announcements, polls and survey and feedback.

The sources about the course were intended as extra reading and visual/auditory material for students who had an interest in the area. They were also aimed at giving students an idea about each week's topic before the class met.

Apart from materials about the course, different educational sources were shared via Edmodo. Most of these were online sources. As a written source, a PhD thesis was shared. The aim was to guide students to conduct research in other areas as well.

In addition to educational posts, current cultural events taking place in Istanbul were announced via Edmodo. These events included book festivals, film festivals, art exhibitions and historical Istanbul tours. Moreover, seminars about Ottoman poetry offered by various scholars were announced. The aim was to encourage students to attend cultural events in Istanbul more often.

During the academic term, two announcements about homework assignments were sent to students via Edmodo. One of these was about a bibliography, and the other was a bibliographical study sample used to give students an idea about the content of the homework.

A topic that students often ask questions about is exams. Details were provided about which topics exams would cover and what kinds of questions students could expect to see in the exams. Moreover, written materials for which they would be responsible on exams were shared with students. The midterm, final and makeup exam results were also shared via Edmodo along with noticeboards in the department. In addition, some feedback about exams was provided on Edmodo.

As learner autonomy plays a significant role in teaching, autonomy-supportive polls and surveys were conducted with students to learn their opinions and to give them options. Two

different polls were created on Edmodo, and one survey was created on SurveyMonkey (https://tr.surveymonkey.com/dashboard/).

4.2. Student-Initiated Communication

Figure 4 illustrates the percentages of student-initiated communication.

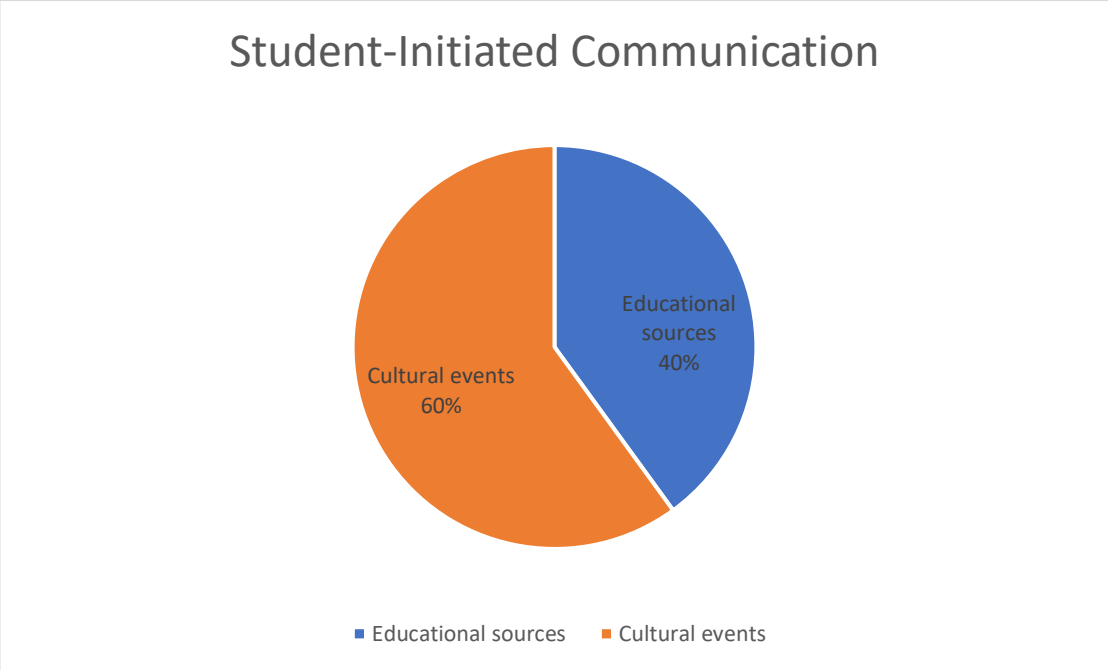

Figure 4: Student-initiated communication

Although students had written their comments or sent *like*s after posts, during the term, only four different students posted notes to the group and they preferred to share several educational sources and cultural event announcements.

One note was posted related to an educational resource that included several miniature paintings depicting Ottoman social life. Another note was shared as a video about Ottoman poetry by a different student.

Moreover, students announced several cultural events via Edmodo during the term. One student shared two symposium announcements about Turkish literature. Another student sent a concert poster to the group. In total, three different posts were sent by students about cultural events.

Students didn't send any posts related to exams or homework because they asked their questions or made their comments after posts as replies.

4.3. Interaction

During the term, there was no interaction between students on Edmodo apart from sending *like*s to each other's posts. However, interaction between students and teacher occurred by using the 'reply' sections after posts and sending *like*s and emoticons.

4.3.1. Replies

Messages can be sent after a post as a reply on Edmodo. Figure 5 below shows the percentages of topics that were covered in the reply section.

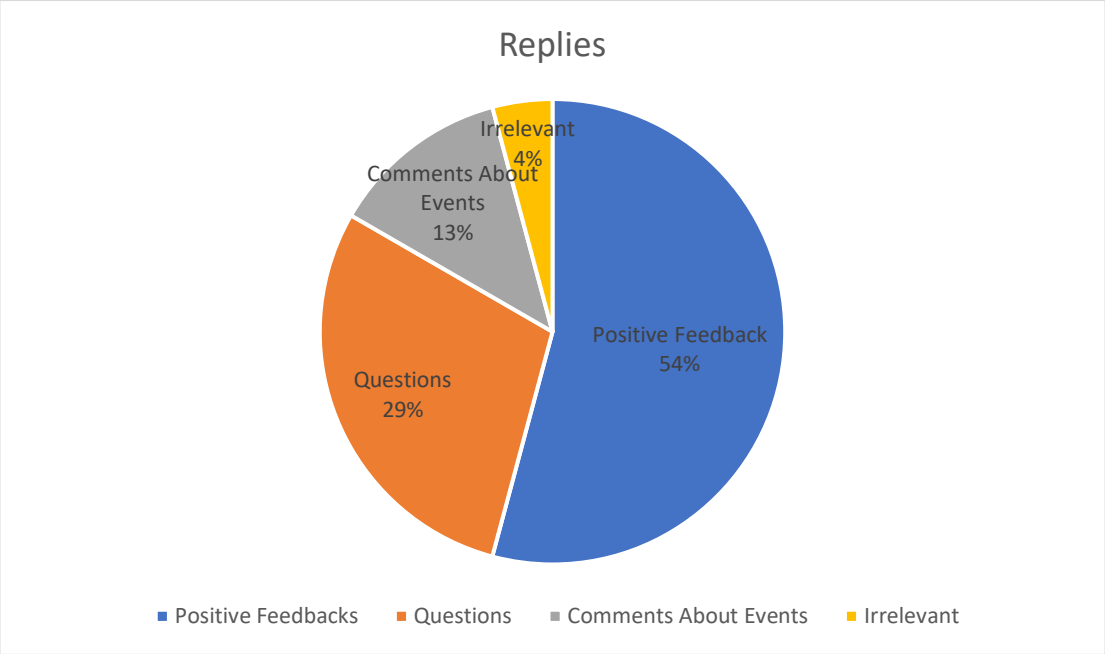

Figure 5: Replies

In the class, most of the messages posted following notes involved positive feedback, for example, saying 'thank you' or complimenting the class and the teacher. Some comments were used to ask questions about the exams, the homework and the course topic. Some of the replies that were sent after cultural event announcements were comments about those events. The remaining two messages were irrelevant to the original post.

4.3.2. Likes

Mark Zuckerberg introduced the 'like button' as a new feature of Facebook in May 2010. "Connecting people, things, and ideas is also the principle behind the much-debated Like button, a feature that lets users express their instant approval of a specific idea or item and share it" (Dijck, 2013, p. 49). However, the like button was not only used by Facebook; "three months after its introduction, more than 350,000 external websites had already installed the feature" (Dijck, 2013, p. 49). Edmodo also has a like button similar to Facebook's, which was designed as a 'thumbs up' icon. In our example, students used this button to express that they liked notes shared by the teacher and other students.

Figure 6 below shows the percentages of likes sent by students in response to the teacher's posts.

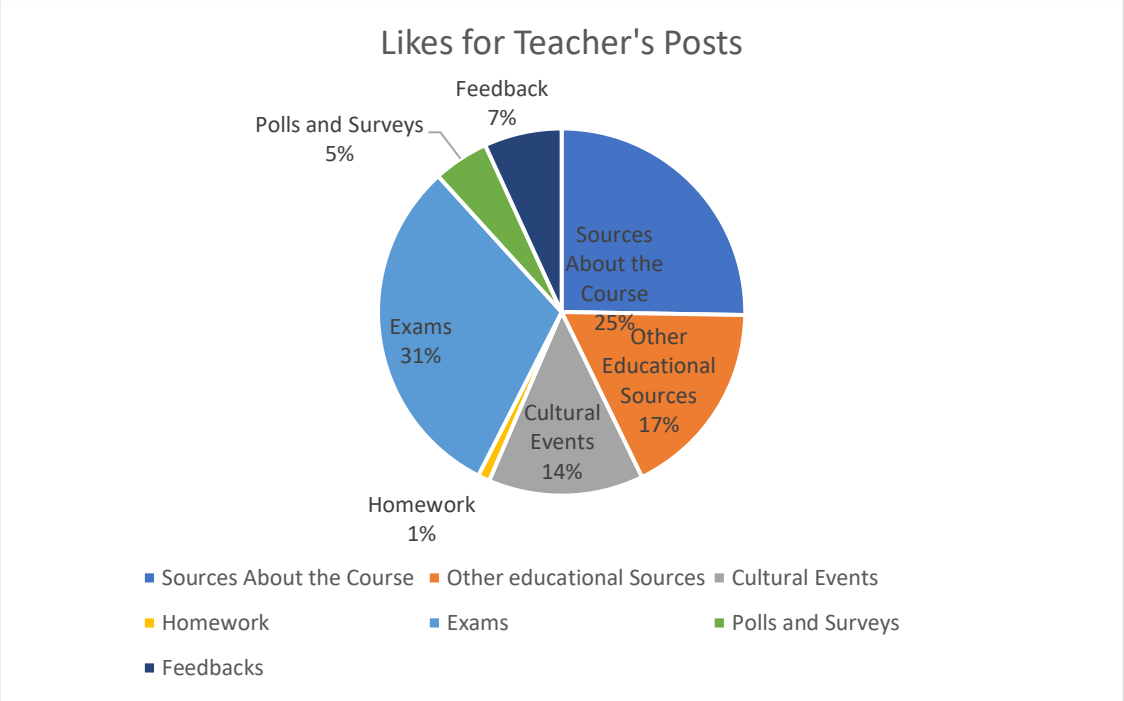

Figure 6: Likes for teacher's posts

As seen, the most liked posts on Edmodo were about exams. Students often liked written, audio and visual sources related to the course. They also sent likes to other educational sources. Cultural events were the third most liked topics after educational sources.

Students also liked the posts that were sent by their classmates. Figure 7 shows the percentages of likes sent by students to the other students' posts.

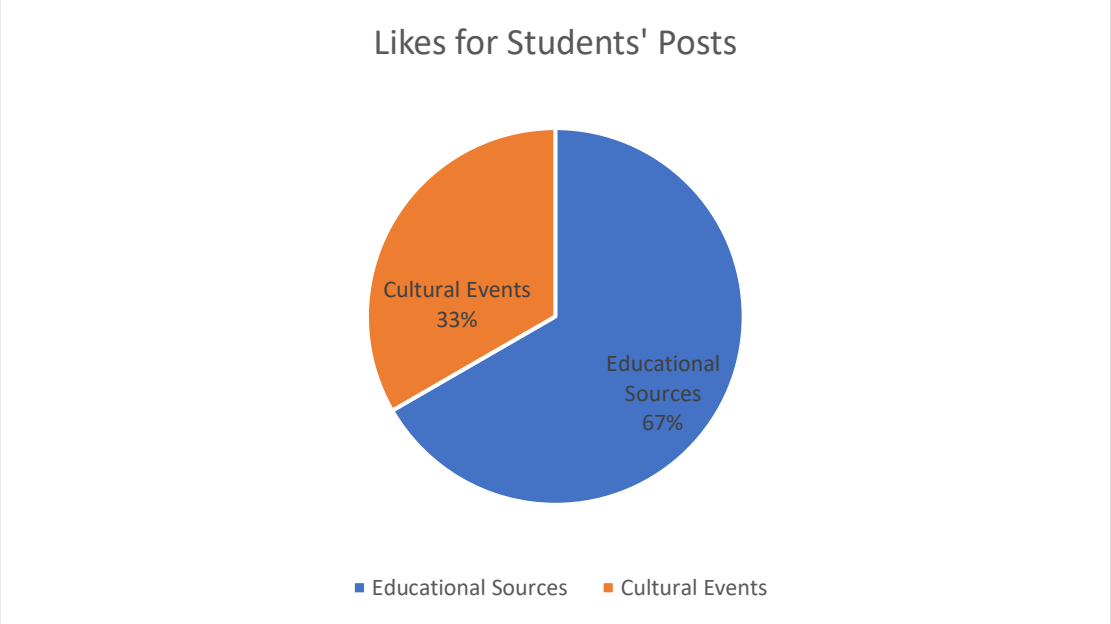

Figure 7: Likes for students' posts

As seen, students liked educational sources that were shared by their classmates students. Additionally, the posts about miniature paintings, television programs on Ottoman poetry, symposium and concert announcements had likes from the other students.

4.3.3. Emoticons

"The term emoticons – a blend of emotion and icons – refers to graphic signs, such as the smiley face, that often accompany textual computer-mediated communication" (Dresner & Herring, 2010). In this section, Yus's categorisation for the taxonomy of the functions of emoticons (Yus, 2014) will be used to classify emoticons.

Figure 8 shows the percentages of emoticons used by students.

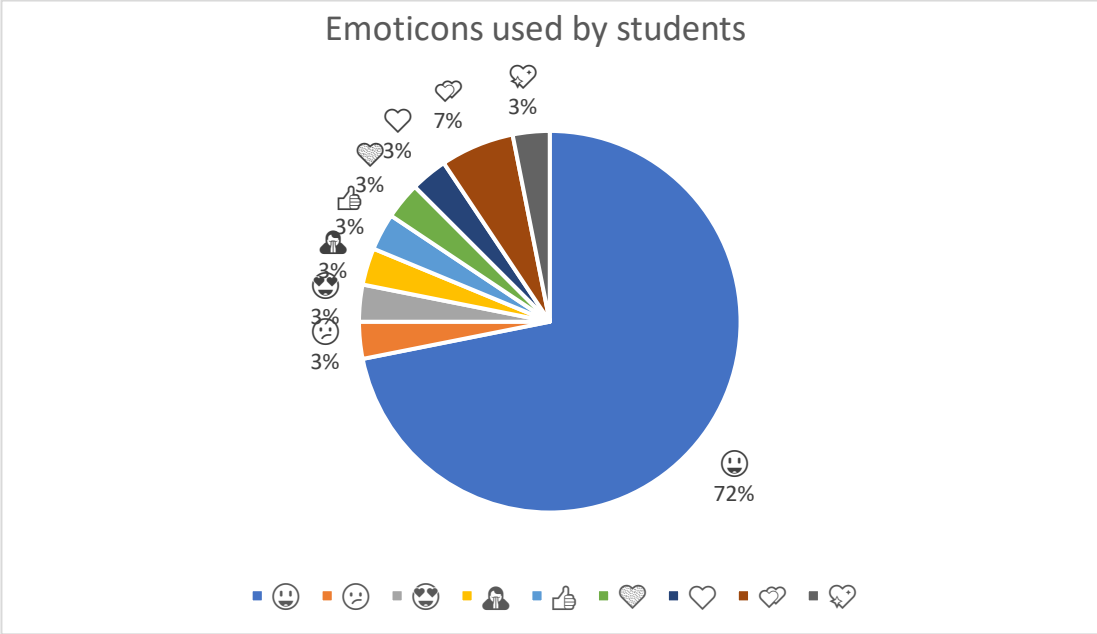

Figure 8: Emoticons used by students

The most-used emoticon by students was the 'smiling face' (😀). Most of them were used after saying 'thank you'. It was used after celebrating 'teacher's day' once. Sometimes it was used after a compliment or wishing someone well. They were used to add a feeling to the propositional content of the utterance. One student used this emoticon after his expression about 'agreeing'. Smiling faces were also used after the question, 'When will you announce the results? 😀', which were meant to soften the illocutionary force of speech acts. They were also used to contradict the explicit content of the utterance as a joke or irony: 'You will nearly make me interested in old literature 😀'.

Moreover, several heart emoticons were used by female students after compliments and 'thank you' messages. These were 'red heart' (❤️), 'blue heart' (💙), 'two pink hearts' (💞) and 'sparkling pink heart' (💖) emoticons. They were used after saying 'thank you' or expressing respect and admiration. A 'smiling face with heart-eyes' (😍) was also used for the same reason, which can categorise them as emoticons for enhancing the intensity of a feeling. Only once was one red heart emoticon used alone, without a comment, again, to express thankfulness. Another emoticon was the 'thumbs up' (👍) emoticon, which was used by a student to convey agreement. A 'confused face' (😕) emoticon was used only once to convey being disappointed about an event the student was unable to attend. The 'folded hands' (🙏) emoticon was used only once for saying 'thank you.' All had been coded in writing beforehand.

4.4. Students' Perceptions of Edmodo

Students also gave positive feedback about Edmodo. An open-ended survey question which asked "Do you think Edmodo promotes students' engagement in the course?" was answered by 37 students out of 163 (23%). Figure 9 shows the students' opinions about Edmodo in percentages.

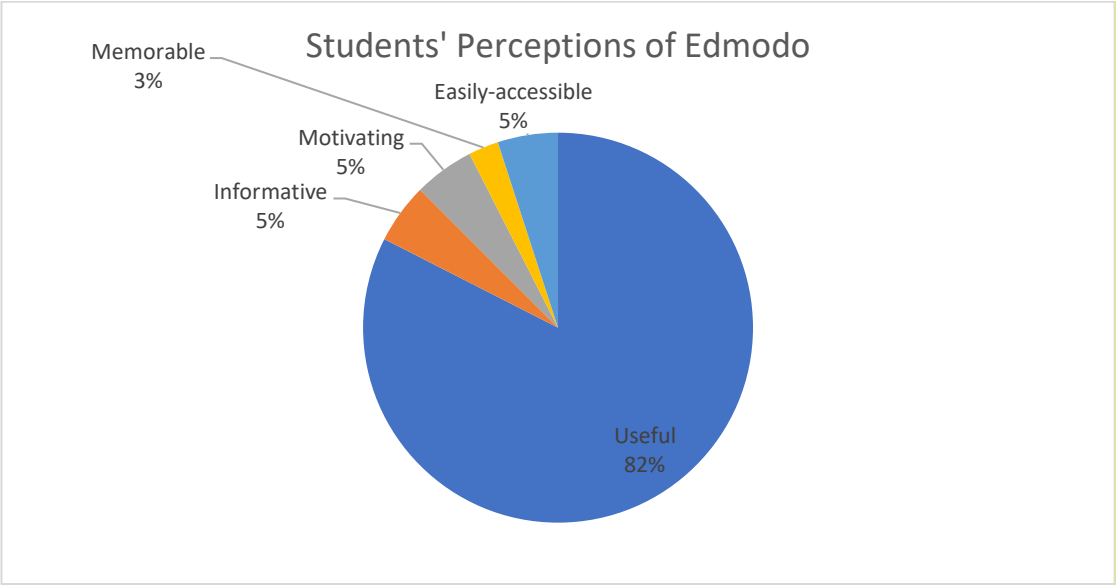

Figure 9: Students' perceptions of Edmodo

It can be seen that answers were positive about using Edmodo in the course, with 33 students (82%) reporting that Edmodo is very "useful." One student said that, even though s/he is not interested in Ottoman literature, sources shared on Edmodo can be useful for students who are interested. They also thought it should be used by other teachers. Three students said, "I wish other teachers in the department used Edmodo too." Another student considered Edmodo a social media tool and said, "It is my new social platform." Students also thought Edmodo was very "informative." A student said that with this tool, s/he "explored new things."

Another aspect of Edmodo is being "motivating." A student said, "Even though I don't want to read articles, when I see them on Edmodo, I would like to read [them]." Another student wrote that a poetry anthology shared on Edmodo caught his/her interest and s/he bought it. Edmodo also helped them remember content about the course. A student wrote, "Sharing photographs on Edmodo related to poems made the poems more memorable."

Furthermore, students found Edmodo very accessible. One student noted that the Edmodo application on her/his mobile phone "makes her/his travel to school more productive." Another student said, "We can access the documents about the class very easily on Edmodo."

To summarize, according to the survey, students agreed on the positive effects of Edmodo.

5. Discussion and Conclusion

Crowded classroom environments can cause a lack of communication between teachers and students in the university setting. Following specific curricula and having tight schedules can also negatively affect teachers. Moreover, a strict academic hierarchy and shyness or low self-confidence can discourage students from communicating with the teacher inside or outside of the classroom. In this situation, using Web 2.0 tools can be very beneficial for teachers and students. Edmodo is a highly convenient educational instrument when considered from this point of view.

In this case study, similar to the existing studies (Manowong 2016, Al-Said 2015, Balasubramanian et al. 2014, Mokhtar 2018), Edmodo helped the teacher to communicate with students and learn their thoughts, opinions, and expectations about the class. As undergraduate classes are very crowded at Istanbul University, teachers are not able to give students feedback about their exam results individually. However, this sometimes leads to incorrect learning or repeating the same mistakes. Giving feedback in the classroom is impossible because of the tight schedule, and it also embarrasses students. Edmodo was the perfect tool for handling such problems.

Moreover, Edmodo was very helpful for students who wanted to ask questions about the course or the exams. They also continued to learn after the class. It gave them an opportunity to obtain a certain number of educational sources, and it made them aware of current cultural events in their city. Moreover, they became involved in the decision-making process in regard to homework and exams through the polls on Edmodo.

However, when the posts, which were sent by the teacher and by the students were compared, it was seen that students were not eager to send a post. Based on these data, it can be considered that Edmodo reduced academic hierarchy and shyness among students in respect to communication with the teacher, but it didn't remove these factors completely. Students still didn't feel confident enough to send a new post, and they preferred replying to notes. Moreover, most students chose to express their opinions or thoughts with likes. The reason for this could be that pressing the like button is easier than sending a new post or replying to a post, especially for shy students.

In conclusion, the main contribution of this study is that communication through Edmodo was categorized as teacher- and student-initiated to show the differences. Interaction was also classified and analysed under the titles of replies, likes, and emoticons.

However, there were some limitations to this study. One is that the practice was carried out over one term. Further studies can be executed for longer periods. Another is this study was limited to one course at the Turkish Language and Literature Department in Istanbul University. Future research can focus on additional classes from various departments to compare findings.

6. Conflict of Interest

The author declares that there is no conflict of interest.

7. Ethics Committee Approval

The author confirms that the study does not need ethics committee approval according to the research integrity rules in their country.

References

Al-Said, Khalel M. (2015). Students' Perceptions of Edmodo and Mobile Learning and Their Real Barriers Towards Them, *The Turkish Online Journal of Educational Technology*, 14 (2): 167-180.

Balasubramanian, K., Jaykumar V., Fukey, L. (2014). A Study on "Student preference towards the use of Edmodo as a learning platform to create responsible learning environment", *Procedia-Social and Behavioral Sciences*, 144 :416-422.

Berners-Lee, T.J., Cailliau R., Groff J.F. (1992). The World Wide Web. Computer Networks and ISDN Systems, 25: 454-459.

Carlson, G. & Raphael R., (2015). *Let's Get Social: The Educator's Guide to Edmodo*. Eugene: International Society for Technology in Education.

Dijck, Jose Van (2013). *The Culture of Connectivity: A Critical History of Social Media*. Oxford: Oxford University Press.

Dresner, E., Herring S. C. (2010), Functions of the Nonverbal in CMC: Emoticons and Illocutionary Force. *Communication Theory*, 20: 249-268.

Edmodo website (n.d) https://www.edmodo.com/ Accessed 25.11.2018

Hamutoğlu Nazire Burcin and Mübin Kıyıcı (2017). Bir Eğitsel Sosyal Ağ Olarak Edmodo'nun Yükseköğretimde Kullanımına Yönelik Öğrenci Görüşlerinin İncelenmesi, *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, 7 (2): 322-343.

Harasim, Linda (2006). A History of E-Learning: Shift Happened. In J. Weiss, J. Nolan, J. Hunsinger & P. Trifonas (Eds.), *The International Handbook of Virtual Learning Environments*, 59-94. Dordrecht: Springer.

Hope, John K. (2010). Technological Trends in Adult Education: Past, Present and in the Future. In Khosrow-Pour (Ed), *Web-based Education: Concepts, Methodologies, Tools and Applications*, 1: 9-27. Hershey: Information Science Reference.

Kidd, T., Chen I. (2009). *Wired for Learning: An Educators Guide to Web 2.0*. Charlotte: Information Age Publication.

Kidd, Terry T. (2010). A Brief History of eLearning. In Khosrow-Pour (Ed), *Web-based Education: Concepts, Methodologies, Tools and Applications*, 1: 1-8. Hershey: Information Science Reference.

Manowong, Supaporn. (2016). Undergraduate Students' Perceptions of Edmodo as a Supplementary Learning Tool in an EFL Classroom, *Silpakorn University Journal of Social Sciences, Humanities and Art*, 16 (2): 73-92.

Mokhtar, F. A. (2018). Breaking Barriers Through Edmodo: A Qualitative Approach on the Perceptions of University of Malaya Undergraduates. *Online Learning*, 22 (1): 61-80.

Nicholson Paul. (2007). A History of E-Learning. In Fernandez-Manjon, Sanchez-Perez, Gomez-Pulido, Vega-Rodriguez, Bravo-Rodriguez (eds.), *Computers and Education: E-Learning from Theory to Practice*, 1-12. Dortrecht: Springer.

O'Reilly, Tim. (2009). *What is Web 2.0? Design Patterns and Business Models for the next Generation of Software*. Available at https://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html Accessed 1.12.2018

Oyelere, S., Palikztzoglou V., Suhonen J. (2016). M-learning in Nigerian Higher Education: An Experimental Study with Edmodo. *International Journal of Social Media and Interactive Learning Environments*, 4 (1): 43-62.

Patrut M. & Patrut B. (2013). *Social Media in Higher Education: Teaching in Web 2.0*. Hershey: IGI Global.

Richardson, Will. (2006). *Blogs, Wikis, Podcasts and Other Powerful Web Tools for Classrooms*. California: Corwin.

Solomon, G. & Schrum L. (2007). *Web 2.0. New Tools, New Schools*. Eugene: International Society for Technology in Education.

Strobbe, M., Van Laere, O., Dauwe, S., Dhoedt, B., De Turck, F., Demeester P. (2010). Internet based selection of user generated content for rich communication services. *Journal of Network and Computer Applications*, 33(2): 84-97.

SurveyMonkey website (n.d) https://www.surveymonkey.com/ Accessed 25.11.2018

Tavukcu, Tahir (2018). The Impact of Edmodo Assisted Education on Project Evaluation Achievement Scores and Determination of Opinions for Use in Education. *TEM Journal*, 7 (3): 651-657.

Teyfur, E., Ozkan, A., Teyfur, M. (2017). An Analysis on the Use of Educational Social Networking Sites in the Course Activities of Geography Department Students: Edmodo Sample. *Universal Journal of Educational Research*, 5 (12): 2341-2348.

Urdan, T. A. & Weggen C. C. (2000). *Corporate E-Learning: Exploring A New Frontier*. San Francisco: WR Hambrecht Co.

Uzun, Erman (2015). Students' Attitude Towards Edmodo as a Supplementary Tool for Higher Education. *Participatory Educational Research*, Special Issue II: 78-83.

Yus, Francisco (2014). Not All Emoticons Are Created Equal. *Linguagen en (Dis)curso*, 14 (3): 511-529.