

Analysis of the Use of Web 2.0 Tools in Educational Environments in Turkey

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Abstract: Rapid technological advances affected the field of education, as well as other fields. This fact creates the need of utilizing technology in education effectively. Another fact that emerges when the subject of education in technology is considered is Web 2.0 tools. Along with Web 2.0 technology, students get more active in education instead of remaining passive, and become more productive and more willing to share. In this study, MA and PhD theses focusing on Web 2.0 technology which are published on Council of Higher Education National Thesis Center database between the years 2010 and 2020 were investigated according to content analysis method. In this sense, 44 of the theses which were reached as a result of the review of the related database were analyzed under the categories of thesis type, thesis year, the university it was carried out, its language and the subject it reviewed. It was revealed as a result of the investigation of the theses that Turkish language is the most used language in the theses, that the subject drew more attention especially in 2019 as the number of the studies on the subject of Web 2.0 tools increased in the recent years, and that the number of the studies carried out in the state universities is more than the number of the studies carried out in private universities.

Keywords: Web 2.0 tools, Education technology, Content analysis

Introduction

With the increasing use of online communication tools today, the amount of freely accessible online information created by web users is also increasing. The increase in these tools and, accordingly, in the information produced with the help of these tools also affects the way teachers and students interact (Aktürk, Çelik, Şahin, & Deniz, 2014; Aktürk, Emlek, & Çelik, 2017). Today's web environment has become more than just an information repository or a platform to look for resources. With the advent of Web 2.0, we can say that the internet has now turned into a global network of interconnected learning communities. With this transformation, the web environment has become a platform where content is created, shared, remixed, rearranged, and

exchanged rather than an environment where information is just transmitted and consumed (Ajjan & Hartshorne, 2008; Altun, 2008; Yuen, Yaoyuneyong, & Yuen, 2011).

The ability to benefit from the collective intelligence and knowledge of its users is the first of the main features that make Web 2.0 applications unique. Using Web 2.0 applications, every user has the right to create content, and thus, with the participation of other users from all over the world, they become part of a global network of people where they can use their collective knowledge, intelligence, and skills in a way never before possible. Through Web 2.0 applications, students can interact with other students, benefit from shared experiences, and continually build their own knowledge. In this way, students will not be passive recipients of information and can become equal partners in the learning process as they create their own knowledge by collaborating in a social way (Heafner & Friedman, 2008). This situation provides quite new opportunities for teachers to be able to teach more effectively (Yuen, Yaoyuneyong, & Yuen, 2011). Simply put, when Web 2.0 tools are effectively integrated into the classroom, student-centered pedagogy becomes the norm. In this way, while increasing their high-level thinking skills, students can improve their cooperation with other students and at the same time, they can build their own knowledge (Adcock & Bolick, 2011). In addition, the collaborative nature of Web 2.0 forces students to take multiple perspectives into account (Bull, Hammond, & Ferster, 2008). Considering all these, Web 2.0 technology should be seen as a technological move that supports changes and developments in education and should be included more in educational environments (Elmas & Geban, 2012).

With the development of Internet technologies, Web 2.0 applications stand out with their innovations that will completely change the use of the Internet. Web 2.0 allows a person to create content on the Internet comfortably and easily and enables cooperation and social interaction to emerge automatically thanks to its ease of use (Atıcı & Yıldırım, 2010). In this context, Web 2.0 can be defined as a user-centered new generation internet platform that offers its users freedom of action and allows them to contribute to the content (Genç, 2010). However, as a result of the literature review, it is noteworthy that there is a limited number of literature review studies conducted within the scope of educational use of Web 2.0 tools. In the research conducted by Korucu and Gündoğdu (2014), 38 studies were examined. In the related research, the subjects such as the journals in which the studies are published widely, the preferred topics and the distribution of the topics according to the years, the methods used, and the distribution of the methods according to the topics, and the sample characteristics were focused on. As a result of the research, it was stated that most of the studies were published in 'Akademik Bilişim' conferences, and it was stated that the studies mainly focused on the use of Web 2.0 and opinions about it and educational practices related to social networks. In addition, it was stated in the research that most of the studies on the use of Web 2.0 applications were carried out with undergraduate students, and surveys and documents were mainly used as data collection tools in the studies.

It has been seen that examining and interpreting different studies conducted on the use of Web 2.0 tools for educational purposes has made a great contribution to the literature. The research examining the studies on Web 2.0 tools (Korucu & Gündoğdu, 2014); while presenting a summary of the studies conducted so far, it is thought that similar research will shed light on related future studies from different perspectives. For this purpose, in this

study, master's and doctoral theses in the database of YÖK (Turkish Republic's Council of Higher Education) National Thesis Center between 2010-2020 regarding the use of Web 2.0 tools for educational purposes were examined with the content analysis method to reveal the descriptive features and general tendencies of these theses. In line with this general purpose of the research, answers to the following questions were sought.

1. What is the distribution of theses by their types?
2. What is the distribution of theses by their years?
3. What is the distribution of the theses by the universities where they were prepared?
4. What is the distribution of theses by their languages?
5. What is the distribution of the topics covered in the theses?

Method

In this study, the use of Web 2.0 tools for educational purposes was investigated with the document analysis method, one of the qualitative research designs. Regarding the use of Web 2.0 tools for educational purposes, master's and doctoral theses in the database of YÖK National Thesis Center between 2010-2020 were handled by content analysis method. Content analysis is to bring together similar data using certain themes and concepts, and to organize and interpret them in a way that readers can understand (Yıldırım & Şimşek, 2006).

Scope of the Research

The scope of this research consists of master's and doctoral theses about Web 2.0 Technology in the database of YÖK National Thesis Center. In order to determine the theses to be included in the research, the filtering process was carried out in the YÖK National Thesis Center using the keyword "Web 2.0", which is frequently used in the literature. After the filtering process, the master's and doctoral theses studied between the years 2010-2020, selected by purposive sampling technique, were collected in a single folder, and duplicate studies were deleted and a total of 44 studies were included in the research.

Data Collection Tools

After a process of reconstitution, the "Thesis Classification Form (TCF)" developed by Hebebcı, Çelik, and Şahin (2016) was used for Web 2.0 technologies research.

Analysis of Data

The data obtained from the studies examined by the content analysis were analyzed using percentage and frequency values. Regarding the obtained data, the frequencies and percentages were calculated to correspond to the answer to each research question. The resulting data has been tabulated.

Results

The collected data were analyzed considering the research questions.

Distribution of the Theses by Their Types

By examining the theses prepared between 2010 and 2020, the distribution of 44 studies on the use of Web 2.0 technology in educational environments according to their types is shown in Table 1.

Table 1. Distribution of the Theses by Their Types

| Thesis Types | N | % |
|-----------------|----|-----|
| Master's Thesis | 41 | 93 |
| Ph.D. Thesis | 3 | 7 |
| Total | 44 | 100 |

When Table 1 is examined, it is seen that a significant number of theses consist of master's theses (n=41; 93%). Contrarily, it is revealed that Ph. D. theses (n=3; 7%) are very few numbers.

Distribution of Theses by Their Publication Years

When Figure 1 is examined, 1 study in 2010, 5 in 2011, 2 in 2012, 3 in 2013, 3 in 2014, 3 in 2015, 1 in 2016, 6 in 2017, 1 in 2018, 12 in 2019, and 7 of the studies were carried out in 2020. 44 theses in total; 41 of them are master's and 3 of them are doctoral dissertations. It is seen in the figure that Ph. D. The theses were published in 2011, 2015, and 2017. It has been observed that studies on this subject have been carried out regularly since 2010. The fact that the interest in Web 2.0 technology is increasing day by day with the opportunities brought by today's technology is also supported by this result.

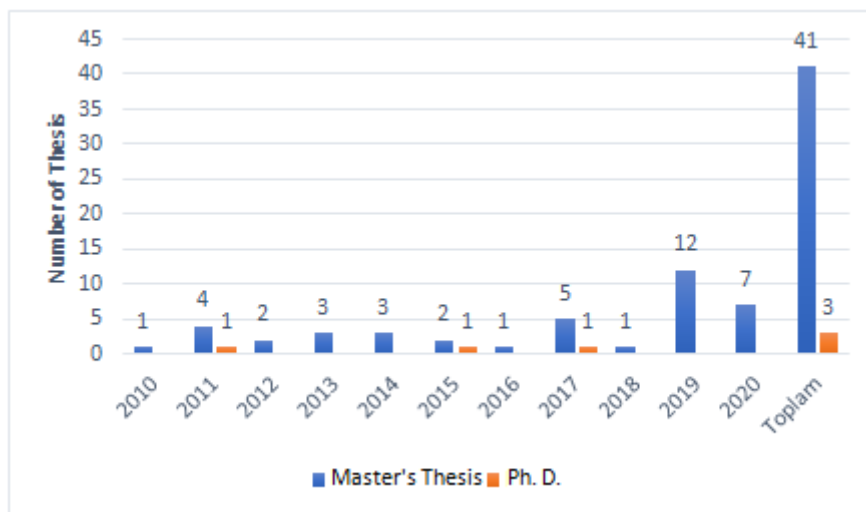


Figure 1. Distribution of Theses by Years

Distribution of Theses by Universities

When Table 2 is examined, it is observed that universities are close to each other in terms of the number of theses produced on this subject. In this context, the theses related to the use of Web 2.0 tools in educational environments were conducted in Middle East Technical University (n=4), Hacettepe University (n=3), Akdeniz University (n=3), Dokuz Eylül University (n=2), Gazi University (n=3), Bahçeşehir University (n=2), Aksaray University (n=2), Çağ University (n=2), Anadolu University (n=2), Çanakkale Onsekiz Mart University (n=2), Balıkesir University (n=2), Marmara University (n=2), Çukurova University (n=2), Bilkent University (n=2) and 12 other universities.

Table 2. Distribution of Theses by Universities

| Universities | N |
|------------------------------------|----|
| Middle East Technical University | 4 |
| Akdeniz University | 3 |
| Hacettepe University | 3 |
| Aksaray University | 2 |
| Anadolu University | 2 |
| Bahçeşehir University | 2 |
| Balıkesir University | 2 |
| Bilkent University | 2 |
| Çanakkale On Sekiz Mart University | 2 |
| Çağ University | 2 |
| Çukurova University | 2 |
| Dokuz Eylül University | 2 |
| Gazi University | 2 |
| Marmara University | 2 |
| Cumhuriyet University | 1 |
| Dicle University | 1 |
| Dumlupınar University | 1 |
| Düzce University | 1 |
| Ege University | 1 |
| İnönü University | 1 |
| Mevlâna University | 1 |
| Necmettin Erbakan University | 1 |
| Sakarya University | 1 |
| Trabzon University | 1 |
| Yıldız Teknik University | 1 |
| Zonguldak Karaelmas University | 1 |
| Total | 44 |

Distribution of Theses by Their Languages

The theses examined were written in two different languages, Turkish and English. But when Table 3 is examined, it is noteworthy that most of the theses were written in Turkish (n=30; 68%). The low number of theses in English (n=14; 32%) can be explained by the insufficiency of language education in our country and the fact that most of the universities where theses are prepared to have Turkish as their language of instruction. Another prominent finding is that almost all of the universities where these were written in English provide education in English and some of them have the status of foundation universities.

Table 3. Distribution of Theses by Their Languages

| Language | N | % |
|----------|----|-----|
| Turkish | 30 | 68 |
| English | 14 | 32 |
| Total | 44 | 100 |

Distribution of Topics Covered in Theses

When Table 4 is examined, it is noteworthy that the thesis topics are mainly focused on the effects of Web 2.0 tools on attitudes and academic achievement (n=17; 38%) and the use of Web 2.0 and opinions about it (n=13; 30%). These topics are followed by educational practices related to the semantic web (n=8; 18%), educational practices with social networks (n=4; 9%), and other topics (n=2; 5%).

Table 4. Distribution of Topics Covered in Theses

| Topic | N | % |
|---|----|-----|
| The Effect of Web 2.0 Tools on Attitudes and Academic Achievement | 17 | 38 |
| Web 2.0 Usage and Opinions About It | 13 | 30 |
| Educational Applications Related to Semantic Web | 8 | 18 |
| Educational Applications Related to Social Networks | 4 | 9 |
| Other | 2 | 5 |
| Total | 44 | 100 |

Discussion, Conclusion and Recommendations

In this study, the theses published in the YÖK National Thesis Center on the use of Web 2.0 in educational environments were examined. The analyses were made in a way to deal with the type, year, university, language, and topics covered by the theses. Each research question within the scope of the research was handled one by one and examined in detail.

As a result of the research, it is observed that Web 2.0 technology in education is a subject that has attracted the attention of researchers in recent years and is being studied more and more each year. According to the research findings, it is seen that the studies have increased significantly especially in 2019. It can be thought that this situation is due to the widespread use of the internet and technology in recent years. However, in the light of the theses examined, it is noteworthy that the subject is handled much more in master's theses (n=41) than in Ph. D. theses (n=3). This situation can be explained by the fact that the time required to produce doctoral theses, which should be more qualified and equipped compared to master's theses, is not sufficient, considering that technology has become widespread in education in recent years.

When the theses are considered by the universities they are conducted, it has been found that they have mostly been studied in state universities and that foundation universities haven't hosted much research on the use of Web 2.0 tools in education. At the same time, when the university repertoire is examined, it has been revealed that the universities working on this subject are not very diverse. Considering these situations, it is thought that it will be beneficial if other universities also conduct studies on this subject in the coming years.

When the languages of the theses are examined in the research, it is observed that 30 studies are in Turkish and 14 studies are in English. The fact that the majority of theses prepared in English were prepared in foundation universities or universities where the language of instruction is English shows that the language of instruction is a factor that can also affect the preferred language in theses. In parallel with the study of Korucu and Gündođdu (2014), it is determined that the majority of the publication languages in this study were Turkish. It is thought that it will be beneficial to the literature to carry out studies by paying attention to this situation in future studies.

According to the results of the research, the effects of Web 2.0 tools on attitudes and academic achievement and the use of Web 2.0 and opinions about it were chosen as the subject in the theses prepared on the use of Web 2.0 tools in education. It is observed that this situation produced a result contrary to that obtained from the study of Topuz, Yıldırım, Topu and Göktaş (2015). In parallel with the study of Korucu and Gündođdu (2014), this study it is determined that there have not been many studies on blogs and wikis, which are Web 2.0 technologies. It is thought that considering this situation in future research will be beneficial in terms of enriching the studies in the field.

References

- Adcock, L., & Bolick, C. (2011). Web 2.0 tools and the evolving pedagogy of teacher education. *Contemporary Issues in Technology and Teacher Education, 11*(2), 223-236.
- Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education, 11*(2), 71-80.
- Aktürk, A. O., Çelik, İ., Şahin, İ., & Deniz, M. E. (2014). Facebook Bağlanma Stratejileri Ölçeğinin Türkçe uyarlama çalışması. *İlköğretim Online, 13*(1), 319-333.

- Aktürk, A. O., Emlek, B., & Çelik, İ. (2017). Üniversite öğrencilerinin facebook bağlanma stratejilerinin ve yaşam doyumlarının incelenmesi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 13(2), 512-530.
- Altun, M. (2008). *İlköğretim İkinci Kademe (6, 7 ve 8. Sınıflarda) Matematik Öğretimi* (6. Baskı). Bursa: Aktüel Yayınları.
- Atıcı, B., & Yıldırım, S. (2010). Web 2.0 uygulamalarının e-öğrenmeye etkisi. *Akademik Bilişim'10-XII. Akademik Bilişim Konferansı Bildirileri, 10-12 Şubat 2010*. Muğla Üniversitesi, Muğla.
- Bull, G., Hammond, T., & Ferster, B. (2008). Developing Web 2.0 tools for support of historical inquiry in social studies. *Computers in the Schools*, 25(3/4), 275-287.
- Elmas, R., & Geban, Ö. (2012). Web 2.0 tools for 21st century teachers. *International Online Journal of Educational Sciences*, 4(1), 243-254.
- Genç, Z. (2010). Web 2.0 yeniliklerinin eğitimde kullanımı: Bir Facebook eğitim uygulama örneği. *Akademik Bilişim'10-XII. Akademik Bilişim Konferansı Bildirileri, 10-12 Şubat 2010*. Muğla Üniversitesi, Muğla.
- Heafner, T., & Friedman, A. (2008). Wikis and constructivism in secondary social studies: Fostering a deeper understanding. *Computers in the Schools*, 25(3/4), 288-302.
- Hebecci, M. T., Çelik, İ., & Şahin, İ. (2016). Eğitim ortamlarında etkileşimli tahta kullanımı: Araştırmalar ve eğilimler. *Eğitim, Bilim ve Teknoloji Araştırmaları Dergisi*, 1(1), 55-76.
- Korucu, A. T., & Gündoğdu, M. M. (2014). Eğitim teknolojilerinde Web 2.0 kullanımı 2007–2015 Dönemi makalelerin içerik analizi. *Journal of Turkish Science Education*, 11(1), 3-23.
- Topuz, A. C., Yıldırım, Ö., Topu, F. B., & Göktaş, Y. (2015). Öğrenme teorileri üzerine inşa edilen Web 2.0 uygulamaları: Science Direct veri tabanı incelenmesi. *Bilişim Teknolojileri Dergisi*, 8(2), 59-69.
- Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (14. baskı). Ankara: Seçkin Yayıncılık.
- Yuen, S. C. Y., Yaoyuneyong, G., & Yuen, P. K. (2011). Perceptions, interest, and use: Teachers and web 2.0 tools in education. *International Journal of Technology in Teaching & Learning*, 7(2), 109-123.