Prospective Teachers' Metaphors as a Lens to Understand How They Perceive 'Web 2.0'

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Abstract

Technology should be used in teaching and learning in universities. It is seen that studies on the use of Web 2.0 tools in education faculties are limited. Teachers who will integrate information and communication technologies into education at schools must first of all have prerequisite knowledge and skills on this subject. However, the effective use of technological tools in learning environments also depends on teachers' perspectives on technology. This study aimed to determine the perceptions of pre-service teachers towards Web 2.0 applications through metaphors. The authors of the study effectively used web 2.0 tools during the semester in Educational Sociology, Attention Deficit and Hyperactivity, and Integration in Special Education courses. In the study, phenomenology design, one of the qualitative research approaches, was used, and semi-structured interview form was used to collect the data. Participants of the study consisted of 123 pre-service teachers who took this course. In light of the findings, it was observed that the majority of the participants (98%) used positive metaphors about Web 2.0 applications, and 2% used negative metaphors. Metaphors were then classified into 7 categories and tables were created. Categories 'Web 2.0 as a source and producer of information,' 'Web 2.0 as a measurement and evaluation tool,' 'Web 2.0 as an Innovation and Development Platform,' 'Web 2.0 as a social / fun environment,' 'Web as a helpful and supportive platform 2.0,' 'Web 2.0' and 'other' as a stimulating and relaxing platform. The abstract is to be in fully-justified text. Use the word 'Abstract' as the title, in 11-point Times, bold, initially capitalized. The abstract is to be in 10-point, single-spaced type, and up to 200 words in length.

Keywords: Candidate Teacher, metaphor, Web 2.0, qualitative, phenomenology

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1. Introduction

21st century skills are considered in three main dimensions. These are basic literacy, competencies and character traits. In our century, which is the age of technology, one of the most important topics in terms of basic literacy is technological and digital literacy. The main platform for creativity, communication and collaboration within the competencies has also been the technological field. In terms of character traits and values, technology addiction and use outside of its purpose have become one of the serious problems. Considering the fact that technology shapes the basic goals in many dimensions of education, it is inevitable to use it in teaching activities, that is, in the transfer dimension. The use of technology in teaching from preschool to basic education, from secondary education to higher education has become a necessity and often a necessity beyond need. Therefore, technology should be used in teaching and learning processes in universities as a requirement and characteristic of modern higher education (Selwyn, 2016). While the use of technology in teaching and learning processes may be the main element of teaching as in flipped classrooms, it can sometimes be used in the evaluation of teaching through research assignments or in-class and out-of-classroom tools and activities. Many factors guide the inclusion of web tools, which constitute an important part of these technologies, into education systems and initiatives to integrate these tools into higher education.

Web-based teaching and research: It is important because it is interactive and keeps up to date on the relevant topic. The most important feature of web technology is its interaction and this feature attracts educators all over the world (Tyagi, 2012). Modern technologies have a great potential in terms of providing rich learning opportunities to students

and motivating students when they are integrated into educational environments in a careful and planned manner. One of these technologies is Web 2.0 technologies, which have a high potential to be used in educational environments with many tools they contain. These technologies are 'technologies aiming to increase creativity, information sharing and cooperation among users' (Tu, Blocher & Ntoruru, 2008, p. 336; as cited: Aytan & Başal, 2015). Web 2.0 is a term often associated with the social use of the WEB, which allows people to collaborate in a wide range of areas, actively participate in the process and evaluation for content creation, generate knowledge and share information online.

Web 2.0 tools are an umbrella concept that offers a suitable environment and opportunity for multiple participation to form constructivist learning activities (Çelik, 2020). Web 2.0 application, a concept that was brainstormed in a conference session, was first used by Tim O'Reilly in 2004 (O'Reilly, 2005).

New technologies such as Web 2.0 tools enable the creation, development and implementation of information, communication, social interaction, new business and learning opportunities much more easily than previous technical structures (Nichol, Hunter, Yaseen, & Prescott-Clements, 2012). It covers online communities, online gaming, instant messaging blogs, microblogs, forums, group software, peer-to-peer and media sharing technologies, e-mails, virtual worlds, messaging and all social networking sites. With the emergence of Web 2.0, students now not only can access and search information from existing internet sources, but also collaborate and create new information on the internet (Richardson, 2006).

Using Web 2.0, new learning opportunities and places are created. Web 2.0 tools are capable of overcoming barriers related to the cultural and economic situation. Low-cost or no-cost software and tools enable schools, teachers and students to use developing technologies regardless of their location and budget. In addition, ease of use and speed of development and deployment of Web 2.0 technologies encourage strong instant information sharing and increasing collaboration (Holcomb & Beal, 2010).

According to Bower, Hedberg and Kuswara (2010), the basic categories of Web 2.0 tools include social bookmark, wikis, shared document creation, blogs, microblogs, online presentation, image creation and editing, podcast, video editing and sharing, display recording, mind mapping and digital storytelling.

Turkey also draws attention that the working environment for integrating technology in education. Statements in both 21st Century skills and 2023 vision documents are the clearest indicators of this. Also included in the curriculum Turkish Qualifications Framework, one of the eight key competences 'access to information, evaluation of information, storage, production, presentation and use of computers for shopping is also supported by basic skills such as ensuring participation in collaborative networks via the Internet and to communicate' (Ministry of National Education, 2018, p. 5) emphasizes the direct acquisition of digital skills.

Teachers who will integrate information and communication technologies into education in schools must first have the prerequisite knowledge and skills themselves (Cope & Ward, 2002; Galanouli, Murphy, & Gardner, 2004; Jedeskoğ & Nissen, 2004; Çelik, 2020). However, the effective use of technological tools in learning environments also depends on teachers' perspectives on technology (Becker, 1994; Christensen, 2002; Hew & Brush, 2007).

The word metaphor, which has been emphasized in many studies, emerged with the differentiation of the Greek word 'metapherein.' Meta means 'change' and 'pherein' means 'endure' (Levine, 2005; cited in: Ekici, 2016). Metaphors can be defined as 'the conceptual responses in the minds of individuals towards the elements in question, which enable them to determine their perceptions and attitudes about any concrete or abstract phenomenon, situation and process.'

In this study, it was aimed to determine the perceptions of pre-service teachers about Web 2.0 applications through metaphors, and in this direction, answers to the following questions were sought:

1. With which metaphors do the preservice teachers explain their perceptions towards Web 2.0 applications?
2. Under which conceptual categories can the metaphors that pre-service teachers developed for Web 2.0 applications be categorized in terms of common features?
3. How is the distribution of metaphors in the conceptual categories created?

2. Method

In this study, since the perceptions of pre-service teachers regarding Web 2.0 applications were examined, phenomenology design was used as a qualitative research approach. The phenomenology pattern aims to reveal the phenomena that are known but do not have an in-depth and detailed understanding (Yıldırım & Şimşek, 2011: 72). The study aims to examine pre-service teachers' perceptions of Web 2.0 applications through metaphors. Metaphors are 'mental tools that make sense, direct and control our thoughts about the formation and functioning of processes, events and phenomena. Metaphors both make our thoughts lively and interesting and structure our perceptions and perspective (Lakoff & Johnson, 2005). In this study, pre-service teachers' perceptions of 'Web 2.0' applications, the meanings they attribute to the concept and the expressions they put forward as the reasons for creating and using these meanings were examined and investigated.

2.1. Participants

Participants of the study were teacher candidates studying at Necmettin Erbakan University Faculty of Education. Participants of the study were selected from purposeful sampling types, using an easily accessible sampling method, based on the availability and voluntariness of the participants. There were a total of 123 participants in the study group of the research, 70 of which were women and 53 of them are men. These participants consisted of pre-service teachers studying in 10 departments of education faculties. The average age of the participants is 21.34 ± 4.86 . The authors of the study effectively used Web 2.0 tools during the semester in Educational Sociology, Attention Deficit and Hyperactivity and Integration in Special Education courses. Participants of the study were composed of pre-service teachers who took this course. The sample included participants who agreed to take part in the research process voluntarily.

2.2. Data Collection

A semi-structured interview form was used to collect the data. In the preparation of this form, the literature was reviewed and the qualitative semi-structured interview forms used in studies on metaphors were taken as a basis (Lakoff & Johnson, 2005; Yıldırım & Şimşek, 2011). In this context, in the form of the interview metaphor, 'Web 2.0 applications are like.....' 'because .....' expressions requiring first to give answers stating the analogy and then the reason for the analogy was used. In these forms, the meaning of the word 'metaphor' is given briefly in order to prevent any misunderstanding and to help the participants to produce metaphors as objects and names. In the study, all 123 participants completely filled in the Web 2.0 Metaphor form.

2.3. Reliability, Validity and Data Analysis

Through metaphors, a holistic understanding has emerged with a reflective approach between data collection and data analysis. In this study, in which the metaphors developed by pre-service teachers studying at the faculty of education were examined in depth, the content analysis method was used to analyse the data. In this process, the answers given by the participants and their reasons were examined as metaphors in the questionnaires at the first stage. Nodes were formed according to their common features by bringing similar expressions side by side. It was tried to be modelled by coding according to the categories created in the light of these nodes. Two assessors took part in this phase. The coefficient of concordance of the evaluators' evaluations regarding the consistency of the metaphors that emerged with the reactions of the participants was calculated and found to be 0.91. According to this finding, the coding reliability of the questionnaire was found to be high. In addition, evaluators created conceptual categories by bringing together metaphors with similar characteristics. The research systematic of Arthur, Patton and Giancarlo (2007) and Miles and Huberman (1994) were followed in the creation of conceptual categories. In this context, 7 categories were created by the evaluators based on the answers of the participants in the study. These are 'Web 2.0 as a source and producer of information,' 'Web 2.0 as a measurement and evaluation tool,' 'Web 2.0 as an Innovation and Development Platform,' 'Web 2.0 as a social/fun environment,' 'Web as a helpful and supportive platform 2.0,' 'Web 2.0 as a stimulating and relaxing platform' and 'other.' In order to ensure the validity of the study, expert opinions and direct citations of the participants were included in each category.

3. FINDINGS

In this section, the findings regarding the metaphors that the teacher candidates developed about 'Web 2.0 applications' are presented in tables according to sub-goals. The metaphors of the pre-service teachers about the Web 2.0 application can be seen in Table 1.

Table 1. The metaphors the preservice teachers produced for the Web 2.0 application

N	Metaphors	-f-	%	N	Metaphors	-f-	%
1	Game	12	9.23	31	A disabled person	1	0.77
2	Teacher	10	7.69	32	Track suit	1	0.77
3	Assistant	10	7.69	33	Different	1	0.77
4	Entertainment additive	6	4.62	34	Lantern and chess	1	0.77
5	Food	5	3.85	35	Future	1	0.77
6	Savior	5	3.85	36	Life	1	0.77
7	Examination paper	6	3.85	37	Attractive	1	0.77
8	A social person	5	3.85	38	Coffee	1	0.77
9	Another creative dimension of technology	4	3.08	39	It is like a heart.	1	0.77
10	Information machine	3	2.31	40	Door	1	0.77

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11	It is like mock exams.	3	2.31	41	Light in the dark	1	0.77
12	Like a racing game	3	2.31	42	Magnet	1	0.77
13	Water	3	2.31	43	Happiness	1	0.77
14	Questionnaire	2	1.54	44	Music	1	0.77
15	Useful	2	1.54	45	School	1	0.77
16	Facilitator	2	1.54	46	Online Education	1	0.77
17	Like a leader	2	1.54	47	Market place	1	0.77
18	Like a funfair	2	1.54	48	Bus card	1	0.77
19	Smart phone	2	1.54	49	Self-confidence	1	0.77
20	Stimulant	2	1.54	50	Similar to fingers	1	0.77
21	Ring tone	2	1.54	51	Reinforcers	1	0.77
22	It is like the 21st century.	1	0.77	52	Like a weathercock	1	0.77
23	Analytical thinking system	1	0.77	53	Sedative	1	0.77
24	It's like a sudden loud sound	1	0.77	54	Aspirin	1	0.77
25	Car	1	0.77	55	Social Media	1	0.77
26	Companion	1	0.77	56	Endless accumulation	1	0.77
27	Predictive of consciousness, mind enhancer	2	1.54	57	Puzzle	1	0.77
28	Lesson activation tool	1	0.77	58	Mother	1	0.77
29	The concrete form of thought	1	0.77	59	Newly discovered island	1	0.77
30	It's like an electronic exam	1	0.77	60	Road bike	1	0.77
Total						130	

N = Number

-f- = Frequency

% = Percent

When Table 1 is examined, it is seen that the frequency of 60 metaphors expressed by pre-service teachers regarding Web 2.0 applications is 130. The highest frequency of these metaphors was 'play' 12 times, 'teacher' 10 times, 'helper' 10 times, 'fun additive' 6 times, 'food' 5 times, 'savior' 5 times, and 'quiz paper' 5 times and 'Another creative dimension of technology' 4 times. Other than this, 4 metaphors were mentioned four times, 4 metaphors three times, 8 metaphors twice, and the remaining 39 metaphors once. It has been observed that the metaphors of pre-service teachers regarding Web 2.0 applications generally evoke positive metaphors such as game-entertainment, teacher and assistant-supporter.

The metaphors that the teacher candidates developed for the Web 2.0 concept were brought together in terms of their common features and semantic closeness, and categories were created. As a result of this process, 7 categories such as 'Web 2.0 as a source and producer of information,' 'Web 2.0 as a measurement and evaluation tool,' 'Web 2.0 as an innovation and development Platform,' 'Web 2.0 as a social/fun environment,' 'Web 2.0 as a helpful and supportive platform,' 'Web 2.0 as a stimulating and relaxing platform' and 'other.'

Table 2. Web 2.0 metaphors according to conceptual categories

Metaphors	NM	-f-	%
Web 2.0 as an auxiliary and supporting platform	7	30	23.08
Web 2.0 as a social/fun environment	9	31	23.85
Web 2.0 as an information source and generator	11	20	15.38
Web 2.0 as an innovation, technology and development platform.	10	15	11.54
Web 2.0 as a stimulating and relaxing platform	12	10	7.69
Web 2.0 as an assessment and evaluation tool	4	11	8.46
Other	11	11	8.46
Total	60	130	100

NM = The Number of Metaphors

-f- = Frequency

% = Percent

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When Table 2 was examined, prospective teachers described Web 2.0 applications as the most informative source and a social/fun environment. In this category, 9 metaphors were expressed by 31 participants. The most expressed after the categories is 'Web 2.0 as an Auxiliary and Supporting Platform.' In this category, 30 participants expressed 7 metaphors. In the study, 11 metaphors were expressed by 20 participants in the category of 'Web 2.0 as a source and producer of information.' In the 'Web 2.0 as an innovation, technology and development platform' category, 10 metaphors were expressed by 15 participants, and 12 metaphors were expressed by 10 participants in the 'Web 2.0 as a stimulating and comforting platform' category. In the category of 'Web 2.0 as a measurement and evaluation tool,' 4 metaphors were expressed by 11 participants. In the study, 11 metaphors expressed by 11 participants were placed in the 'Other' category.

The metaphors produced by the pre-service teachers under the Web 2.0 category as a supporting platform are shown in Table 3.

Table 3. Metaphors regarding the Web 2.0 category as an auxiliary and supporting platform

N	Metaphors	-f-	%
1	Teachers	10	33.33
2	Assistant	10	33.33
3	Savior	5	16.67
4	Useful	2	6.67
5	Facilitator	2	6.67
6	Car	1	3.33
	Total	30	100

N = Number

-f- = Frequency

% = Percent

When Table 3 is examined, a total of 6 metaphors were expressed by the participants in the category of 'Web 2.0 as an Auxiliary and Supporting Platform.' Teacher candidates predominantly describe Web 2.0 as an Assistant and Supporting Platform as a teacher, assistant and saviour. Some of the opinions of the participants regarding the metaphors they produced in the category of 'Web 2.0 as an Auxiliary and Supporting Platform' are as follows; It is similar to a teacher. Because it is informative (K13). The teacher's right hand. It is very important to adapt to technology in new term education, usually, teachers get help from Web 2.0 tools in their lessons (K25). Support force. Reveals whether the information given has been learned or not (K56).

3 direct quotations provided by the participants regarding this metaphor were found to be quite meaningful. In these excerpts, the participants see Web 2.0 applications as an important support and support platform for students in learning-teaching processes.

The metaphors produced by the pre-service teachers under the Web 2.0 category as a Social/Entertaining Environment are seen in Table 4.

Table 4. Metaphors Regarding the Web 2.0 Category as a Social / Fun Environment

Metaphor	-f-	%
Game	12	38.71
Entertainment additive	6	19.35
A social person	5	16.13
Like a racing game	3	9.68
Like a funfair	2	6.45
Companion	1	3.23
Music	1	3.23

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Social Media	1	3.23
Total	31	100

-f- = Frequency

% = Percent

When Table 4 is examined, 8 metaphors, all of which are positive, were expressed by the participants in the Web 2.0 category as a Social/Fun Environment. The most striking of these metaphors are the metaphors of game, entertainment additive and a social person. Some of the views of the participants regarding the metaphors they produced in the Web 2.0 category as a Social/Fun Medium are as follows: 'Like an aspirin that fulfills [sic] joy when bored, we get distracted after a certain period of time, and at that very moment, we gather our heads with the Web 2.0 tool' (K6). It's like a racing game. Because children compete with each other and take tests (K27). There are constantly active and dynamic activities, like a game (K65). Like a game. Because it makes the activities a game for us. (K103).

The metaphors produced by the pre-service teachers under the category of 'Web 2.0 as a Basic Information Source and Requirement Tool' are shown in Table 5.

Table 5. Metaphors regarding Web 2.0 category as basic information source and requirement tool

N	Metaphor	-f-	%
1	Food	5	25.00
2	Information machine	3	15.00
3	Water	3	15.00
4	Lantern	1	5.00
5	Life	1	5.00
6	Light	1	5.00
7	Like a leader	2	10.00
8	Door	1	5.00
9	Mother	1	5.00
10	School	1	5.00
11	Lesson activation tool	1	5.00
Total		20	100

N = Number

-f- = Frequency

% = Percent

When Table 5 is examined, 11 metaphors were expressed by the participants in the category of 'Web 2.0 as a Basic Information Source and Requirement Tool.' The preservice teachers described Web 2.0 as Basic Information Source and Requirement Tool as food, information machine and water. Again, within the scope of this category, Web 2.0 applications were expressed by the participants as a tool to activate lantern, light, leader, door, mother, school and lesson. Some of the opinions of the participants regarding the metaphors they produced in the Web 2.0 category as a Basic Information Source and Needs Requirement are as follows: 'Lantern and chess. Web 2.0 tools are like flashlights in a dark environment. You use it for lighting and it makes your job a lot easier. As an effective tutorial and rich platform, Web 2.0 tools are the main learning resource. The payoff is big.' (K19) Like an information machine. It informs people with the questions asked. It informs people in different ways (K47). It is like dessert with the tea given after the meal. If effective learning is provided for the students, it will be like a dessert after a meal. (K53). It's like the first sip of water in iftar in the month of Ramadan. I think it is very easy to use. Effective instructive and meaningful. Technology supported education always wins. (K112).

The metaphors produced by the pre-service teachers under the Web 2.0 category as a Measurement and Evaluation Tool are shown in Table 6.

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Table 6. Metaphors regarding Web 2.0 category as a measurement and evaluation tool

N	Metaphor	-f-	%
1	Examination paper	5	45.45
2	Mock exams	3	27.27
3	Questionnaire	2	18.18
4	Electronic exam	1	9.09
	Total	11	100

N = Number

-f- = Frequency

% = Percent

When Table 6 is examined, 4 metaphors were expressed by the participants in the Web 2.0 category as a Measurement and Evaluation Tool. The frequency of the 4 metaphors in this category is 11. The teacher candidates predominantly qualified as 'examination paper, mock exam and questionnaire' in this category. Some of the views of the participants regarding the metaphors they produced in the Web 2.0 category as a Measurement and Evaluation Tool are as follows: 'Like an exam. Because there are a question and an answer ... Measurement and evaluation can be done and the missing issues can be repeated.' (K8). It is similar to an exam paper. You can add exam questions to similar questions to Web 2.0 tools. It gives students thinking skills. (K35). It's like an electronic exam. The computer is done over the phone and on the internet. Easy and practical (K63). It is like mock exams. It measures our knowledge about the subject. It helps to learn the subject better (K87). The metaphors produced by the pre-service teachers under the Web 2.0 category as a Stimulating and Comforting Platform are shown in Table 7.

Table 7. Metaphors regarding the Web 2.0 category as a stimulating and comforting platform

N	Metaphors	-f-	%
1	Stimulant	2	18.18
2	Ring tone	2	18.18
3	It's like a sudden loud sound.	1	9.09
4	Interesting	1	9.09
5	Calming	1	9.09
6	Coffee	1	9.09
7	It is like a heart.	1	9.09
8	Aspirin	1	9.09
9	Happiness	1	9.09
10	Reinforcers	1	9.09
	Total	12	100

N = Number

-f- = Frequency

% = Percent

When Table 7 is examined, 10 metaphors were expressed by the participants in the Web 2.0 category as a Stimulating and Relaxing Platform. The preservice teachers identified Web 2.0 as a Stimulating and Relaxing Platform with the metaphors of 'stimulating, ringing, calming, etc.' Some of the views of the participants regarding the metaphors they produced in the Web 2.0 category as a stimulating and relaxing platform are as follows: It is like a sudden loud sound because the classroom focuses on these activities. It helps us to divert class attention in our direction. It increases student motivation (K15). Like a ringtone. It helps students concentrate and focus. The spontaneous air of the lesson dissipates and saves it from monotony (K44). Like Reinforcers. It allows us to repeat what has been learned and to learn more easily.

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It can be taught in a fun way with Web 2.0 (K79). Calming excitement relief. Head dispenser. It provides cohesion in the classroom (K101).

The metaphors that teacher candidates have produced under the category of 'Web 2.0 as an Innovation, Technology and Development Platform' are shown in Table 8.

Table 8. Metaphors regarding Web 2.0 category as innovation, technology and development platform

N	Metaphors	-f-	%
1	The creative dimension of technology	4	26.67
2	Cell phone	2	13.33
3	Mind enhancer	2	13.33
4	It is like the 21st century.	1	6.67
5	Future	1	6.67
6	Online Education	1	6.67
7	The concrete form of thought	1	6.67
8	Analytical thinking system	1	6.67
9	Endless accumulation	1	6.67
10	A newly discovered island	1	6.67
	Total	15	100

N = Number

-f- = Frequency

% = Percent

When Table 8 is examined, 10 metaphors were expressed by the participants in the category of 'Web 2.0 as an Innovation, Technology and Development Platform.' In the category of 'Innovation, Technology and Development Platform,' the teacher candidates mostly described Web 2.0 applications as 'the creative dimension of technology' as a positive feature. In addition, within the scope of this category, the participants described as 'smartphone, a mind-enhancing tool.' Some of the opinions expressed by the participants within the scope of the metaphors they produced regarding Web 2.0 applications in the category of 'Innovation, Technology and Development Platform' are as follows: 'It's like a newly discovered island. It will surprise you as you research, discover, and progress. It makes lessons more enjoyable. It helps to show the competence of the class or students on that subject with the exams given at the end of the topics explained' (K27). It is a development process. It tires the brain, makes it look different (K52). He is an online educator. Since Web 2.0 enables all users to be active, it has led to the development of communication data sharing and brought a new dimension to education, economy and science. It improves creativity and innovation (K88). It's the future... We are in the age of technology. Our training should be oriented towards this. Educators and students should use technology in a useful, active and practical way. It is remarkable, suitable for our age, different and practical (K122).

The metaphors that the teacher candidates produced under the 'Other' category are shown in Table 9.

Table 9 The metaphors they produced under the 'Other' category

N	Metaphors	-f-	%
1	A disabled person	1	9.09
2	Track suit	1	9.09
3	Different	1	9.09
4	Weathercock	1	9.09
5	Market Place	1	9.09
6	Bus Card	1	9.09
7	Magnet	1	9.09
8	Self-confidence	1	9.09
9	Similar to fingers	1	9.09
10	Puzzle	1	9.09
11	Road bike	1	9.09

	Total	11	100
N = Number			
-f = Frequency			
% = Percent			

When Table 9 is examined, 11 metaphors, 1 of which is negative, were expressed by the participants in the 'Other' category. In the 'Other' category, the teacher candidates described Web 2.0 applications with very different meanings such as 'tracksuit, market place, bus card, magnet, fingers.' In this respect, it can be said that there are unusual and different qualifications for Web 2.0 applications. In addition, 1 participant described Web 2.0 applications as 'disabled person' and expressed their negative opinions. Some of the opinions expressed by the participants regarding the metaphors they produced in the category of 'Other' about Web 2.0 applications are as follows: 'It's like a magnet. It provides all students with the opportunity to do unifying activities. It provides the opportunity to do things that can be done as a classroom outside of class hours or to share information. I think active use of smart Web 2.0 is very beneficial for the Z generation ...' (K35). It is like a Weathercock. Web 2.0 tool can be prepared in every field... It is advantageous in terms of getting to know classmates who do not know each other, increasing the interest in the lessons, increasing the participation in the lessons, and the emergence of different opinions and thoughts (K67). It is like a bus card. We use a vehicle to reach somewhere, such as a bus, car, etc. Web 2.0 tools are also a tool and help in education. That's why I compared it to a bus card. It is useful in reinforcing what has been learned and being permanent (K92).

4. Conclusion and Discussion

When the data of this study, which aims to determine the metaphors that pre-service teachers have about Web 2.0 applications, were analysed, the following findings and conclusions were reached. It was observed that the majority of the participants (98%) used positive metaphors about Web 2.0 applications and 2% used negative metaphors. According to the opinions of the participants, Web 2.0 applications are mostly imagined as a helpful and entertaining tool. When the conceptual categories are examined, Web 2.0 applications are mostly described as a social/fun environment. The fact that few studies examining the metaphorical perceptions of pre-service teachers towards Web 2.0 applications with qualitative research methods, within the framework of available resources, makes it difficult to discuss these study findings. However, according to the findings of this study, the participants described Web 2.0 applications as a helpful and supportive platform, social/fun, stimulating and relaxing environment. These findings are similar to the findings of the studies conducted by Reynard (2009), Hurlburt (2008) and Richardson (2009).

According to Reynard (2009), Web 2.0 tools offer helpful and supportive opportunities that enrich and make the learning-teaching process effective. In this context, teachers and trainers should understand what opportunities Web 2.0 tools provide for teaching and learning, what kind of obstacles they may encounter in using them and how to apply new tools effectively in their teaching. According to Hurlburt (2008), there are 'invisible aspects' of facilitating learning in Web 2.0 environments. In addition to the visible side of designing effective learning environments with these tools, educators also need to serve their students as coaches, mentors, cheerleaders and task managers in order to achieve expected student engagement. In this respect, the emotional aspects of the learning-teaching process with Web 2.0 tools can be discovered and may provide opportunities and obstacles. Similarly, according to Sadaf, Newby and Ertmer (2012), Web 2.0 tools are interactive, multi-purpose, easy-to-use digital platforms that encourage students to collaborate with each other or to create and share individualized response products. Web 2.0 tools provide engaging ways for students to interact and, most importantly, learn from course materials. In addition, in another study conducted by Akçay and Şahin (2012), it was revealed that Web 2.0 applications increase the academic success of learners and positively affect their interest, motivation and interaction with content. Similarly, in Aytan and Başal's (2015) studies, the finding that Web 2.0 applications are 'a new dimension that enriches the interactions of teachers and students' supports the research results.

Another finding that emerged in the study is that the metaphors that emerged according to the perceptions of pre-service teachers were categorized as a source of knowledge and innovation, technology and development platform for Web 2.0 applications. The majority of the participants described Web 2.0 technologies as a basic source of information in the teaching-learning process and a technological platform open to innovations and developments. These findings support the findings of Pearson Education's (2015) review reports and Bingimlas's (2017) study.

According to the report of Pearson Education (2015), one of the advantages of Web 2.0 tools for students is easy to access to basic information resources related to learning content. Most students find these tools intuitive and user-friendly. Therefore, little time is spent learning how to use the programs. Tools facilitate interactive learning and innovative responses to assignments and assessments. Students see their ideas take shape quickly and are rewarded with professional looking results. It is also easy to develop and organize projects with Web 2.0 tools, according to Guley (2019), so students tend to take more risks in the creative process. This ease of use combined with the quality of the finished products

increases students' self-efficacy and motivates them to participate more seriously and actively in the content of their answers. It improves them in versatility. They also force educators to rethink the way we teach and learn and transform our educational practices. Thus, it supports more active and meaningful learning, which includes 'learning to be' and 'learning.' According to Richardson (2009), the Web 2.0 platform offers more interactive and powerful learning environments where students are information creators, producers, editors and evaluators. According to Hurlburt (2008), with these platforms, the critical thinking skills of prospective teachers can be improved by regularly comparing their own contributions with those of their peers, and verifying their relative stance in the classroom can be a strong motivation for learning-teaching. According to Gülcü et al. (2013), it has become an important necessity for teachers to use information technologies such as Web 2.0 by establishing connections between their own lessons and these technologies. Web 2.0 tools offer many opportunities for teachers to connect their lessons with new technologies.

The last finding that emerged in the study is that pre-service teachers see Web 2.0 applications as an effective assessment and evaluation platform. According to Waycott et al. (2010), Web 2.0 tools increase the effectiveness of traditional classroom assessments, increase students' participation, and enable them to express their ideas about their conceptual understanding in ways other than traditional writing and responding exercises. In this respect, according to Majhi and Maharana (2011), Web 2.0 platforms are compatible with all kinds of teaching and assessment exercises. On the other hand, as emphasized by Yılmaz (2017) and Balta and Türel (2013) in their studies, Web 2.0 evaluation tools enable teachers to make instant feedback, individual or group evaluations in a lively and competitive environment. In this respect, in practice, Web 2.0-based digital assessment and feedback provides continuous measurement and evaluation without hindering the learning activity and speed that differ from person to person.

The following suggestions can be put forward based on the findings of this study, which aim to determine the metaphors that pre-service teachers have about Web 2.0 applications.

- While conducting metaphor studies for prospective teachers, their field and status could be taken into account.
- Qualitative, quantitative and mixed model studies can be conducted on how Web 2.0 applications can help to learn better compared to traditional teaching, based on the opinions of prospective teachers in particular and all educators in general.
- There is a need for more research on the metaphors offered by in-service educators regarding Web 2.0 applications.
- It is recommended to examine the messages conveyed through metaphors related to the Web 2.0 field in terms of educational science principles.

5. References

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