

# Teachers' use of Web 2.0: Education Bag Project Experiences<sup>1</sup>

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## ABSTRACT

The main purpose of this research is to determine teachers' views on using Web 2.0 tools in education. In accordance with this purpose, participant teachers were asked to express their expectations for the training before they took the training and perceptions on the training after completing it. Additionally, teachers were asked which Web 2.0 tools they liked the most. Within the scope of the project entitled "Education Bag: The Use of Web 2.0 Tools in Education" the research where teachers' views about the process were taken was conducted in accordance with the qualitative research method. 148 teachers from 21 different cities participated in this TÜBİTAK project. An online structured form prepared for the purpose of the research was shared with the participating teachers. This form included three questions as (i) teachers' expectations for the training, (ii) training efficiency and (iii) which Web 2.0 tools they liked/favoured during the training process. Data was analysed with content analysis. Data obtained from the content analysis were discussed under two sub-titles as expectations related to education and post-education views. Participant teachers' training expectations were gathered under four different themes. These themes are teacher, course, education and student. Participant teachers' post-training views were also shaped under four themes. These themes are training, content, teacher and instructors. Majority of the participant teachers liked online test preparation tool Quizizz most. Second most liked Web 2.0 tool is Metaverse that can develop augmented reality applications. Edmodo, Google Forms, Edpuzzle and Nearpod are among other favoured educational Web 2.0 tools.

Metin girmek için burayı tıklatın.

**Keywords:** *Web 2.0, teacher training, Education Bag, professional development, ICT in education*

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## INTRODUCTION

Education systems have been shifting rapidly all around the world to meet 21st century learner expectations and to keep up with the latest technological developments and educational innovations. With this shift brought by digitalization, teachers' skills have begun into transition period in parallel with students' skills. At the end of the 20th century, teachers have moved from the position of transmitting knowledge to guiding the process of constructing knowledge. Today, teachers are in a position to design instruction in the most appropriate way to the characteristics and needs of the student, learn together with the student, in other words, accompany students in the learning process (Orhan Göksün & Kurt, 2018). That is to say, instructors became liable for multiple aspects; such as being a learning companion and learning with the student, teaching how to learn and improve problem solving skills, adapting learning environments regarding student skills as virtual or real instructors (Chou, Chan & Lin, 2003). Based on this information, it is possible to say that instructors of today are responsible for meeting 21st century requirements. This is one of the indicators showing that technology has become more important in learning environments. To benefit from technology in learning environments effectively, steps that adapt student and teacher skills in terms of pedagogy and technology should be taken. In this sense, it can be stated that effective learning can only occur when technology and individuals are brought together and used harmoniously (Orhan Göksün & Kurt, 2018).

It can be said that one of the most important opportunities provided by the internet for linking up technology and individuals effectively is the use of/is the implementation of Web 2.0 tools. Web 2.0 tools can be defined as structures that enable (i) creating and transmitting knowledge and content, (ii) interacting through social networks, (iii) work in cooperation with other individuals, (iv) editing existing content and (v) sharing data by using various technological tools (Jonassen, Howland, Marra and Crismond, 2008). Thus, individuals have become online participants and content developers (Ahmed, AbdelAlmunem & Almabhouh, 2016). Because of these opportunities they provide, it is safe to say that Web 2.0 tools have become an important part of learning process. Accessing knowledge anywhere and anytime during learning process has led learners to digital environments and transformed these environments, especially Web 2.0 tools into learning environments (Bozkurt, 2013). Teachers' use of new technologies in teaching process can help this process to proceed more meaningfully. The use of Web 2.0 tools in educational environments allows students and teachers to interact with teaching content related to learning requirements (Lemke, Coughlin, Garcia, Reifsneider and Baas, 2009). Accordingly, it can be said that teachers and students' interaction with course materials increases the permanence of learning. In this sense, since Web 2.0 tools have become one of the most important field of educational innovation, field experts of instructional technologies argue that teachers should integrate Web 2.0 tools into their classes to support constructivist and meaningful learning. However, to achieve this, teachers need to have knowledge, skills and experience regarding the use of Web 2.0 tools (Sailin & Mahmor, 2018). Therefore, to conduct the use of technology and/or technology integration processes efficiently, professional development activities are implemented; for pre-service teachers during their education, and for teachers during service, to improve the technology use skills of teachers.

Opportunities such as communication, interaction, ease of use and interface that Web 2.0 tools provide make them more preferable than other technologies in technology integration in education (Altıok, Yükseltürk & Üçgül, 2017). In the relevant literature, the most important reason why Web 2.0 tools are preferred in educational environments is seen as supporting interaction and communication rather than just transferring knowledge (O'Reilly, 2007). The most important reason why they are not preferred is teachers who are reluctant to use these tools as they do not know how to integrate them into education (OECD-Organization of Economic Cooperation and Development, 2009). Alhassan (2017) reported that teachers mostly prefer websites with multimedia tools and Web 2.0 tools for video sharing and they rarely prefer podcasts, content management and Web 2.0 tools for editing webpages. Main reason for this preference could be not knowing how to integrate podcast, content management and webpage editing into education or simply, not knowing how to use these. At this point, it is clear that the importance of providing teachers with education for integration of technology into education and the use of technology in education seems obvious.

Many methods have been followed in the national and international contexts to develop teachers' skills for technology use for educational purposes. Lots of these have been carried out in the national context within the scope of technology integration projects and professional development activities. In our country, technology integration projects such as FATİH are initiated to provide technological tools to schools, to identify problems with functioning and to organize professional development activities (Kurt, Kuzu, Dursun, Güllüpinar & Gültekin, 2013). However, not completing the project within expected time and efficiency, it can be seen that there are certain problems to focus on this project based on shareholder views. One of the most important suggestions for solving these problems is organizing in-service training and professional development activities aimed at improving teachers' technology use and integration skills (Çakır & Yıldırım, 2009; Demir & Bozkurt, 2011; Gülcü, Solak, Aydın & Koçak, 2013).

Processes in the international context have been carried out within the framework of technology use training and certifications by companies, which have a say in technology manufacturing such as Cisco, Intel and Apple having a wide target audience such as employees and students. Among these companies, Apple offers professional trainings and increases its prevalence by collaborating with teachers in order to support the use of its own technology in education and enable teachers to use these technologies effectively (Apple, 2019). With this work of Apple, it is believed that teachers in schools have used all opportunities of technology in their classes (Apple, 2019). Considering these trainings are directed towards the use of the technologies produced by a private company, it is an advantage that the company has a widespread network around the world, while it is clearly seen as a limitation that the technologies subject to the education are directed towards devices and applications compatible with these devices. At this point, it can be said that the professional development activities that would support the use of technology in education, being independent of device and platform would increase the widespread effect and added value of these activities. Since majority of Web 2.0 tools run on web browser or on mobile applications compatible with almost all platforms, it is believed that these professional development activities can be carried out with Web 2.0 tools and in this way, teachers can develop their technological skills without device or application limitations. From this point of view, professional development activities in which the data of the study is gathered are based on teaching the use of Web 2.0 tools.

When the national and international technology integration processes are compared, the inadequacy of the professional development component is striking in the national context (Tekin & Polat, 2014). In order to overcome this deficiency, various activities are organized by both the Ministry of National Education (MNE) and universities in the process of teacher training and by individual efforts of teachers. Some of these activities require compulsory participation, however;

the majority of these activities are built on voluntary participation basis. Drage (2010) argued that teachers' motivation is highly effective on efficiency of professional development activities. At the same time, motivation on professional development can be positively affected from factors such as reaching a better point in the teaching profession, life-long learning requirements and negatively affected from factors such as lack of time, economic support problems, presenting content that is not needed by teacher. At this point, teachers' expectations, views and preferences for the professional development activities offered to them gain importance.

The main purpose of this research is to determine teachers' views on the project process within the scope of using Web 2.0 tools in education. In accordance with this purpose, participant teachers were asked to express their expectations before the training and perceptions on their experience after the training. Additionally, teachers were asked which Web 2.0 tools they liked the most. By this way, it was aimed to promote teachers' motivation sources for education, to get feedback about the training process with the opinions they stated, to evaluate the training and to reveal the preference of Web 2.0 tools included in the content offered.

## **METHOD**

This section includes information on the research model, study group, data collection tools, and data analysis.

### **Research Model**

The research was conducted in a qualitative pattern. Qualitative research is carried out to obtain detailed information about an event and a phenomenon (Patton, 1990). Teachers' views on training process were taken in detail, within the scope of the project entitled "Education Bag: The Use of Web 2.0 Tools in Education". Education Bag is a platform that provides teachers who work in all areas of learning in the K12 level in Turkish education system with material and online support for the use of Web 2.0 tools. The aim of the Education Bag project is to provide teachers who serve in different regions in Turkey with training on how to design and produce learning materials in Web 2.0 environments by making use of the materials and facilities of this platform. For this purpose, 90 hours of trainings were conducted between 01-30 September 2018, which were planned by the research team. The trainings were conducted by five groups formed by the research team based on common materials. During the process, researchers who did not participate in the training provided synchronous and asynchronous online support. Development and implementation phases of the project was funded by TÜBİTAK

### **Study Group**

148 K12 teachers from 21 different cities participated to this TÜBİTAK project. The experiences of the participating teachers ranged from 1 month to 30 years. Most of the teachers participating in the project are working in secondary and high school levels and working in 13 different fields such as science education, computer sciences, primary school teachers and foreign language.

### **Data Collection Tool**

The online semi-structured forms prepared for the purpose of the research were shared with the participating teachers. Data collection process was carried out in two stages as pre- and post-training. In the first stage, participants were asked "What are your expectations regarding the

training?” question in order to gather their expectations before receiving any training. At the end of the process, the participants were asked “How do you evaluate the efficiency of your education?” And “Which tool or tools you like the most?” questions. Both data collection processes were conducted through Google Forms.

### Data Analysis

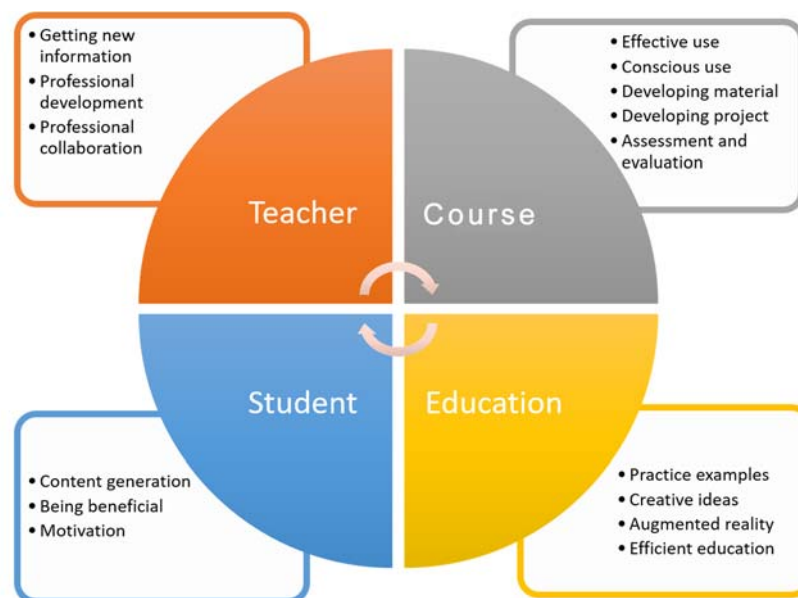
Data was analysed with inductive content analysis. The analysis was performed in two stages. In the first stage, a researcher conducted inductive content analysis and code and theming processes. In the second stage, three experts from the research team held expert panels on the codes and themes obtained in the first stage until the consensus was reached on all the themes. The themes and codes that the experts agreed on were reported at the end of the process.

## FINDINGS

Data obtained from the inductive content analysis were discussed under two sub-titles as expectations related to education and post-education views.

### Expectations from the Training

Before the training, participant teachers were asked to express their expectations regarding the training. It was seen that participant teachers’ training expectations were gathered under four different themes. These themes are teacher, class, education and student. Under the “teacher” theme are the participant teachers’ expectations from themselves during training. While “course” theme represented what participant teachers have learned incourse, “education” theme represented their education-oriented expectations. Under the theme of "student" the participant teachers expressed their opinions about the contribution of education to their students’ learning process. Themes and sub-themes that show participant teachers’ training expectations are presented in Figure 1.



**Figure 1. Participant teachers’ training expectations**

When “teacher” theme was analysed, it was seen that participant teachers’ main expectations from the training was to gain new information. When asked about expectations from the training, one of the participant teachers expressed, “*Knowing, learning and using Web 2.0 tools in more detail. Also, transferring what I have learned into my work.*” Based on this statement, it can be understood that the participant teacher wants to gain new information about Web 2.0 tools by participating the training. When another participant teacher’s training expectations were asked,

the answer was as follows:

*"I want to increase my knowledge on technology use in education and gain new information."*

In addition to gaining new information, participant teachers' have expectations on professional development. Particularly, the participant teachers stated that they expect to reach a sufficient level to use Web 2.0 tools easily in their learning environments. One of the participant teacher's view on this topic was as follows:

*"Reaching at a level to use Web 2.0 tools in education and training..."*

Similarly, another participant teacher expressed his/her expectations from training by stating, *"to create new content with my students by having sufficient qualifications on Web 2.0 tools"*.

Some of the participant teachers stated that after they developed their professional abilities, they want to share what they have learned with their colleagues. One participant teacher's view on this topic was as follows:

*"I aim and expect to use Web 2.0 tools effectively in class practices and if I can develop myself enough, I want to be competent enough to share my knowledge with other teachers."*

Sharing what they have learned from training with their colleagues is one of the purposes of this training. Willingness of some teachers in this regard is considered as an indicator that educational needs were identified correctly and planned accordingly.

Another theme including participant teachers' pre-training expectations is course. Under "course" theme, majority of the participant teachers expressed that they want to use Web 2.0 effectively in their classes. One science teacher stated, *"During and after this training, I want to use web tools in my field (science) more effectively, learn tools I do not know about and teach my lessons in fun and effective way"* and showed that he/she wants to use Web 2.0 tools effectively in his/her field and classes. Similarly, another participant teacher expressed his/her expectation from training as *"using technology more effectively and efficiently in education and training process"*. Another participant teacher stating that he/she wants to use Web 2.0 tools effectively in his/her classes also expressed that he/she wants to use them consciously. He/she emphasized conscious use by stating that *"I believe it will be an efficient training for my personal development, use of technology, professional development and learning new technologies I can use and transfer them to my students, putting these new technologies to practice, using technology more consciously and using integration process more effectively"*. Some of participant teachers' views for effective use sub-theme were as follows:

*"Using Web 2.0 tools effectively and using these tools in my classes by interacting with my students."*

*"Being more effective, productive and active while applying the achievements of the classes by using Web 2.0 applications."*

*"My expectation from this training is to use Web 2.0 tools more effectively in our education life and to adapt Web 2.0 tools to the impossibilities."*

*"After this training, I want to integrate these practices into my class and use them actively."*

Some participant teachers' views under the course theme are gathered under the material development sub-theme. Participant teachers stated that they want to develop content by using Web 2.0 tools they will learn in the training. One participant teacher said, *"I want to know more than one tool. I want to learn about tools that I can use at school and tools that I can develop*

*content” and emphasized that He/she wants to learn tools to develop content. Another participant teacher said, “Using Web 2.0 tools more effectively and consciously, learning and applying alternative measurement and evaluation techniques” and stated that he/she has an expectation about learning Web 2.0 tools that he/she can apply alternative measurement and evaluation techniques. Similarly, another participant teacher emphasized his/her expectations about learning Web 2.0 tools that can be used in student assessment by stating that “I expect to learn different applications while giving lectures, making presentations and carrying out student assessments”.*

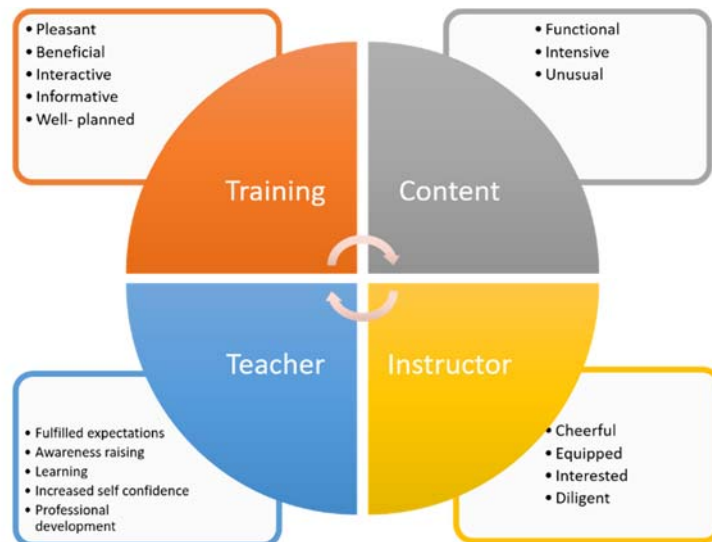
Another sub-theme under course theme is developing project. Few participant teachers stated that they want to finish this training with information that they can develop a project. One participant teacher said, *“To help preparing TÜBİTAK projects and to learn different things”* and expressed his/her expectation from this training to help preparing TÜBİTAK projects.

Other participant teachers’ training expectation themes are education and student. By participating TÜBİTAK 4005 project, teachers expect the training to be full of practical examples, to address issues such as augmented reality that are not available in other trainings and to be an efficient training in general. In addition, they expect to meet creative ideas for the integration of technology into education. One of the teachers said; *“Unlike previous trainings on Web 2.0 tools that I have already participated, augmented reality was mentioned for the first time. I am looking forward to it.”*

Under the theme of “student”, the participant teachers stated that they expected to be useful to students in producing content, facilitating their motivation by gathering the attention and interest of the students and giving lectures with developing technologies. For an example of these views is *“...Especially new generation is way ahead of us in using technology. I aim to use these applications actively and draw their attention in class.”*

### **Views on the Training’s Efficiency**

Participant teachers’ views about training were asked after last session of the training. An online structured form was used to collect data from the participant teachers including their views, suggestions and their favourite Web 2.0 tools. According to the data, participant teachers’ post-training views are shaped under four themes. These themes are training, content, teacher and instructors. Under “training” theme, participant teachers’ views on satisfaction after the training were collected. Under “content” theme, participants’ views on preferred Web 2.0 tools in education were included. Under “teacher” theme, the participant teachers approached the training in terms of personal and professional development, while under “instructors” theme; the views of the participant teachers about the instructors of the training were included. Themes and sub-themes showing post-training views are presented in Figure 2.



**Figure 2. Participant teachers' post-training views**

When participant teachers' views were asked, teachers expressed that they were satisfied with the training. Figure 2 shows participant teachers' satisfaction statements under the training theme. It is seen that these expressions are generally gathered under pleasant, beneficial, interactive, informative and well-planned sub-themes. One participant teacher stated *"we have learned Web 2.0 tools that we can apply in class, it was a pleasant and beneficial training process"*, and emphasized that this training was both pleasant and beneficial. Similarly, another participant teacher said, *"I really enjoyed it. We had a good interaction with our colleagues. It was the first time that I met some of the educational tools and they were especially enjoyable. I will transfer them into class environment. We want this training to be continued"*. This statement of the teacher shows that the training was pleasant and it created interaction between the colleagues. Another participant teacher expressed that this training was informative by stating: *"It was a highly informative training. We had a chance to apply these tools. I would like to thank instructors for their friendliness and interest. I would like to have this training again."* A participant teacher saying that learning is good with practices expressed his/her satisfaction about the success of the process planning by stating, *"I think it was a well-planned training on a subject that I need to know"*. Some of the participant teachers' views about their satisfaction with the training are as follows:

*"I really enjoyed it. I learned to use tools that will make my life easier. I have found a portal on how to learn about new ones."*

*"It was a good and beneficial training. I have learned many tools I did not know about. Thank you."*

*"It was an intensive and good training. I have learned many tools I did not know and I have seen there are more tools and I want to thank all instructors who contributed."*

*"There are applications I will use actively. It was a beneficial training. I want to participate in similar trainings."*

*"It was a high-quality and interactive activity. Thank you very much."*

*"We have left behind three short days in an efficient training. We are going back to school with our full pockets. Web is like an ocean; we are learning new things when we research and analyse. I want a new training; I hope we can meet again. Thank you for everything."*

*"It was an extremely beneficial training. I have learned about programs that I have heard of"*



*but never used before and I learned how to use them. Now, I can diversify in-class activities and use alternative approaches. I think it will take time to prepare student applications in these programs at first. But after having certain order, I believe this will be practical and I will save time."*

*"This training was efficient and full of information. We have seen how we can use Web 2.0 tools in any field. Thank you everyone who contributed."*

Participant teachers stated their views on selected Web 2.0 tools and activities for the training under the content theme. When these views were analysed, teachers expressed that the contents were functional, intensive and unusual. Functionality of the content means that the selected Web 2.0 tools are easy to apply in schools or classes. A participant teacher's view is an example of the functionality of the contents. He/she stated *"The training was entertaining and good. Programs I have learned can be easily applied into classroom. I would like to thank my instructors for this training"*. One participant teacher's view on functionality of the contents was as follows: *"I can say on my own behalf that it was extremely efficient. I have learned applications I can use in my classes. And I have also learned applications I will recommend to my school. Thank you for your efforts."*

Another sub-theme under content theme is intensive content. Participant teachers expressed their satisfaction with the intensive training content. A participant teacher said that *"It was a very useful training. It was full in all aspects. I have seen most of the selected Web 2.0 tools for the first time in here"*. As shown in the view of this participant teacher, teachers had the opportunity to recognize many of the selected Web 2.0 tools for the first time. In addition to recognizing various Web 2.0 tools, participant teachers expressed that they were satisfied with recognizing subjects like augmented reality. These views on the differentiation of the contents are gathered under different sub-themes. One participant teacher stated that in addition to Web 2.0 tool he/she knows and uses, it was interesting to have subjects like augmented reality and stated, *"Other than web tools I already know and use, it is interesting to have augmented reality applications as I don't know this field"*.

Another theme that includes participant teachers' post-training views is teachers. "Teachers" theme contains participant teachers' view about themselves after the training. These views are shaped around fulfilled expectations, awareness raising, learning, increased self-confidence and professional development sub-themes. Some of the participant teachers clearly stated that their pre-training expectations are fulfilled. Participant teachers' views on this subject are as follows:

*"I can definitely say that my expectations were fulfilled, my awareness about certain applications have raised, of course I need to work on these applications and make my own production."*

*"It was a better training than I have expected. There is no doubt that I will give my lectures more enjoyably and efficiently."*

*"It went well as I hoped, actually these kinds of trainings should be provided to all teachers, if necessary distant training systems can be used. Especially we can reach students with phone applications and raise beneficialness."*

Another sub-theme under teacher theme is awareness raising. Participant teachers expressed that after this training, their awareness of various Web 2.0 tools raised. One participant teacher expressed that training was good and extremely beneficial for awareness and other participant teacher emphasized the same case by stating, *"My purpose was to learn Web 2.0 tools in education. I learned some of them in detail. I have raised my awareness of other tools."* Another participant teacher expressed that his/her awareness of educational Web 2.0 tools was not enough

before the training but raised after the training and stated that, *“Actually we had no idea about the tools we used in this training. But thanks to this training, we have learned to use various tools and we have provided an opportunity to give lectures effectively to students with these tools.”*

In learning sub-theme under teacher theme, participant teachers said that they have learned various new Web 2.0 tools. A participant teacher said that he/she enjoyed the training and learned new tools. He/she stated *“I really enjoyed it. I learned to use tools that will make my life easier. I found a portal on how to learn new ones”*. Similarly, another participant teacher stated that the training was good and useful while expressing that he/she learned new tools in his/her statement as follows: *“It was a good and useful training. I have learned many tools that I did not know before. Thank you.”* Another participant teacher said that he/she will use Edmodo, one of the educational Web 2.0 tools creating learning content, in his/her future education and training process. He/she emphasized it on his/her statement: *“Thank you. I will use these applications (especially Edmodo) with my students. Moreover, I didn’t know any of the applications you taught us. Thank you again”*. Many of the participant teachers emphasized that they have learned to use new Web 2.0 tools that can be used in education and they have pointed out that this provides an increase in their self-confidence. This case is pointed out in a participant teacher’s statement: *“We teachers can resist to what is new. With this training here, we have developed self-confidence to use web tools like others.”*

Last sub-theme under teacher theme is professional development. Participant teachers stated that the training contributed to their professional development. One participant teacher expressed that his/her professional development would have been insufficient if he/she had not participated in this training by stating, *“Training was extremely effective, efficient and at the same time enjoyable. I believe that I can achieve the same results by integrating training content into classes. If I did not have this training, I will be insufficient in my professional development. Thank you for everything.”* View of another participant teacher about the contribution of this training to professional development as follows:

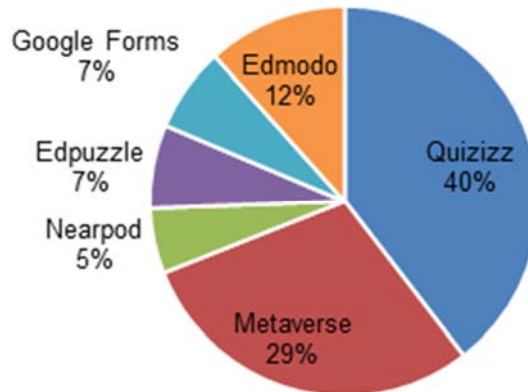
*“It was an efficient event. It greatly contributed to my professional development.”*

*“I had the opportunity to get to know the 21st century skills in a more detailed and profound way in terms of technological applicability. I think it is a useful training to contribute to my professional development and at the same time to provide a more beneficial educational process for my students by applying them in the classroom.”*

Last theme containing participant teachers’ post-training views is instructors. Instructors theme is a theme that includes participant teachers’ views on the project team. Participant teachers stated that instructors were cheerful, equipped, interested and diligent in general. A participant teacher said that cheerful instructors made them happy too and stated that *“It was and enjoyable and good training. I was happy to have cheerful instructors. You warmed the environment with your warm attitudes.”* Another participant teacher emphasized that the training was well-planned and instructors were well-equipped and had positive approach by stating *“I think that this is a well-planned training on a subject I really need. It is good to learn with practices. I liked qualifications of instructors and their positive approach.”* Another participant teacher, who emphasized the strongest side of the training as the interest of the instructors, expressed his/her satisfaction with this statement: *“It was a pleasant and informative training. I think I have gained a lot on my behalf. The strongest side of the training was the positive attitudes of our instructors and their interest to each of us.”* By stating *“Our instructors were extremely diligent and sincere”*, a participant teacher, interested in augmented reality, expressed his/her views about the instructors.

### Liked Web 2.0 Tools during Training Process

In addition to participant teachers' views on the training, they were asked about which Web 2.0 tool in the training they liked the most. Distribution based on the participant teachers' answers are given in Figure 3.



**Figure 3. Favorite educational Web 2.0 tools**

When Figure 3 is analysed, it is determined that majority of the participant teachers liked online test preparation tool Quizizz most. After Quizizz tool, second most liked Web 2.0 tool is Metaverse that can develop augmented reality applications. Edmodo, Google Forms, Edpuzzle and Nearpod are among other liked educational Web 2.0 tools.

## DISCUSSION AND CONCLUSION

In this research, teachers' views on using Web 2.0 tools before and after Education Bag: Using Web 2.0 Tools in Education project. Results are considered under two sub-titles as expectations related to training and post-training views. According to the findings of teachers' expectations from the project, it is seen that there are expectations under teacher, student, course and education themes. Teachers expressed that their expectations were to gain knowledge on using Web 2.0 tools and using this knowledge to contribute their professional development. While Sailin and Mahmor (2018) stated that teachers need knowledge and experience to integrate Web 2.0 tools into their classes, Yuen, Yaoyuneyong and Yuen (2011) found out that teachers need more training to integrate Web 2.0 tools into their classes. According to Hao and Lee (2017) although it is inevitable to use Web 2.0 tools in learning environments, teachers might have various concerns about using these technologies in their classes. Teachers' learning to use these tools will provide a significant contribution to meet 21st century learning needs and to create deep and meaningful learning environments with these tools (Ertmer & Otenbreit-Leftwich, 2010) as well as to eliminate possible concerns. Many researchers see the lack of sufficient knowledge and experience of teachers as an important obstacle in the integration of technology into educational environments (Earle, 2002; Whitehead, Jensen & Boschee, 2003). From this perspective, it is a natural result for teachers to have an expectation to use these tools effectively and to see this training as a part of their professional development. Another important result obtained from teachers' expectations from the training is that they want to share their experiences with their colleagues. Particular emphasis on teachers' willingness to share their experiences is an indication that they expect a widespread impact from the training. Although teachers completed these trainings at individual level, as

Collinson (2004) stated, organisational change is only possible when teachers share their own learnings with other teachers in the school.

Considering the teachers' expectations on students, it is seen that expectations mainly focus on students' content creation skills, attracting attention and interest of students for easier motivation and being beneficial to students by giving lectures with developing technologies. Teachers believe that using these tools will have an impact on students and students can develop content with these tools. Coutinho's (2008) study also shows that providing students with remarkable experiences with Web 2.0 tools has a positive effect on their intentions to use them in the classroom. On the other hand, teachers emphasize that these tools can be effective tools in increasing learner motivation and focusing their attention. In their study, Deng and Yuen (2012) contribute to the conclusion that Web 2.0 tools attract students' attention and increase their motivation towards the lesson.

Another theme where teachers' pre-training expectations are gathered is course. While teachers desire to be informed about how to use Web 2.0 tools effectively and consciously in their classes, they have the expectation to develop projects and to apply these tools as an alternative measurement and evaluation method. DoBell (2013) emphasised that Web 2.0 tools are realistic methods to assess students' active participation performances. With these tools, teachers have the chance to use alternative measurement and evaluation methods based on performance and product rather than traditional measurement and evaluation methods.

Another important issue in which teachers expressed their expectations is the content of the project training. Teachers expressed their expectations as to have practical examples in the training, to get to know innovative ideas to integrate current technology into education, to have subjects like augmented reality, which are not commonly included in other trainings and to have an efficient training in general. The fact that teachers have different practices regarding the content of the training, include creative ideas, addressing new issues and expressing that they expect to be productive may be seen as a result of in-service trainings that they had previously participated and found inefficient. Çağıltay, Çakıroğlu, Çağıltay and Çakıroğlu (2001) found that teachers had some negative opinions about the content and effectiveness of the in-service trainings they received from the Ministry of National Education and found the quality of the trainings inadequate. At this point, it may be natural for teachers to have different expectations regarding the content of the training to be provided in the project. In addition to these, the recent policies of the Ministry of National Education's teachers about project preparation may explain that teachers may have expectations about preparing their own projects in the light of the information they have acquired in this training.

In the second section of the research findings, the views of the teachers at the end of the project training are given. In this context, according to the findings of the research, post-training views of teachers are gathered under the themes of training, teachers, content and instructors.

Findings under training theme reflected that participant teachers were satisfied with the training. Teachers expressed that provided training suited their needs and this made the training efficient. Sadaf, Newby and Ertmer (2012) emphasized that Web 2.0 tools have become a need for educational environments in order to be successful in today's society and to develop teaching-learning processes effectively and that awareness of teachers towards their needs plays a decisive role for the future of the education process. Participant teachers' regarding learning Web 2.0 tools, as a need is extremely important as it shows that these teachers are willing to use these technologies in future teaching-learning processes. It is seen that majority of teachers agreed on pleasant, beneficial and informative aspects of the training. Teachers' reflected that this training enabled them to present alternative teaching and assessment methods and collaborate in interaction with each other. Similarly, Taranto (2011) stated that teachers' professional development accelerated by

Web 2.0 tools and their interaction with their colleagues increased. Another important factor emphasized by teachers is that the training provided under the project was well-planned and organized. Bayrakçı (2009) states that the dissatisfaction of teachers regarding in-service trainings arises from the lack of planning. From this point of view, the common views of the participant teachers that the training was a well-planned one may have played an important role on their satisfaction with the training.

Another theme including participant teachers' post-training views is content. Teachers reported that the content of the training was functional, intensive and unusual. Teachers stated that they can easily integrate Web 2.0 tools they have learned and benefit from these tools during in-class and extracurricular processes. Sailin and Mahmor (2018) emphasize that meaningful learning activities contribute to the development of teachers' knowledge and skills in using Web 2.0 tools and increase their confidence in integrating these tools into future teaching practices. Teachers' emphasis on the functionality of the training carried out within the scope of the project is important as it reveals that this training was conducted with meaningful learning activities. Under content theme, teachers emphasized that training was intensive and unusual. Teachers emphasized that this training contained different Web 2.0 tools to meet the needs and such diversity is extremely beneficial to select and use different tools based on course objectives.

Other than training and content themes, another theme for teachers' views is teacher theme. Teachers stated that their awareness for Web 2.0 tools has raised and this training had positive contribution to their professional development, their self-confidence to use these tools increased, and their training expectations were fulfilled. Redmann and Kotrilik (2004) remarked that teachers who are aware of their skills to integrate technology into education and who try to develop these skills play an important role and teachers with high self-confidence have higher chance to use innovative methods to integrate technology. Considering the training given within the scope of the project from this point of view, the fact that the teachers have increased their self-confidence about Web 2.0 tools can be considered as an important indicator of their intention to use these tools in the teaching-learning processes in the future.

Another theme including the participant teachers' views on the instructors of the project is "instructors". The teachers stated that the instructors were cheerful, equipped, interested and diligent, and that these characteristics of the instructors had an important role in the training. In this context, it can be said that In adult education, not only the content but also the effectiveness of the individuals who transfer it is a component that should not be ignored.

After the training provided under the project, teachers' views on Web 2.0 tools in training process are presented. Accordingly, teachers' favourite tool is Quizizz followed by Metaverse that can develop augmented reality applications. Edmodo, Google Forms, Edpuzzle and Nearpod are among other liked educational Web 2.0 tools. Teachers' liking Quizizz tool the most can be interpreted as teachers have an expectation for alternative measurement and evaluation methods in addition to gamification elements and this training met this expectation.

In conclusion, comparing the teachers' expectations from Web 2.0 tool training and their post-training views, it could be said that this training was beneficial for teachers. It was determined that The needs of the teachers who wanted to obtain new knowledge and professional development before the training were met at the end of the training in accordance with their opinions. Moreover, they learned new Web 2.0 tools that they could use in educational environments, there was an increase in their awareness and confidence in using educational Web 2.0 tools. Additionally, teachers who want to use Web 2.0 tools effectively in their classes before the training stated that the contents they have learned after the training are functional. This statement may indicate that these expectations are fulfilled. In other words, the expectations of the teachers about the efficiency

of the training before the training are met. Participant teachers' statements on which they said the training was pleasant, beneficial, interactive, informative and well-planned can be regarded as an indication that their expectations are fulfilled.

### Suggestions

Considering the results of this research, various suggestions on teachers' professional development and teacher training programs have been developed. Results of the research show that teachers are willing to use Web 2.0 tools. At this point, in-service trainings are needed to enable teachers to integrate Web 2.0 tools into their classes. Determining the expectations of the teachers before these trainings and preparing the contents in line with these expectations will also increase the efficiency of the trainings. It is also an important requirement that the trainings to be organized should be conducted in a planned manner by expert instructors in their fields. After these trainings, monitoring how teachers reflect what they have learned from these trainings will provide a general idea about prevalent impact of these trainings and such monitoring will enable effective training planning at the next stage. Web 2.0 tools should be included in teacher training programs as meaningful learning activities to enable prospective teachers, as well as active teachers, to experience real, useful experiences for their own learning and future teaching practice. In this context, in the in-service training process of teachers, by using similar projects within the framework of university-school cooperation, contribution can be made to make the process more effective and productive. Thus, a stronger link can be established between theory and practice.

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