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ORIGINAL ARTICLE

Pre-service Teachers' Perspectives on Activities and Web Tools Utilized in the Introduction to Education Course

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Ethical Statement

Consent form was obtained from the participants. Ethical board approval was granted.

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Conflict of Interest

No conflict of interest is present in the conduction or the reporting of this study.

ABSTRACT

The aim of this study is to reveal the opinions of pre-service teachers about the activities and web tools used in the Introduction to Education course. For this purpose, the Introduction to Education course was taught with Web 2.0 supported activities for seven weeks in the autumn term of the 2023-2024 academic year. Qualitative research method was used in the study and phenomenology design was preferred. The study group was conducted with students taking the Introduction to Education course in the autumn term of 2023-2024 at a state university in Ankara. The study group consisted of 125 pre-service teachers studying in 62 Classroom Education and 63 Guidance and Psychological Counselling departments in the first year of the Faculty of Education. Data were collected through a structured interview form consisting of five open-ended questions. Content analysis was used to analyze the data. According to the findings obtained as a result of content analysis, pre-service teachers found the activities facilitating learning, interesting and improving professional skills. It was determined that the most interesting activities for pre-service teachers were station and drama, and Kahoot and Padlet as web tools. Despite some negative situations such as the cost of some applications, traditional classroom organization, technological problems, most of the pre- service teachers expressed positive opinions. It is suggested that web applications that include cooperative learning, active participation and teaching activities that support interest and motivation should be investigated in different courses and their use should be expanded.

Keywords: Introduction to Education Course, Web 2.0, learner-centred activity, pre-service teachers Teachers

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INTRODUCTION

It is not a new idea that education and training processes should focus on the learner rather than the teacher and on instructional technologies. Research and practice are now concerned with giving the learner more responsibility for learning. In order to move to learner-centred education, learners need to move from a passive receptive position guided by the teacher to an active position where they direct their own learning. The biggest difficulty encountered in learner-centred education practices is that students are more familiar with traditional teaching-centred experiences and cannot adapt to new practices that give learning responsibility. Because students are more directed to what they should do with the traditional understanding. For this reason, firstly, students need to become self-directed (Aslan & Reigeluth, 2015).

Technology has an important role in changing traditional teacher and student roles. Students no longer see the teacher and textbooks as the only source of knowledge. Technology has facilitated access to more up-to-date learning resources and materials for both teachers and students without time and space limitations. Apart from being a source of information, technology also plays a role in diversifying teachers' teaching methods and making teaching more interesting and effective (McKnight, O'Malley, Ruzic, Horsley, Franey, & Bassett, 2016). Web 2.0 technologies are becoming increasingly popular in students' daily lives. This situation pushes teachers and curriculum designers to further investigate and explore the use of these tools in education (Bennett et al. 2012). In this context, Web 2.0 tools offer new opportunities to meet the learning needs of the new generation growing up with technology and to design an education that supports student participation (Berg, 2011). The evidence that research on student-centred education approach increases academic achievement may focus on the positive effects of Web 2.0 technologies that support this approach and the adaptation of these technologies to different teaching strategies and learning styles. This is because students' learning activities often vary according to the way teachers organise their lessons (Li, Ding, & Zang, 2021). Higher education institutions in particular need to transform themselves from Education 1.0 institutions to Education 2.0, 3.0 and even 4.0 in order to become learning centres that meet the changing learning needs and expectations of students (Berg, 2011, Öztemel, 2018). Using Web 2.0 tools now seems natural for the digital generation.

According to Rosen and Nelson (2008), the greatest strength of Web 2.0 tools as a social revolution rather than a technical revolution is that they can change the nature of student learning and prioritise the transformation of Education 2.0. Education 2.0 can be defined as the use of digital tools to transform teaching and learning by enabling students and teachers to participate in the process of knowledge creation and to create interactively distributed learning communities or networks. Therefore, Web 2.0 tools have the potential to transform classrooms from teacher-centred transmission teaching to student-participatory approaches, from individual-centred pedagogies to learning community approaches (Rosen & Nelson, 2008).

The use of Web 2.0 tools supports the implementation of student-centred approaches. The cases where Web 2.0 tools are used as a tool to enrich education and training activities, to make teaching more effective and interesting, to increase student participation and to ensure that learning is more permanent are the focus of this study. The compatibility of Web 2.0 applications with educational objectives, that is, the selection of the most appropriate tools for the objectives, is seen as an important factor in increasing the quality of learning and achieving success in educational activities (Bennett et al. 2012, Echeng & Usoro, 2016). Studies conducted in this context provide evidence that activities carried out with Web 2.0 tools increase students' interest and motivation towards the course, as well as their academic achievement in the field of study (Mete & Batıbay, 2019, Albán Defilippi et al. 2020, Fadlia et al., 2022, Gürleroğlu & Yıldırım, 2022, Yanarateş,

2022, Yapıcı, 2022). When the literature is examined, the number of studies in which teacher training programmes are designed with both student-centred activities and web applications is quite limited. In addition to these, no study was found in a discipline such as 'Introduction to Education' course, which includes the most basic professional knowledge and skills of prospective teachers. Therefore, it is thought that this research will contribute to the gap in the field. In addition, this study is considered important in terms of increasing pre-service teachers' knowledge and skills towards contemporary learner-centred approaches and Web 2.0 tools. In addition to these, it is expected to contribute to the course instructors in terms of designing the 'Introduction to Education' course. In this direction, the aim of this study is to reveal the opinions of pre-service teachers about the activities and web tools used in the Introduction to Education course. In line with this purpose, answers to the following questions were sought: Pre-service teachers;

1. What are their opinions about the contribution of the activities and web tools to the learning process?
2. What are their opinions on the contributions of the activities and web tools to the teaching profession?
3. What are their views on the activities or web tools that interest them the most?
4. What are their negative opinions about these activities or web tools?
5. What are their suggestions regarding the activities and web tools used in the process of teaching the course?

METHOD

In this qualitative study, phenomenology design was used. Phenomenology design focuses on phenomena that are aware of but do not have an in-depth and detailed understanding. In addition, phenomenological research aims to reveal what a phenomenon (event, concept, experience, perception, etc.) means in the lives of individuals (Yıldırım & Şimşek, 2016). In the study, as a requirement of phenomenological studies, the common meaning of the experiences of pre-service teachers regarding the phenomenon of teaching a course with various activities and web tools was tried to be discussed (Creswell, 2014). Therefore, the views on the phenomenon of lecturing with various activities and web tools in the Introduction to Education course are the main focus of the study.

Participants

The study group of the research consists of pre-service teachers (n= 125) who are studying in the first year at the Faculty of Education of a state university in Ankara and taking the Introduction to Education course in the autumn term of the 2023-2024 academic year. Details about the participants are shown in Table 1.

Table 1. Participants of the Study

	Groups	Gender		Total	%
		Female	Male		
Classroom Education	Classroom 1	23	7	30	24
	Classroom 2	25	7	32	25,6
Guidance and Psychological Counselling	Classroom 1	25	6	31	24,8
	Classroom 2	27	5	32	25,6
	Total	100	25	125	100

As seen in Table 1, participants of the study consist of 125 pre-service teachers. There are 30 pre-service teachers (23

female, 7 male) in Classroom 1 of the Department of Classroom Education, 32 pre-service teachers (25 female, 7 male) in Classroom 2, 31 pre-service teachers (25 female, 6 male) in Classroom 1 of the Department of Guidance and Psychological Counselling, and 32 pre-service teachers (27 female, 5 male) in Classroom 2. Twenty-six pre-service teachers in these branches, who took the course from the bottom and had no attendance obligation and did not attend the course regularly and therefore did not participate in the activities regularly, were not included in the study group.

Data Collection Tools

"Teacher Candidate Written Opinion Form" was prepared to determine the opinions of pre-service teachers about the activities and web tools used in the Introduction to Education course. Written opinion forms are used to collect detailed information about the subject instead of numerical data from the participants and to interpret this information (Çepni, 2012; Yıldırım & Şimşek, 2016). Participants write their real thoughts and opinions with their reasons on these forms consisting of open-ended questions (Merriam, 2009). While preparing the form, the researchers firstly conducted a literature review and a draft form was created by writing 6 open-ended questions in the context of the research questions. The researchers received opinions from two field experts about the draft form, and one question was removed because it was similar to the other questions in line with the experts' opinions. In addition, in order to determine the approximate answer time of the questions and to test the comprehensibility of the questions, the form was applied on a student who was outside the scope of the research, and the form was finalised as there were no problems.

Application and Data Collection

This study was conducted by the researcher in the Introduction to Education course in the first year programme of the Department of Classroom Education, Department of Basic Education and Department of Guidance and Psychological Counselling, Department of Educational Sciences in the autumn term of the 2023-2024 academic year. The credit of the course is 2 hours. The applications were carried out in a way to ensure that the pre-service teachers were active by using a different activity or a different web tool for 7 weeks starting from the first lesson of the semester, taking into account the content and scope of the course. The content of the course according to the weeks and details about the activities and web tools used in the course each week are presented in Table 2.

Table 2. Weeks, Content, Course Activities and Web Tools Used

Weeks	Content	Events and Web Tools
Week 1	Introduction to the Course, Course Description, Objectives, Introduction	Integration with the class through ice-breaker activity/ Brief self-introduction of each pre-service teacher using the Padlet web tool
Week 2	Basic Concepts Related to Education	Content sharing supported by videos using Emaze presentation tool by the researcher/ Question solution with Kahoot online assessment tool at the end of the course
Week 3	Historical Foundations of Education	Forming groups based on five basic historical processes in the padlet, each group doing research on their own historical process and creating content with text, visuals and videos in the padlet. Summarizing by the instructor.
Week 4	Philosophical Foundations of Education	Sharing content by the researcher using Canva presentation tool / Choosing philosophers from prospective teachers and animating with drama technique
Week 5	Legal Foundations of Education	Content sharing by the researcher using PowerPoint presentation tool/ Question solution with Plickers online assessment tool at the end of the course

Week 6	Psychological Foundations of Education	Content sharing supported by videos using Canva presentation tool by the researcher / Designing slogans, stories and posters related to the subject with station technique by forming three main groups.
Week 7	Technological Foundations of Education and 21st Century Skills	Content sharing by the researcher using Emaze presentation tool/Presentation of web tools that can be used by the researcher for presentation, animation and evaluation.

While determining these activities and web tools, it was taken into consideration that they were for presentation, discussion and interactive evaluation, and activities and tools that could activate the whole class and enable them to work in groups were tried to be selected. The usability of these web tools in the educational process, their being free of charge and their ease of use influenced the selection. The process was completed in a total of 14 lesson hours for seven weeks. After the seven- week process was completed, the "Pre-service Teacher Written Opinion Form" prepared by the researchers was distributed to the pre-service teachers and the volunteer pre-service teachers were given free time to fill out this form. The forms were applied by the researchers.

Data Analysis

Content analysis method was used for the analysis of the qualitative data. Content analysis allows the emergence of world views, attitudes, prejudices, ideas and their comparison. Data that are similar to each other are collected around common themes (Marvasti, 2004). In the research, firstly, the forms were numbered. In this context, the data collected in writing were coded, then combined under sub-themes according to the similarity of meaning, and these sub-themes were collected under the main themes. In the last stage of the content analysis, the findings were tried to be explained by determining the relationships between the themes obtained in the light of the data. In order to determine the reliability of the coding, the coding list prepared separately for each question by the researcher was also used by the other researcher. The codings made by both researchers were matched and the differences that emerged were determined.

Validity and Reliability

In qualitative researches; the level of accuracy of the research results and the conformity of the results to the general framework of the research are related to validity; the fact that the research results are free from bias and errors, as well as the ability to repeat the results by different researchers is related to reliability (Yin, 2009; McMillan, 2004). In this context, the following measures were taken to increase the validity and reliability of the research; In order to increase the validity of the research, the statements of the participants were written down after the interview, and during the interview, it was tried to ensure that the participants expressed their opinions correctly and sincerely by stating that their opinions would only be used in this research and their identities would be kept confidential. Thus, it was aimed that the data obtained during the interview process reflect the real situation. In addition, during the content analysis, the data were checked several times by the researchers, the sub-themes created in the content analysis, the relationships between the themes and the relationship between the main themes were checked and an integrity was tried to be ensured. The training activities, data collection process and data analysis applied in the study were explained in detail. In order to increase the reliability of the research, the findings of the content analysis were tried to be conveyed without comment. What was done in the research process was presented in detail. The obtained data and codings are kept by the researchers so that they can be re-examined.

FINDINGS

The Contribution of the Activities and Web Tools to the Learning Process

In the first research question, the opinions of the candidates about the contribution of the activities and web tools to the learning process were asked and the answers are presented in Figure 1 below.

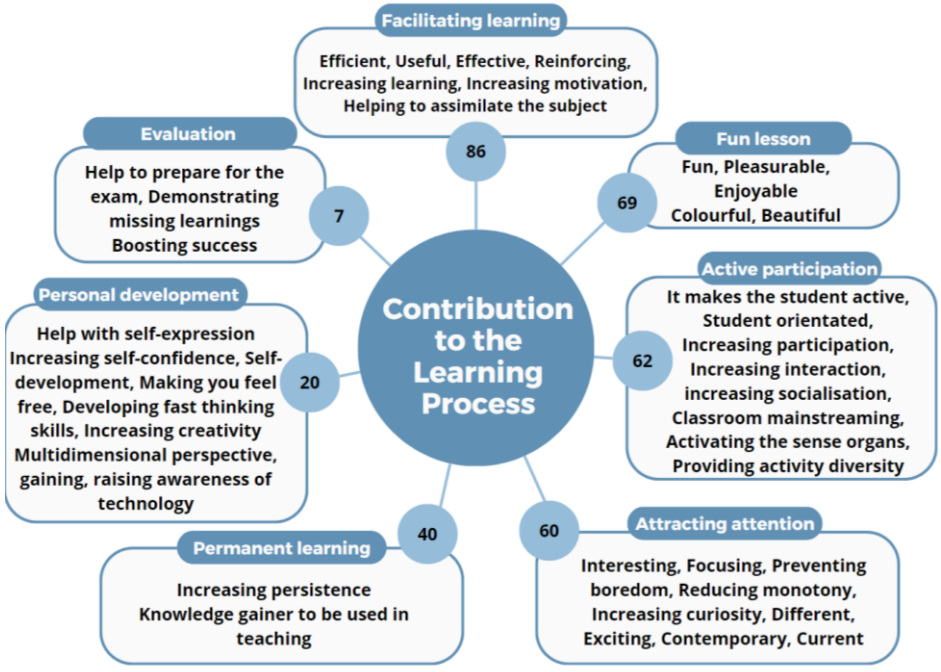

Figure 1. Contribution of Activities and Web Tools to the Learning Process

Participants see the most important contribution of the activities and web tools to the learning process as *"facilitating learning"*. In addition, *"learning by having fun"*, providing *"active participation"* and being *"attracting attention"* were seen as frequently mentioned contributions by the participants. Some of the participants with this view explained their thoughts as follows;

S1. "The use of these activities and tools facilitated my learning by making the lesson productive for me. Such applications both made the information permanent, reinforced what I learnt and increased my attendance to the lesson. In traditional lessons, we get bored quickly because they are verbal and abstract."

S2. "I think these applications make the lesson more fun and enjoyable. It also increases mastery of technology. The lesson becomes interesting, so it is easier for me to learn."

S4. "I think the lesson has become more effective, more visual and easier to understand."

S5. "The activities we did in the classroom and the web tools we used were very useful. We especially reinforced what we learnt with the kahoot application that we participated in as a class. Apart from that, the activity of animating philosophers on the philosophical foundations of education was very entertaining. The information we learnt by applying it remained in our minds in this way, making it easier for us to learn. Also, our interaction with each other as a class increased."

S39. "Solving questions on Kahoot both increased my motivation and helped me to see my deficiencies. In other words, it made it easier for me to learn, and I also learnt by having fun."

A participant who stated that he had heard about the web tools used in the lesson for the first time and that he did not like the use of technology in the lesson changed his opinion after he recognised the web tools and emphasised their contribution to learning. S6's explanation for this is as follows; *"I had heard about the web tools we used in this course for the first time. Normally, I did not like the use of technology in the lesson, but after getting to know and use the applications, it was more fun to teach in this way. Padlet, the first application, was a tool for a student to express his feelings more easily. It was very enjoyable to solve questions with Kahoot. Instead of ordinary tests, solving them one by one as in Kahoot and a general sweet competition motivated us and contributed to our learning."* In addition to S6, S3, who drew attention to the contribution of these activities and web tools to the learning process and their attractiveness, stated the following: *"In this way, the lessons are more permanent and fun. When I come to the lesson, I come willingly and curiously with the thought of what we will do today."* The fact that these activities and web tools arouse students' curiosity and make them come to the lesson eagerly is very important especially for pre-service teachers' professional knowledge courses and contributes to the learning process to a great extent.

S86's statement also draws attention as an opinion that should be taken into consideration in terms of coming to the lesson willingly and also contributing to learning for the sub-theme of *"individual development"*; *"I think each activity was very good. I think the fact that the lesson process went like this made us more comfortable, self-confident, more sincere and active in the lesson... I can sincerely say that I come to the lesson with joy and happiness."*

Again in this direction, the opinion of S53 summarised this situation; "*I think it was very useful in terms of activity diversity. Each of the lessons was different and enjoyable. It saved it from being boring."*

When we look at what the participants expressed in the *"evaluation"* sub-theme, the explanations of S60 and S67 underlined the themes of helping to prepare for the exam, showing missing learning and increasing success in terms of the contribution of these activities and web tools to the learning process;

S60. "The *most important thing for me was that the information was permanent as a result of the activities. If the lesson was taught in a monotonous way, our grades would not be so good. These environments where we felt the most free were very useful."*

"We learnt while having fun for seven weeks. Using web tools in our lessons during these weeks facilitated my learning activities made my learning permanent. Measurement and evaluation tools such as Kahoot helped me to realise and focus on what I have learnt and increase my success the use of web 2.0 tools broadened my horizon. I discovered that these tools are so diverse and can be used in many fields."

S33 expressed how kahoot, which is one of the online assessment tools and used in the lesson, affected his quick thinking skills as follows; "*I think that kahoot also improved my quick thinking skills as we solved the questions in a race in the classroom."*

The statement of S8, which covers the contributions of the activities and web tools to the learning process in terms of

facilitating learning, learning by having fun, enabling active participation and being remarkable, is one of the answers addressing the activities and tools together; *Our lessons were exciting because Kahoot gave the atmosphere of a competition. We did not know that we would change in the station technique, we were surprised when we suddenly changed the tasks, but when we tried to complete those tasks easily, things became more exciting and fun. When our friends became philosophers in the drama, it was an interesting, funny and permanent activity*. When we look at what the participants expressed about the contribution of these activities and the use of web tools to the learning process, it is possible to list some examples as follows: *S22. .... these activities enabled us to socialise and learn by having fun with our classmates in an effective way. S34.I feel that my sensory organs are more active while teaching with Web 2.0 tools. And having fun and learning at the same time rather than traditional lecture techniques increases the interest in the lesson and the success of the lesson at the class level.*

S37. Carrying out such activities helped me to keep the subjects in my mind more. Question and answer and marketplace techniques were very useful for us to increase our self-confidence.

S45. ...with such different activities and Web 2.0 tools, I think the lesson was more effective and memorable and facilitated our learning. ...our participation increased, it was a different experience for us. Taking the place of philosophers with drama was more memorable...solving questions from kahoot was also efficient and fun for us.

S52. It developed a multidimensional perspective and provided a more effective and permanent lesson process.

S58. I think using Web 2.0 tools makes the lesson more active. Because no matter how good the lecture is, after a while, we get distracted and we get disconnected from that lesson. The applications we use make it easier for us to learn information. I think learning visually is a better practice for most students.

S63. The activities we did in this semester's Introduction to Education course made the course both instructive and fun for us. Thanks to these activities, we both merged with our classmates and got incredible efficiency. The web 2.0 tools we saw in the lesson gave us many ideas to communicate better with our students in the future.

S65. It enabled me to participate more actively in the lesson and to pass the lesson in a fun way. Sometimes I did not even understand when the lesson started and when it ended.

S72. ...web 2.0 tools were very useful for me to internalise the subjects. Testing the information we learnt with such tools made it easier for me to learn. I find it very useful because it makes us partners in the lesson and does not bother us. I think that it is far from familiar and primitive methods and it is suitable for our generation. We are in a changing and developing world. ...we need to catch up with the age and appeal to students. That is why I find Web 2.0 tools useful and remarkable.

S101. I was very interested in teaching with activities and web 2.0 tools. The lessons were very fun and beautiful. I am very pleased with this way of teaching. With Kahoot, we prepare ourselves for the exam by seeing the questions prepared by our teacher and it is very effective in our evaluation. We are also happy while learning. padlet helps me to focus on the lesson.

S103. It enabled the class to socialise and to have an active lesson, it was good.

S119. I am a pre-service teacher. We taught the introduction to education lessons with love and fun. I gained different perspectives by teaching the lesson in this way...

S124. I think that such applications are more effective in terms of participating in the lesson...

S125. This way of teaching the lesson was very topical. It was productive for me.

The following statements were made by the participants while explaining the contribution of these activities and web tools to learning by making comparisons with other courses. They explained their contributions in terms of facilitating learning, learning by having fun, providing active participation, being remarkable, providing retention in learning, contributing to individual development and evaluation by emphasising how they emphasised these comparisons; *S1. Compared to other lessons, it is easier to remember and grasp the subject. When there is only lecturing, we can get distracted quickly. S2. In the normal lesson, the subject is explained and passed. But these activities measure whether the subject is understood or not. We have a fun lesson. By seeing different applications, we become technologically advanced.*

S5. Compared to other courses, thanks to the web tools, we have the opportunity to teach a lesson intertwined with technology. Also, thanks to these tools, we were able to interact with our friends. The lessons in which we are intertwined with technology are more permanent than the lessons with only lectures. First of all, it is definitely more interesting. I can keep my focus on the subject for a much longer time than in normal lessons. it is much more permanent.

S8. We are more passive in the lessons based on the lecture method, which we have experienced a lot. Lessons are monotonous and boring in general. But with these activities, we are in a more active position. The lessons are fun, exciting and interesting.

S12. It is more fun in a more active way. Full participation of everyone in the lesson is ensured. It helps us to focus more on the lesson. Lessons in which the students do not actively participate and only the teacher talks are very boring for me, I get sleepy and my attention is distracted it is very efficient to involve students in the lesson by using such activities and applications instead of teaching an ordinary lesson also increases our motivation.

S22. …compared to other courses, the lessons taught with web tools increased retention. I think my other friends have the same opinion with me about this issue. It allows us to interact and socialise with my friends, to have fun in the lesson, to use and understand our knowledge. However, in normal lessons, it is not efficient because the teacher is at the centre and does not involve us.

S25. Lessons with only lectures are seen as boring by us students. With web tools, our attention was constantly on an activity in the lesson. Therefore, we realised a more efficient learning process.

S26. What is explained in normal lessons stays in our minds only for that moment. But with web tools, the lessons are more memorable in terms of visual and auditory aspects than normal lessons.

S36. I socialised more with my friends and learnt more effectively. We do not use technology much in normal lessons. But we used technology with web tools and we learnt more effectively.

S38. It became a more technological and more suitable for the age.

S39. In other lessons, I can listen for 10 minutes at most, which means that the remaining hours of the lesson are wasted. By using these activities and tools, we learnt both more permanent and more fun.

S40. We had a fun and understandable lesson process rather than a boring and closed lesson. S54. It helped me to focus more easily because they were interesting.

S63. the activities in which we participated and were involved in the lesson helped us learn better. We also enjoyed it very much. In every lesson, we wished that this lesson would not end. I wish this lesson was longer.

S65. I felt more productive, social and active in the course. Since we did not only verbalise the theoretical knowledge and finish

the course as in other courses, the information was more permanent.

S73. Compared to other lessons, I think the lessons we teach with web tools are carried to another dimension. For example, while we were doing our best to end the lesson as soon as possible because we were bored in the lesson that the teacher taught straight, thanks to these web tools, we were doing our best to start the lesson as soon as possible. I think it has a great contribution to the lesson. When we teach with these tools and activities, we are active in the lesson and I think the lesson is more fun. Lessons in which we are passive are boring, but I do not remember a time when I was bored in our Introduction to Education course.

S116. Since we grew up in the age of technology, it is more enjoyable. And it makes it easier to focus on the lesson. While the other lessons were boring or only for signing autographs, the Introduction to Education lesson was more productive.

Competences Developed by the Activities and Web Tools Used in the Lesson Regarding the Teaching Profession

In the second research question, the opinions of the candidates about which competences related to teaching profession were developed by the activities and web tools in the course were analysed and given in Figure 2.

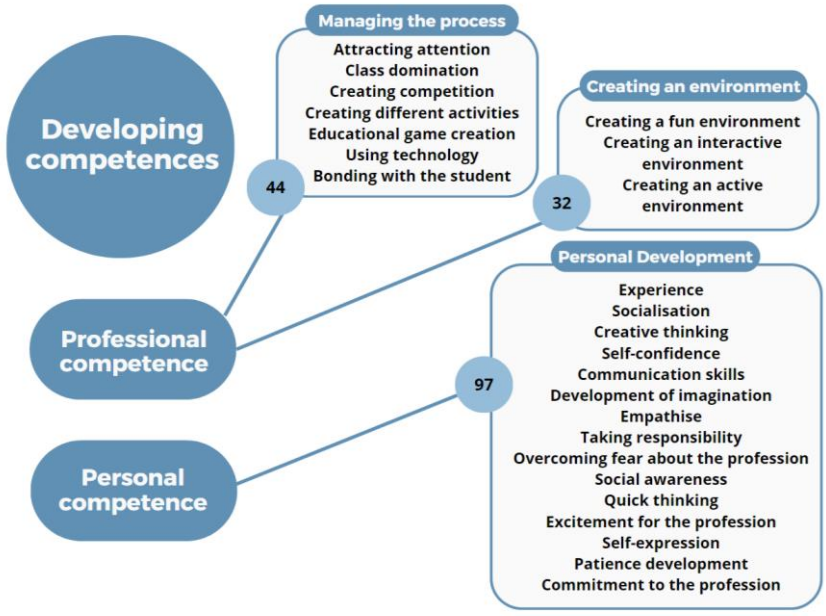

Figure 2. Competences Developed by the Activities and Web Tools in the Lesson

As can be seen in Figure 2, the participants' views on which competences related to the teaching profession were developed by the activities and web tools in the course were categorised under two main themes; *"personal competences"* and *"professional competences"*. The majority of the participants (f=97) emphasised their personal development with different expressions. For example, S1 emphasised the improvement in her self-confidence and explained as follows; "*First of all, I can say that it improved my self-confidence. We shared our feelings and thoughts with the class by using these tools. In addition, we learnt the course materials that we will present to the students when we become teachers in the future.*

Thus, we take firm confident steps." S63's explanation of his development in terms of experience and his development in self-expression competence was a remarkable opinion; "*The activities we did in this course and the tools we used were a good experience for me and I thought about how I could apply them to my students in the future. I also think that my ability to express myself has become better. In the activity on the padlet we did in the first week, I participated in the activity of introducing ourselves by hesitating shyly, but as the process progressed, I saw that I could express myself better and more comfortably."* S39 emphasised the development in self-confidence, communication and socialisation competencies with the following activity examples; "*I think each activity developed different competencies. For example, the philosopher activity was effective in increasing self-confidence and communicating with the class. Another example is that the station technique improved group work and socialisation.* In addition to this example, S65 expressed the development in communication skills as follows; "*The competitions, group work, etc. that we did from time to time improved my communication skills and I felt more sociable because they enabled me to enter into dialogue with my other friends in the class."* S73's explanation of her development about overcoming her fear about the profession was also one of the remarkable expressions; *"I came to university with great fears; I wonder if I will be a good teacher or if I will be enough for my students... but I overcame this fear with this course of our teacher. I think that what we learnt especially in this course has a great contribution to the prospective teacher.* S14 and S26 expressed the development of their personal competences in a very short and concise way as follows; *S14. My social awareness has improved... S26. I think it helped us to develop our sense of empathy and imagination.* Participants emphasised their professional development in a concise way. For example, S19 explained his development related to the teaching profession for the future as follows; *It definitely provides positive developments for prospective teachers. It gave us an idea about how we can make the lessons fun for our students in the future I think my creative thinking skills have improved.* While S2, S7, S27 and S30 underlined their development especially in terms of using technology, they also added their development in other competences; *S2. It improves technological sense. It develops analytical and inquisitive thinking. S7. It definitely improves using technology as a skill.... S27. My skills of using technology and expressing myself have improved. As a skill, it definitely increased my technological, aesthetic, measurement and evaluation, and classroom mastery skills.* In addition to these competences, S57, who focused on the fact that the different activities provided prospective teachers with different perspectives, emphasised this with the following statement; *S57. The lessons taught with different activities provide prospective teachers with different perspectives.*

Interesting Activity or Web Tool and Reasons

In the third research question, the participants' views on the activity or web tool that attracted their attention the most and why were analysed and presented in Figure 3.

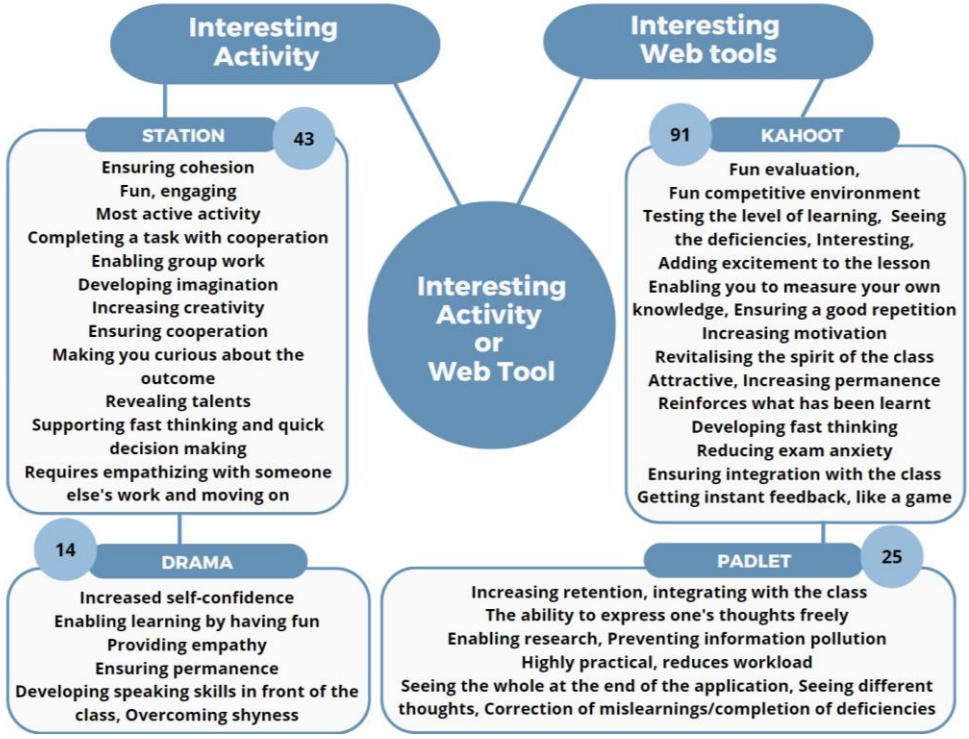

Figure 3. Interesting Activity or Web Tool and Reasons

As seen in Figure 3, the majority of pre-service teachers (f=91) stated that they were most interested in kahoot, one of the Web 2.0 tools used in online assessment. While explaining the reasons, the fun factor was emphasised the most. In addition, various features of kahoot such as providing a fun competition environment, testing their learning levels, and adding excitement to the lesson were mentioned.

S5, one of the candidates who thought that Kahoot made the lessons fun, explained his reasons as follows; *The activity that interested me the most was the use of kahoot application. Because it was very fun to solve questions together in a virtual environment as a class. In addition, being in a competitive environment has never been so much fun.*

While S16 emphasised the fun of kahoot, his explanation of its contribution to coming prepared for the lesson and increasing the desire to study, as well as underlining its effect on retention as follows was an expression that attracted the attention of the researchers; *Playing kahoot is very fun. I am very happy on the day we will play Kahoot in the lesson. Competing with the others in the class, the competitive environment increases my desire to find the right answer in every question. On the days when we play Kahoot, I wish I had looked at this topic and answered it correctly. It is a very good repetition method that keeps the correct answers in my mind. It also helps me to see the subjects I am missing.*

Similar to this view, S19 also stated Kahoot as the tool that attracted his interest the most and, like S16, expressed the contribution of Kahoot to permanence and also emphasised that it reduced his anxiety about the exam and enabled him to integrate with the class; *Kahoot is the application that attracted my interest the most. ... Thanks to Kahoot, my fear of the lesson and the exam decreased. Yes, I was listening to the lectures, but I had no idea what kind of questions might come in the exam. Thanks to this activity, I saw how doable the questions were. Also, since it was the first weeks, I had not yet merged with the class. It was very good for me to be in this game at the same time with everyone. In addition to all these, I still remember what we covered in that lesson. I think every teacher should have his/her students play such games.* It is possible to list some examples from the statements of other candidates about the reasons why kahoot attracted their interest as follows:

S3. Solving questions from Kahoot because it is both exciting and helps me to measure my own knowledge.

S34. In the activity we do in Kahoot, there is both a competitive environment and it is like a quick repetition because it is like a subject summary.

S54. Kahoot was the most interesting activity for me. It created a competitive environment. It was the most effective method for me in terms of teaching knowledge.

S69. It was Kahoot because it revitalised the spirit of the class. It enabled us to learn the subject by laughing and having fun.

S40. Kahoot. Because it both measured knowledge and increased interest in the lesson and entertained.

S73. I liked the kahoot application the most because what we learnt in the lesson was reinforced by this application.

S93. Definitely kahoot in my opinion, it is an excellent application in reinforcing the lesson.

S7 stated Kahoot as the most interesting tool and station technique as his favourite activity. While other candidates stated a single activity or tool, this candidate explained it as both an activity and a web tool; The *competitions we made from Kahoot and the station activity. Kahoot was quite fun and interesting. The station activity was the one I enjoyed the most. Doing something as a group and completing a product created by someone else's imagination with your own imagination...*

Regarding this sub-question, the candidates stated that the most interesting activity after Kahoot was the station technique. While explaining the reasons, it was mostly emphasised that it provides integration with the class, it is fun again, and it provides group work. In addition, various features such as completing a job with hand cooperation, developing imagination, increasing creativity, providing cooperation, making you wonder about the result were mentioned. S6 explained why the station technique was the most interesting activity for him as follows; *Station was the most interesting activity for me. It provided cohesion in the class. It was fun to do something as a group. We had the opportunity to talk to our classmates whom we did not talk to during the term. Writing stories, preparing slogans and designing posters. These were good for us to bring out the talents that exist within us. The things that came out at the end of the day were also very fun.* S8, S39, S98 justified the attractiveness of the station technique as its contribution to group work and explained it with different expressions as follows: *S8. The station activity was the one I liked the most. Because it was an activity in which everyone worked hand in hand and we were the most effective.*

S39. I think the best activity was the station technique. Because in addition to group work, everyone in the class had a labour, which was nice.

S98. It was a station activity. Because it enabled us to get closer to each other as a class.

It is possible to list some examples from the statements of other candidates about the reasons why the station technique attracted their interest as follows: *S10. It was the station that attracted my attention the most because we continued the subject that we did not start and had no idea about and this supported our ability to think fast and make quick decisions...*

S53. It was a station activity. Because I was very curious about the outcome from the very beginning.

S58. Actually, it was the station that interested me the most. Because at first everything was conveying our normal thoughts, but it was very nice and very enjoyable that it required us to continue by empathising with what was done or written by another group by thinking about how they wanted to think.

As can be seen in Figure 3, when asked about the most interesting activity or tool, the candidates frequently mentioned kahoot in the first place, then station technique. Then, padlet tool and drama technique were mentioned. While explaining the reasons for Padlet's attracting interest, its features such as increasing permanence, integrating with the class, expressing thoughts easily, enabling research, preventing information pollution, and being very practical were emphasised. When we look at the reasons for drama, it is seen that there are expressions such as increasing self-confidence, providing learning by having fun, providing empathy, providing permanence, improving speaking skills in front of the class, and overcoming shyness. It is possible to list some examples of the statements of the candidates regarding these reasons as follows:

S1. Padlet was very nice. Because it was not an ordinary meeting or ordinary question and answer activities. ...it was a nice experience to express oneself. Most people were able to write what they thought comfortably...

S50. Padlet. Because it protects individuals from information pollution. If a person has learnt something wrong about that subject, it can be corrected, the deficiencies can be completed. If it is used in a project, it provides practicality and reduces the workload.

S119. The most interesting activity for me was researching and uploading my own location to the padlet application. I never forget the topic I researched.

S70. The fact that everyone posted their own work on Padlet enabled us to pay more attention to our own subject and we could see what others had done. At the end of the application, we could see the whole.

S37. The drama activity attracted my attention the most I think that the fact that our friends went on stage and re-enacted the philosophers who lived in the past made the lesson both more fun and more memorable.

S46. The drama activity was the most interesting for me. We had fun and learnt while preparing and presenting it.

S48. What interested me the most was when we were philosophers in the classroom. In this way, our ability to speak on stage and address more people increased. Speaking in class before the internship did not directly tell us about the lives of philosophers, but by including us in the subject and doing such an activity in a very fun way, our feeling of shyness disappeared.

Negativities Regarding These Activities and Web Tools

In the fourth research question, the negative opinions of the candidates about these activities and web tools were analysed and presented in Figure 4.

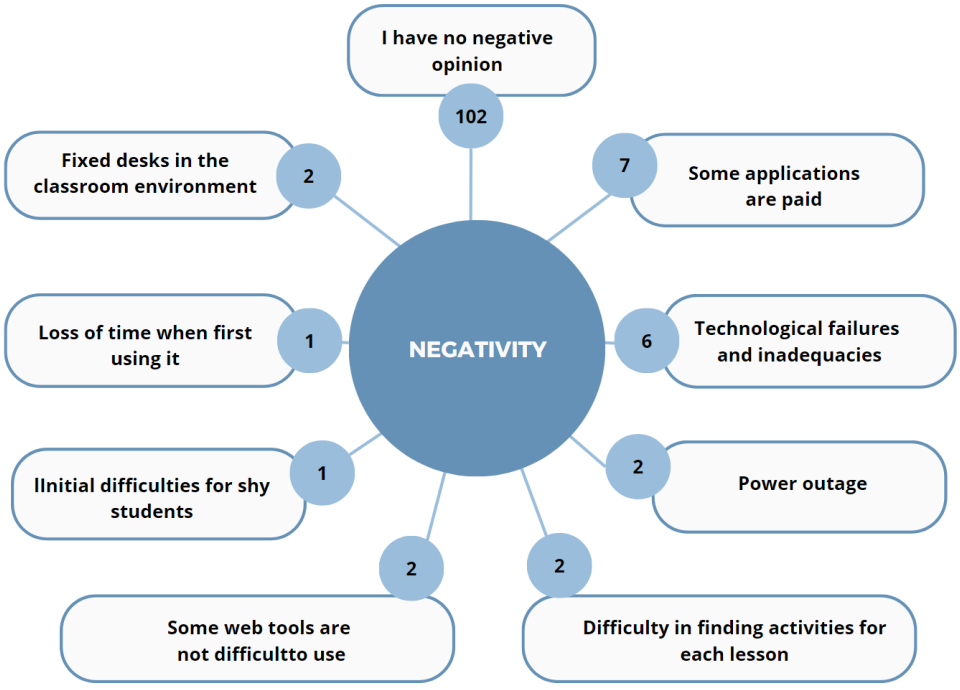

Figure 4. Negativities Regarding Activities and Web Tools

A great majority of the participants (f=102) stated that they did not have any negative opinion about these activities and web tools. S42, one of the pre-service teachers who supported this view, said the following: "I don't have any negative opinion, the lesson goes very well." On the other hand, some of the candidates (f=25) mentioned some negativities. However, among these negativities, the fact that some applications are paid, technological problems, power outages, and the difficulty of using some web tools come to the fore. The opinions of the candidates regarding these negativities are presented below.

S3. I have no negative opinion but I do not think that some web tools are easy to use.

S4. If the person using these tools does not have a good command of their use, he/she may lose time if he/she uses them for the first time.

S5. There may be some technological problems. This can lead to loss of time. S10. If we do not use it properly, it may be a waste of time.

S14. Some students cannot participate in the activities due to technological inadequacies.

S16. It may not always be possible to use it in every lesson.

S20. Not everyone may have enough internet.

S27. I could not use it when the electricity was cut.

S44. In some activities, I could not be active because we were a group, because the ideas of "you do it, I will do it" passed in the group conversations.

S47. You need internet and telephone to use these web tools.

S48. Some applications are paid or paid after a certain period of use.

S67. The fixed desks in group activities cause a lot of problems. Communication cannot be provided effectively.

S73. My only negative opinion about these tools is the lack of internet. If you do not have internet on your phone, you may have some difficulties and you may not be able to participate in these activities. Therefore, I think it would be very good to improve the internet in the classrooms.

S88. In the lesson where we made group presentations with Padlet, everyone prioritised and focused on the subject of their own group. They did not listen to other groups much.

As it can be seen, the pre-service teachers interpreted the reasons such as technological glitches or difficulty in using the applications as negativity. Apart from these, S65, one of the pre-service teachers, explains in detail that he had difficulty at first while participating in these activities or using web tools, but this negativity improved his communication skills: *I am a really shy and timid person, so communicating with other people and coming to the forefront was very difficult for me at first while participating in these activities and using the tools. But even though this affected me negatively, I think I improved my communication skills.* As can be seen, the fact that S65 was aware that the negativity she stated contributed to her communication skills was seen as a remarkable statement by the researchers.

Suggestions For The Course Taught With These Activities And Web Tools

Finally, the suggestions of the candidates regarding the course taught with these activities and web tools were analysed and presented in Figure 5.

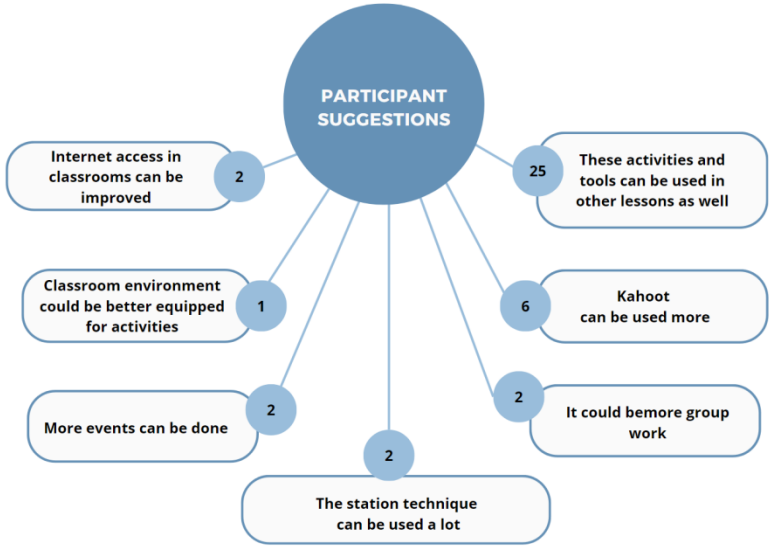

Figure 5. Suggestions Regarding the Lesson Taught with These Activities and Web Tools

When the participants were asked about their suggestions regarding the course taught with these activities and web tools, as seen in Figure 5, they suggested that these activities and web tools should be used more. This can be interpreted as an indication that the activities and web tools were liked by the participants. In particular, while analysing the answers, it was seen by the researchers that the majority of the participants emphasised that they were very satisfied with the course, that they had a lot of fun in this course, that they learned while having fun and that they were never bored, so they did not have any suggestions. The opinions of the candidates regarding the suggestions made for more use are presented below.

S3. I would like to see more group work in the lessons.

S8. In general, everything was good, maybe the station technique can be used more. It both makes the lesson more interesting and makes it easier for us to mingle with friends.

S9. More activities can be done.

S13. These activities and tools can be used in other lessons, and students can actively participate in the lesson.

S16. This lesson is my favourite lesson. These activities can also be used in other lessons.

S19. I think this way of teaching the lesson is very good. I have never had any difficulty in getting out of bed or not attending the lesson. In short, your method of teaching the lesson is very appropriate in this way. I suggest that other lessons should also be in this way.

S28. More kahoot can be played.

S43. We should also teach other lessons with these activities. Learning by memorising from books is boring and difficult, but we learn more easily this way.

S55. In other lessons, I would like to do more group lessons and lessons with web tools.

S57. In other courses, more group work and in-class interactive lessons can be taught. When I explained our lesson to my friends from other departments, they liked it very much. They said that they wished our lessons were like that. Other lessons can also be done with these activities and tools.

S87. It would be good to organise the classes more suitable for the activities. S93. I think kahoot should be put at the end of each lesson.

RESULTS, DISCUSSION AND IMPLICATIONS

In this study, educational activities enriched with web tools that will make pre-service teachers active in the teaching process were implemented in the Introduction to Education course. The aim of the research is to shed light on the difficulties and problems encountered as well as good examples in practice by examining the opinions of pre-service teachers about the activities implemented in this process and the web tools used. In this study, answers to five research questions were sought. In the first research question, the researchers analysed the opinions of pre-service teachers about the contribution of the activities and web tools to the learning process. The results showed that the activities and web tools contributed to the learning process in terms of facilitating learning, learning with fun, active participation, attracting attention, permanent learning and individual development. When the literature on this result is examined, it is seen that it coincides with the results of many studies. For example, Yapıcı (2022), in his study looking at the experiences of biology education graduate students in developing content with web 2.0 tools, stated that the positive aspects of web 2.0 tools such as being interesting and fun, increasing retention in learning and providing active participation in the lesson came to the fore. In addition, it was emphasised that they have advantages such as providing subject repetition, increasing interaction, improving technology literacy, saving time, providing easy access to resources and improving collaboration. Akbaba Dağ and Kılıç Şahin (2024), in their study to determine the opinions of prospective classroom teachers about Web 2.0 tools, determined that the candidates defined web tools as tools that are used to make the course content efficient, effective, permanent and fun and that facilitate the user's work. Sadaf (2013), in his research on the integration of Web 2.0 technologies into the course, emphasised that pre-service teachers stated that Web 2.0 technologies are useful in improving students' learning experiences by using student participation, interaction, communication and innovative learning tools. Dere and Kıral (2024), as a result of the research examining the perspectives of prospective social studies teachers on the use of Web 2.0 tools, explained that prospective teachers stated that Web 2.0 tools contribute to learning, facilitate teaching, provide permanent learning, and attract attention by making social studies teaching fun. Gürsoy and Göksün (2019), in their research on pre-service science teachers' experiences in developing educational content using Web 2.0 tools, stated that pre-service teachers emphasised the advantages of Web 2.0 tools such as being quite fun, improving their technology literacy and providing more retention in learning. As a result of the research conducted by Gürleroğlu and Yıldırım (2022), it was determined that students found science teaching using Web 2.0 tools more fun and memorable, their achievement, motivation and interest increased, and they would study the science course more effectively by using technology. Aytan and Başal (2015), in their study titled "Investigation of Turkish pre-service teachers' perceptions towards web 2.0 tools", emphasised that pre-service teachers stated that web 2.0 tools improved their creativity power. These results support the results of this study.

In the second research question, the researchers analysed the opinions on the contributions of the activities and web

tools to the teaching profession. According to the results obtained, it is seen that the pre-service teachers personally developed in the competencies of socialisation, creative thinking, self- confidence, communication ability, development of imagination, empathy, taking responsibility, overcoming fear about the profession, social awareness, quick thinking, excitement for the profession, self-expression, patience and commitment to the profession. It was also observed that they stated that they improved in managing the process and creating an environment as professional competences. Similarly, Talan and Batdı (2022), in their study to determine the views of pre-service teachers on the professional competencies of the use of Web 2.0 tools in education, determined that Web 2.0 tools can have a positive effect on the development of professional competencies in teaching and can provide permanent learning by making lessons enriched with visual content fun, fluent and understandable.

In the third research question, the researchers found that Kahoot was the most interesting tool for pre- service teachers. When we look at the reasons why Kahoot is the most interesting tool, we can see that it is fun, it provides evaluation, it creates a fun competition environment, it provides the ability to see the deficiencies by testing the learning level, it adds excitement to the lesson, it provides to measure your own knowledge, it is interesting, it provides a good repetition, it increases motivation, revitalising the spirit of the class, being attention-grabbing, increasing retention, reinforcing what has been learnt, developing quick thinking skills, reducing fear of the lesson, ensuring integration with the class, receiving instant feedback, being like a game, being effective in teaching information and reducing exam anxiety. Similarly, Mete and Batıbay (2019) determined in their study that Kahoot, one of the Web 2.0 tools, attracted students' attention as an educational tool and increased motivation during the course. In the study conducted by Tetik and Korkmaz (2018) in line with the opinions of formal and distance education students towards gamification with Kahoot, it was determined that Kahoot Web 2.0 tool increased motivation. Çetin (2018), in his study examining the usability of Kahoot as a digital measurement tool in primary school, stated that the teacher in the study defined Kahoot as a tool that increases students' motivation. Yapıcı and Karakoyun (2017) examined the effect of Kahoot on the motivation of pre-service biology teachers and found that Kahoot Web 2.0 tool increased the motivation of pre-service biology teachers. However, most of the pre-service teachers presented positive opinions about the use of Kahoot. Medina and Hurtado (2017), in a study conducted with undergraduate students, examined the effect of Kahoot on vocabulary learning and student motivation for foreign language education. According to the findings of the study, Kahoot-supported activities increased students' vocabulary knowledge and increased their motivation. It is seen that the findings of the studies related to Kahoot overlap with the findings of this study.

In the third sub-question, it was determined that station technique, padlet web tool and drama technique attracted attention respectively after Kahoot. When the reasons why the station technique is an interesting activity are examined; it is determined as providing cohesion, fun, interesting, making the student active, completing a job with cooperation, providing group work, developing imagination, increasing creativity, providing cooperation, making the result curious, revealing talents, supporting quick thinking and quick decision making, requiring to continue someone else's work by empathising. Among the reasons why Padletin, one of the web tools, attracted the interest of pre-service teachers were listed as increasing permanence, expressing thoughts easily, integrating with the class, enabling research, being very practical, reducing workload, enabling to see the whole at the end of the application, enabling to see different thoughts, protecting from information pollution, enabling correction of mislearnings and completion of deficiencies. In the study, when the reasons why pre- service teachers are interested in drama technique are examined, it is seen that it is emphasised that it increases self-confidence, provides fun learning, provides empathy, provides permanence, improves speaking skills in front of the class and helps to overcome shyness. When the studies related to these results are examined in the literature, it is seen that similar results are obtained. For example, Karadağ (2020) conducted a study to evaluate the use of the station technique in teaching Turkish as a foreign language according to students' views and concluded that the participants found the station technique different and useful, that it increased communication between students and teachers, that it contributed to students in various aspects, and that students thought that this technique should be used in other courses. Bekereci, Şimşek, Hamzaoğlu, and Yazıcı (2020) examined the effect of using the station technique in science course on students' academic achievement and science attitudes and stated that students had positive thoughts about the station technique. Türe, Yalçın and Altun Yalçın (2020) investigated the effect of using the station technique in teaching socioscientific subjects on students' academic achievement and motivation to learn science and as a result, they found that students found the teaching of socioscientific subjects using the station technique useful, fun, remarkable and permanent. Korkmaz, Güç, Çakır, and Bacanak (2016), in their study to determine the effect of station technique on students' academic achievement in mathematics course and students' opinions about the technique, concluded that station technique applications developed positive attitudes towards the course, provided students with the opportunity to socialise and participate effectively in the course, created team awareness, developed feelings of responsibility, and contributed to the teaching of the subject. These results are similar to this study.

In the fourth research question, the researchers analysed the negative opinions of the candidates about these activities and web tools. According to the results obtained, it was determined that the majority of the candidates did not have any negative opinions about these activities and web tools. Among the negative opinions, it was determined that some applications were paid, technological problems, power outages, and some web tools were difficult to use. Similarly, pre-

service teachers who participated in the study conducted by Özpınar (2020) evaluated the requirement of internet and technological tools for Web 2.0 tools as an important limitation. In Dere and Kıral's (2024) study, it was determined that most of the pre-service teachers did not mention any limitations of Web 2.0 tools, but some of the pre- service teachers thought that Web 2.0 tools have limitations in terms of requiring a long time, being paid, requiring technological tools, being in English, complex interfaces, systemic errors and classroom management. Grosseck (2009), in his study evaluating the use of Web 2.0 in higher education, stated the need for a quality internet connection for Web 2.0 tools as a disadvantage.

In the last sub-question of the research, when the participants were asked about their suggestions regarding the course taught with these activities and web tools, it was determined that they suggested that these activities and web tools should be used more. In particular, it was seen that the majority of the participants were very satisfied with the lesson, they had a lot of fun in this lesson, they learnt while having fun and they were never bored, so they did not have any suggestions. Similar to this result, Bozpolat and Arslan (2018), in their qualitative study on the use of the station technique in Turkish teaching, found that all of the students wanted the station technique to be used again in the Turkish lesson, as well as some students wanted it to be used in other lessons. Another result obtained was that the application of the station technique had a positive effect on students in terms of cognitive, course-oriented perspective and social relations.

The results of the research show that the activities and web tools contributed to the learning process of pre-service teachers and developed various personal and professional competences related to the teaching profession. In this direction, it is recommended that the learning process in faculties of education should be supported with different activities and various web tools as much as possible, teaching activities and web applications that support collaborative learning, active participation, interest and motivation should be investigated in different courses and their use should be expanded. It is also hoped that this will encourage pre-service teachers to integrate their courses with various activities and web tools in their future professional lives. This research was conducted in the first year Introduction to Education course of the university. Future studies can be conducted at different levels and in different courses.

Non-Conflict Declaration: Free versions of the Web 2.0 tools used in the research were used.

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