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Opinions of Music Education Department Students on Web 2.0 Tools: The Case of Bursa Uludag University

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Abstract:

Introduction: Today, thanks to information technologies including Web 2.0 technology, educators can make their lessons more efficient and understandable. In addition, they can encourage active participation of students in this way. With the increase of online education applications during the Covid-19 epidemic in the world, the use of Web 2.0 tools in education has also increased.

Methods: Explanatory design, one of the mixed research methods, was used in this research. Within the scope of this research, a questionnaire was applied to the participants to determine their perceptions about Web 2.0 tools, and then interviews were conducted with interview questions created in line with the analysis of quantitative data. 69 pre-service teachers from a large Turkish state university participated in the quantitative stage of the research and five students participated in the qualitative stage.

Results: In line with the data obtained, it was concluded that the music teacher candidates' perceptions of Web 2.0 tools were high.

Discussion: In the survey application, which forms the basis of the quantitative step of the research, it is seen that the majority of students gave the answer "I agree" or "strongly agree" to survey items. Especially in 2020, with the Covid-19 pandemic worldwide, distance education been implemented for a while thanks to technology, and this situation brought teachers and students closer to technology and improved their usage skills. In addition, these skills are supported by the use of Web 2.0 tools and it is seen that teacher candidates also have a perception towards this.

Limitations: The research was limited to 69 students who voluntarily accepted.

Conclusions: Although Web 2.0 tools have not yet been used effectively by music students, the importance of these tools in terms of the active role of students in the course has been understood.

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Introduction

With the introduction of the internet into our lives, new skills, such as dominantly using digital technology and adapting it to the education process, have been added to the skills aimed at the skills that teachers require. When considering 21st-century skills, teachers need to be able to use information and communication technologies efficiently in the learning-teaching process, choose technology-based applications suitable for the purposes of the course, follow new developments and constantly improve themselves (as cited in Cumhur & Çam, 2021). Similarly, training teachers who can satisfy the requirements of the digital age in music education is among the goals of music teaching programs. Although Web 3.0 technology is now being discussed, Web 2.0 technology is still widely used in education processes.

Web 2.0 (technology) refers to the second-generation internet that uses the web as a platform to facilitate sharing and collaboration (Faboya & Adamu, 2017; O'Reilly, 2005). Unlike Web 1.0 technology, which aims to present information, Web 2.0 technologies offer users the opportunity to interact online both simultaneously (real-time) and asynchronously (at different times) through text, audio, video and graphics (Rockinson-Szapkiw & Walker, 2009; Rosen & Nelson, 2008). Web 2.0 technology, transformed the online world from the reading environment and created the "Read-Write Web" and offered an environment for people to write without complicated publishing tools (Rosen & Nelson, 2008). Due to the frequent use of these features in social media websites, blogs, wikis and podcasting, Downes (2005) stated that Web 2.0 "is not a technological revolution, it is a social revolution".

According to Hew and Brush (2007), "instructors throughout history have always been concerned with the question of how technology can be used in education to improve education and learning." (Hew & Cheung, 2013). Today, educators often try to find a solution to this question by using Web 2.0 technology in their educational processes.

According to Karadağ and Garip (2021), educators can make their lessons more efficient and more understandable thanks to information technologies including Web 2.0. The revolution in information technology has changed the way, we think about education. Despite the popularty of face-to-face and teacher-based instruction in traditional methods, today's education methods requires an approach in which the student is more active, reinforcing collaborative learning and even enabling content preparation. According to Rosen and Nelson (2008), the greatest strength of Web 2.0 tools is that they can change the nature of

student learning and lead to Education 2.0. "… the multi-way nature of the Web 2.0 platform exemplifies constructivist pedagogy, especially of the social variety." (Rosen & Nelson, 2008, p. 221). When modern technologies such as Web 2.0 tools are planned carefully and integrated into educational environments, they have great potential in terms of providing rich learning opportunities and motivating students (Aytan & Başal, 2015). These tools, which facilitate the creation of course content, assignments, presentations, videos, games, or digital boards, offer a quick solution to difficult educational issues from different perspectives (Faboya & Adamu, 2017).

Hew and Cheung (2013) stated that "many claims and suggestions have been made about the educational potential or benefits of Web 2.0 technologies, but such claims or recommendations are usually only based on assumptions, not research evidence." However, since 2013, many experimental studies have been carried out, not only explaining the tools but also on the use of Web 2.0 technology in education (Aytan & Başal, 2015; Başal & Eryılmaz, 2021; Bugawa & Mirzal, 2018; Can, 2021; Cumhur & Çam, 2021; Çakan Uzunkavak & Gül, 2022; Çalışkan et al., 2019; Echeng & Usoro, 2016; Gürleroğlu & Yıldırım, 2022; Jarrah & Alzubi, 2021; Karadağ & Garip, 2021; Parkita, 2021; Süğümlü & Aslan, 2022; Şahin-Topalcengiz, & Yıldırım, 2020; Tünkler, 2021; Wu, 2022).

In their research, Çakan Uzunkavak and Gül (2022) aimed to evaluate the contribution of the activities prepared with Web 2.0 technologies for the sound creation unit on the learning levels of students within the scope of the music lesson. As a result of the research, it was determined that the activities prepared with Web 2.0 technologies contributed to the students' self-awareness, self-confidence, voice health, voice change and field expertise, and also facilitated the learning of theoretical knowledge. Consistent with the idea of Web 2.0, where data are created, used and shared by users, Wu (2022) developed and implemented a music teaching resource platform based on fuzzy clustering algorithm knowledge to manage music education in a more scientific and standardized manner. As a result of the research, it is stated that the use of the proposed teaching resource system increases the effectiveness of teaching and reduces students' learning load by increasing the efficiency of learning. A study conducted by Revenko (2021), aimed to determine how new technology and music education can be integrated by accessing the services and opportunities offered by Web 2.0 to mass audiences, and the effect of these opportunities on the quality of music education and psychological education. Sastre et al. (2013) mentioned the Web 2.0 tools they used in music education within the scope of the project they carried out in their research. Crawford (2013) aimed to fill a significant gap in providing music education programmes in regional and distant schools using Web 2.0 tools with a self-developed project. Thus, it enabled

students in rural areas to receive high-quality music education and access performance experiences they could not reach. As a result of their research, Coutinho and Mota (2011) concluded that music lessons conducted by teacher-created podcasts involve students in the learning process and make them aware of the new roles they will play in the global information society.

In the 2020-2021 Academic year, lessons were conducted in a hybrid (online and face-to-face) system due to the worldwide Covid-19 pandemic at Bursa Uludag University Department of Music Education. Apart from individual classes, the collective group lessons also were held online. Faculty members used Web 2.0 tools during the online courses throughout the semester. In this way, the lecturers aimed to ensure students' active participation in classes and collaborative learning environments. For this reason, it is believed that music teacher candidates have a first-hand experiences and ideas about these tools.

Based on this idea, is research mainly aims to answer the question, "What are the perceptions and views of music education department students towards Web 2.0 tools?"

1 Methodology

1.1 Research model

A mixed-method research model was used in this study. According to Johnson et al., mixed-methods research is "a type of research in which the researcher or research team combines components of qualitative and quantitative research approaches for breadth and depth of understanding and validation." (as cited in Creswell & Plano Clark, 2020, p. 4). In this study a questionnaire created by Yuen et al. (2011) and translated into Turkish by Aytan and Başal, was used and interviews were conducted with the students in line with the results of the questionnaire.

Explanatory Design, one of the mixed-method techniques, was used for the study. In this design, primarily quantitative data were collected and analyzed to collect data for the research question. After this stage, qualitative data were collected using interview questions created in line with quantitative data analysis. Thus, the qualitative results helped to explain the quantitative results.

1.2 Study group

The convenience sampling techniques, one of the purposeful sampling technique, was used in the research. The study sample, in terms of quantitative data, consists of 69 students from the Bursa Uludag University, Faculty of Education, and Department of Music Education, who voluntarily participated in the study. Demographic information of the students is shown in Table 1.

Table 1

Demographic information of the sample group

	Gender		*Grade*				*Total*
	Female	*Male*	*1*	*2*	*3*	*4*	
n	44	25	19	26	12	12	69
%	63.8	36.2	27.5	37.7	17.4	17.4	100

When Table 1 is examined, it is seen that 44 of the students constituting the sample group are female, 25 are male, 19 are in 1st grade, 26 are in 2nd grade, 12 are in 3rd grade and 12 are in 4th grade.

Interviews were conducted to collect qualitative data for the research. The participants of the interviews were some of the students in the sample group. These students used Web 2.0 tools in some of their courses and voluntarily agreed to participation in the study. Accordingly, the study group was formed with five music teacher candidates randomly selected to collect qualitative data for the research. The students in the study group are in the 2nd grade, four of them are female, and one of them is male.

1.3 Data collection tools

In the study, two different data collection tools were used to determine the perceptions and opinions of music education department students about Web 2.0 tools. The questionnaire used to determine the perceptions was developed by Yuen et al. (2011) and later adapted into Turkish by Aytan and Başal. The questionnaire consists of 20 items in a 5-point Likert type (1- Strongly disagree, 2- Disagree, 3- Neither agree nor disagree, 4- Agree, 5- Strongly agree). The questionnaire was used in the study with the permission of the researchers. The validity of the survey conducted by Yuen et al. was ensured by consulting expert opinions, and the reliability coefficient (Cronbach Alpha) was determined as 0.98. To ensure the validity of the questionnaire, which was translated into Turkish; the experts from the Department of English Language Teaching and the Department of Turkish Education were consulted on the clarity of the questionnaire items. The questionnaire was given to the students, and the Cronbach Alpha coefficient was determined as 0.91 (Aytan & Başal, 2015). Also, at the beginning of the questionnaire, there are questions regarding the students' demographic information, whether they have a computer or not, and the use of Web 2.0 tools in the education process.

After analyzing the survey results to collect qualitative data, which is the second stage of the research, interview questions were prepared to examine these results in depth and to determine the opinions on the use of Web 2.0 tools in the teaching profession. There were ten questions in the interviews.

1.4 Data collection and analysis

This study was conducted online in the spring semester of the 2020-2021 academic year. Questionnaire items used to collect quantitative data were prepared via "Google Forms" access students more efficiently and were sent to students online. For qualitative data collection, the interview form was designed as a "Word" document and sent to the study group as an e-mail, and the answers were received in written form.

In the study, quantitative data were analyzed as frequency and percentage. Qualitative data were analyzed using the content analysis method, and themes and codes were created. The findings obtained from the quantitative data were discussed by comparing them with the results obtained from the qualitative data.

The reliability coefficient calculations of the perceptions survey for Web 2.0 tools, which are quantitative data collection tools, were validated and found to be reliable based on the results obtained. In addition, according to Başkale (2016), it is more appropriate to use terms such as trustworthiness, the accuracy of results, competence of the researcher, credibility, confirmability and transferability instead of validity and reliability in qualitative research. The current study provides a detailed account of the participants and the study group. The study also purports to serve the degrees of reliability with a good literature review, a detailed description of the research methods and an examination of the results of other research. Besides, a triangulation step with direct quotations from the participants was also provided.

2 Findings

With the form used as the quantitative data collection tool for the study, we inquire whether the music students have a computer and whether the instructors and students benefit from these tools in the lessons. Table 2 was created from the answers obtained.

Table 2

Opinions of the participants

Questions	*Yes*		*No*	
	n	*%*	*n*	*%*
Do you have a computer?	63	91.3	6	8.7
Do your instructors use Web 2.0 tools in their educational processes?	55	79.7	14	20.3
Do you actively use Web 2.0 tools in your education processes?	42	60.8	27	39.2

When Table 2 is examined, it can be seen that most music education department students participating in the study have a computer (91.3 %). According to the result, 79.7 % of the students state that the instructors use Web 2.0 tools in their classes, while only 60.8 % use them for their education.
In addition, the participants were explicitly asked in which courses the instructors used Web 2.0 tools. Table 3 shows the list of courses in which the instructors at Bursa Uludag University Music Education Department use Web 2.0 tools based on the participant's answers.

Table 3

Opinions of the participants about the courses using Web 2.0 tools

Courses	*n*	*%*
Teaching Technologies	11	7.59
Culture of Music	10	6.9
Curriculum of Music Education	3	2.07
Harmony and Accompaniment	3	2.07
Turkish Folk Music and Applications	3	2.07
Research Methods in Education	2	1.38
Pre-School Music Education	2	1.38
Composing Technics of School Music	2	1.38
Turkish Art Music and Applications	2	1.38
Major Instrument Training	2	1.38
Orchestra - Chamber Music	2	1.38
Baglama Training	2	1.38
General Knowledge Courses	2	1.38
History of Western Music	1	0.69
Western Music Theory and Applications	1	0.69
History of Turkish Music	1	0.69
Polyphonic Choir	1	0.69
Repertoire of School Music	1	0.69
Teaching Practice	1	0.69

When Table 3 is examined, it is seen that Web 2.0 tools are used in many courses, especially in the "Teaching Technologies" and "Culture of Music" courses. In addition, some participants stated that Web 2.0 tools were used in all other classes and all field courses.
During the study, additional questions were asked to the students also enrolled in the School Experience and Teaching Practice course. Accordingly, how often Web 2.0 tools were used was determined while they were observing and teaching

the lessons. Thirty-five participants answered these questions. The answers obtained from the participants are given in Table 4.

Table 4

The use of Web 2.0 tools in school experience and teaching practice courses

Questions	*Yes*		*No*	
	n	*%*	*n*	*%*
Did the *music teachers* use Web 2.0 tools in the lessons you observed within the scope of School Experience or Teaching Practice courses?	23	65.7	12	34.3
Did *you* use Web 2.0 tools in your microteaching or lectures within the scope of your School Experience / Teaching Practice courses?	21	60	14	40

When Table 4 is examined, it is seen that 65.7% of the music teacher candidates who participated in the study stated that the music teachers used Web 2.0 tools during the lesson observations, and 60% used Web 2.0 tools in their lectures. Table 5 shows the participants' responses to the questionnaire to determine their perceptions of Web 2.0 tools.

Table 5

Responses of the participants to the survey items

Items	*1*	*2*	*3*	*4*	*5*
1. Web 2.0 tools help learners develop communication and language skills.	0 (0%)	1 (1.4%)	9 (12.6%)	37 (51.8%)	19 (26.6%)
2. Web 2.0 tools allow learners to work through their ideas and promote critical reflection.	0 (0%)	2 (2.8%)	12 (16.8%)	34 (47.6%)	18 (25.2%)
3. Web 2.0 tools bring learners' work to an authentic and wider audience.	0 (0%)	2 (2.8%)	7 (9.8%)	28 (39.2%)	29 (40.6%)
4. Web 2.0 tools facilitate communication and feedback between learners and teachers.	0 (0%)	3 (4.2%)	5 (7%)	28 (39.2%)	30 (42%)
5. Web 2.0 tools help learners develop a sense of ownership.	0 (0%)	4 (5.6%)	24 (33.6%)	22 (30.8%)	16 (22.6%)

6. Web 2.0 tools develop skills needed in today's modern, technological world.	0 (0%)	1 (1.4%)	3 (4.8%)	25 (35%)	37 (51.8%)
7. Web 2.0 tools encourage learners to interact and build a learning community.	0 (0%)	3 (4.8%)	6 (8.4%)	25 (35%)	32 (44.8%)
8. Web 2.0 tools allow learners to express individuality and creativity.	1 (1.4%)	1 (1.4%)	7 (9.8%)	27 (37.8%)	30 (42%)
9. Web 2.0 tools allow learners to pose questions to the community.	0 (0%)	2 (2.8%)	6 (8.4%)	27 (37.8%)	31 (43.4%)
10. Web 2.0 tools allow learners and/or teachers to share photos, music, and videos.	0 (0%)	2 (2.8%)	3 (4.8%)	20 (28%)	41 (57.4%)
11. Web 2.0 tools allow learners and/or teachers to hold forums to discuss topics of interest.	0 (0%)	3(4.8%)	8 (11.2%)	26 (36.4%)	28 (39.2%)
12. Web 2.0 tools allow learners and/or teachers to find and share educational resources.	0 (0%)	1 (1.4%)	7 (9.8%)	24 (33.6%)	34 (47.6%)
13. Web 2.0 tools provide collaborative learning opportunities.	0 (0%)	1 (1.4%)	10 (14%)	22 (30.8%)	32 (44.8%)
14. Web 2.0 tools promote knowledge sharing.	0 (0%)	1 (1.4%)	4 (5.6%)	27 (37.8%)	33 (46.2%)
15. Web 2.0 tools encourage learners to add value to the applications as they use item.	0 (0%)	1 (1.4%)	11 (15.4%)	29 (40.6%)	25 (35%)
16. Web 2.0 tools allow learners to share their opinions, experiences, and perspectives.	0 (0%)	1 (1.4%)	8 (11.2%)	29 (40.6%)	28 (39.2%)
17. Web 2.0 tools open classroom walls.	2 (2.8%)	5 (7%)	16 (22.6%)	17 (23.8%)	26 (36.4%)
18. Web 2.0 tools appeal to digital native learners.	0 (0%)	6 (8.4%)	17 (23.8%)	23 (32.2%)	21 (29.4%)

19. Web 2.0 tools allow learners to become content producers and not just receivers.	2 (2.8%)	1 (1.4%)	6 (8.4%)	26 (36.4%)	31 (43.4%)
20. Web 2.0 tools allow learners to connect content, people, ideas, and conversations.	1 (1.4%)	3 (4.8%)	13 (18.2%)	28 (39.2%)	22 (30.8%)

When Table 5 is examined, it is seen that the majority of the participants answered "I agree or strongly agree" to all of the items. The item with the highest percentage of respondents that strongly agree 57.4% is "Web 2.0 tools allow learners and/or teachers to share photos, music, and videos." Today, the fact that photo sharing is widespread on sites, such as Facebook, Instagram, and Twitter that adopt the Web 2.0 approach and students' frequent use supports this finding.

On the other hand, the item with the highest undecided rate (neither agree nor disagree) of students is "Web 2.0 tools help learners develop a sense of ownership", with 33.6%. Regarding this item, although 53.4% of the participants think that Web 2.0 tools help to develop a sense of ownership, it is seen that a substantial proportion of the participants do not consider Web 2.0 tools and the sense of ownership/belonging together. In the survey, the item the participants gave the highest rate of disagreement was "Web 2.0 tools appeal to digital native learners" with 8.4%. Similarly, the rate of undecided participants is considerably high for this item (23.8%).

After the quantitative data were obtained through the questionnaire, interviews were held with some students. In these interviews, the students' views on Web 2.0 tools, the tools they know and use, the use of these tools in classes, the advantages and disadvantages of the tools, the use of these tools in the teaching profession, their self-efficacy, their plans and their views on suggestions on this subject were determined. Themes and codes created from the participants' opinions on what Web 2.0 tools they know and use are given in Table 6.

Table 6

Opinions of the participants about Web 2.0 tools

Theme	*Sub-theme*	*Codes*	*Participants*
Web 2.0 tools	What are Web 2.0 tools?	Tools that enable active participants	P1, P2, P5
		Practical	P2
		Tools that enable participant interaction	P1, P2, P4, P5
		Event platform	P2
		Tools that enable collaborative learning	P3
		Tools that enable distance learning	P4
		Fun tools	P4
		Interesting tools	P4
	Recognizable Web 2.0 tools	Prezi	P1, P3, P5
		Padlet	P1, P2, P3, P4
		Flipgrid	P1, P2, P4, P5
		Google Drive	P1, P5
		Google Meet	P1, P5
		Google Classroom	P1, P3, P5
		Wordwall	P2, P4
		Powtoon	P2, P3, P4
		Kahoot	P3
		Zoom	P5
	Web 2.0 tools that are used	Prezi	P1, P3, P5
		Google Drive	P1, P5
		Google Meet	P1, P5
		Google Classroom	P1, P3, P5
		Padlet	P2, P4
		Powtoon	P3
		Kahoot	P3

When Table 6 is examined, it is seen that the participants define Web 2.0 tools as "tools that enable participant interaction", as well as "tools that enable active participants". According to the findings, it is seen that although the participants are familiar with ten different Web 2.0 tools, they only use seven of them. The tools that are most recognized by the participants are Padlet (4) and Flipgrid (4). In addition, the applications that are most used by the participants are Prezi (3)

and Google Classroom (3). Participants' views on the question "What are Web 2.0 tools?" are given below.

"Web 2.0 tools are programs that target *active participants* in the technological environment and support the *interaction* of participants with each other." (P1)

Web 2.0 tools are platforms where we can carry out our activities such as homework, presentations, projects and meetings in a *practical and active* way. By active use, we mean applications that allow us to present most of the ideas (sound recording, video, visual, drawing, games, etc.) we plan to exhibit in our project on the program without any trouble, and also allow *simultaneous examination* with other users." (P2)

Unlike the old standard education methods, Web 2.0 tools are tools that play a major role in the application of new methods to new generation students by using technology and *collaborative education*." (P3)

They are digital subject applications that can be used by fellow teachers who want to gather all the work done in a single environment and *interact* with students, and who want to make *distance learning* more *fun* and *interesting*. It offers students the opportunity to work *together simultaneously*." (P4)

It has been integrated into education because technology has entered our lives and the young generation has grown up with it. Web 2.0 tools are the applications that result from this and that users can use by *interacting with each other*. Apart from the teacher, the aim is to include the student in this environment and to perform the education more *actively*." (P5)

When the quantitative data are examined, it is seen that 33.6% of the participants chose the undecided option for the item "Web 2.0 tools help learners develop a sense of ownership". Based on this the participants were asked, "What are your views on the relationship between Web 2.0 tools and the concept of ownership?" The themes and codes in Table 7 were created from the data obtained.

Table 7

Opinions of the participants on the effect of Web 2.0 tools on ownership

Theme	*Codes*	*Participants*
Ownership	developing a sense of ownership of lessons and subjects	P1
	develops a sense of ownership	P2, P3, P4
	can create ownership	P5

When Table 7 is examined, it is seen that the participants stated that Web 2.0 tools would develop or create a sense of ownership. Some of the participants' views on the effect of Web 2.0 tools on ownership are as follows:
"I think that Web 2.0 tools *can improve* the sense of ownership towards lessons and subjects, especially in education, as they will attract students' interest in the lesson and increase their intrinsic motivation towards learning." (P1)
Web 2.0 tools are a much more advanced and remarkable form of traditional presentation methods, with our own unique designs and creative presentations. Its effective use, along with improving our skills, adds originality and ownership. It will be interesting for observers as it is an unusual display method. For this reason, it *develops* a sense of ownership for the creator." (P2)
" … I think these tools will *improve* the sense of ownership." (P3)
"… *contributes to the development* of a sense of belonging." (P4)
"I think *it can create* ownership when used regularly and functionally in the field of education." (P5)
In the survey, in which the quantitative data of the research were obtained, the item with the highest rate of disagreement and undecided (32.2% in total) is "Web 2.0 tools appeal to digital native learners." This situation created a question about how much the participants knew the term of "digital native". Based on this, the participants were asked "Do you have any idea about digital native?" The themes and codes in Table 8 were created from the answers obtained.

Table 8

Opinions of the participants on digital native

Theme	*Codes*	*Participants*
Digital native	No idea	P1
	Term confusion (confusion of competence and native)	P2, P5
	Born during the time of technological developments	P3
	Individuals who use technology and the internet from the moment they are born	P4

When Table 8 is examined, it is seen that two participants have correct information about the term digital native. In comparison, the other two participants confuse the term "native" with competence, and one participant has no idea about this. The opinions of the participants on the term "Digital native" are as follows:
"I have no idea about this subject." (P1)
"Digital *competence* concept, …" (P2)

"They are people *born* during the time of technological developments." (P3)
"They are individuals who start *using* technology and the internet from the moment they are born and can use all areas of the internet effectively. They adapt easily to new technologies and are not forced." (P4)
"Since everyone lives in the digital world today, I think that even the most remote person is *capable* of simple things." (P5)
Participants were asked for their opinions on using Web 2.0 tools in lessons. The theme of "Use of Web 2.0 tools in lessons" was created from the answers obtained. The codes for the related theme are given in Table 9.

Table 9

Opinions of the participants on the use of Web 2.0 tools in lessons

Theme	*Codes*	*Participants*
Use of Web 2.0 tools in lessons	Used in online education	P1
	Efficient	P1
	Problems experienced in applied (performance-based) lessons	P1
	Not used enough / should be used more in face-to-face education	P1, P2, P3, P4, P5
	Useful	P3
	Motivating	P3, P4
	The number of programs/tools for the field of music should be increased	P3

According to Table 9, the participants agree that Web 2.0 tools are not used enough in face-to-face education. In addition, one of the participants stated that there were problems in applied (performance-based) lessons regarding Web 2.0 tools. In contrast, another participant mentioned that the number of programmes/tools for the field of music should be increased. The opinions of the participants on the use of Web 2.0 tools in the lessons are as follows:
"Web 2.0 tools were used in almost every lesson during the *online education* period. In this way, the training was more *efficient*, but there were still some problems during *practical lessons*. I also think that it is *not used enough* in face-to-face education." (P1)
"Honestly, *I do not think* that these tools are *given priority* in our lessons. … If an active lesson is carried out with Web 2.0 tools during the lesson, I think that the attention of every listener, regardless of age, will increase. Thus, we can stay in control of the lesson and give an entertaining and informative lesson without boredom. I wish more of our teachers had given us the opportunity to teach with Web 2.0 tools, especially during this online education process." (P2)

"Web 2.0 tools are *used* as needed in our lessons. Its use is also very *motivating* and provides a great deal of focus on the lesson, as opposed to disconnect from the lesson. Therefore, *it will be good* for both teachers and students to use it in *more lessons*. The use of different applications is also sufficient. The number of *tools and programs* used in the field of music can be increased a little more." (P3)

"I *do not think* that web 2.0 tools are *used enough* in courses. Its use will improve cooperation and communication. However, these tools are only used in some courses. I also think it is *motivating* because it is easy to use. Using web 2.0 tools in addition to the programs used in the field of music makes learning more meaningful and motivating for students." (P4)

"*I do not think it is used enough* in music lessons." (P5)

The participants were asked about their effective use of Web 2.0 tools and their plans for future self-improvement in this regard, and the theme and codes in Table 10 were obtained.

Table 10

Opinions of the participants on the effective use of Web 2.0 tools

Theme	*Sub-theme*	*Codes*	*Participants*
Use of Web 2.0 tools	Effective use	Use effectively	P1, P3, P5
		Just Padlet	P2
		Not yet	P4
	Development plans	Learning to use more tools	P1, P3, P4, P5
		Use in project presentations	P2

Table 10 shows the participants' opinions on their effective use of Web 2.0 tools. Accordingly, it was determined that three participants used Web 2.0 tools effectively, one participant only used Padlet, and one participant did not use these tools effectively at all. In addition, it is seen that all participants want to improve their use of Web 2.0 tools effectively and efficiently and are making plans for progress. The opinions of the participants on the effective use of Web 2.0 tools and their development plans are as follows:

"Yes, I can describe myself as someone who uses Web 2.0 tools *effectively*. ... In order to be able to use these tools efficiently in my teaching life, I plan to learn to use *more tools.*" (P1)

"….. At the moment I only know how to use *Padlet*. But if there is an opportunity, when I start my profession, I want to work on these tools and have sufficient experience. In the future, if I take a course that I need to *present a*

project for, I plan to start with these tools first. Thus, I will gain experience not only by watching but also by practicing." (P2)
"Yes, I can describe myself as someone who uses Web 2.0 tools *effectively*. … *Learning* about these tools, using them and improving myself are among my plans…." (P3)
"Unfortunately, I am *not using* these tools *effectively at the moment* .... I would first start by *broadening my knowledge* on how to use Web 2.0 tools." (P4)
"Yes, I can use it. I plan to *learn* more tools." (P5)
Participants were asked about their use of Web 2.0 tools in future (in the teaching profession) and their views on the advantages and disadvantages of these tools in classroom environments. Based on the answers obtained, the themes, sub-themes and codes in Table 11 were retrieved.

Table 11

Opinions of the participants on the use of Web 2.0 tools in their future teaching life

Theme	*Sub-theme*	*Codes*	*Participants*
Use of Web 2.0 tools in professional life	Using status	I will use	P1, P2, P3, P4, P5
	Advantages	Active students	P1, P4
		Sharing opportunities for students	P2
		Increasing interest in the lesson	P2, P5
		Increasing technological aptitude	P2, P5
		Collaborative education opportunity	P3, P4
		Opportunity to access different tools & materials	P3
		Diversity of information	P3, P4
		Interaction	P4
		Communication	P4
		Effective	P5
		Opportunity to repeat	P5
	Disadvantages	Connection lost	P1
		Difficulties in the learning phase	P2
		Incorrect information	P3
		Editing feature	P3
		Anxious, reluctant students	P4

When Table 11 is examined, it is seen that all participants want to use Web 2.0 tools in their future teaching professions. Participants listed almost all the features that distinguish Web 2.0 tools from Web 1.0 technology as the advantages of these tools. In addition, the disadvantages of these tools are listed as the problems that can be experienced in the event of an internet outage, the difficulties in learning how to use these tools/applications, easy access to misleading information and students who may hesitate to exhibit their work in the classroom during activities open to the whole class.

The opinions of the participants on the use of Web 2.0 tools in their future teaching life are as follows:

"*Yes*, I will use." (P1)

"*Yes*. Thanks to the Teaching Technologies course I took this year, I learned many programs that I had not experienced before. I saw that we had fun together when we could participate in some practices as a class. It encouraged us to discuss and comment on it. I want to give this experience to my students as I think there are applications that interest me as a student, and I also enjoy preparing them." (P2)

"I intend to *use Web 2.0 tools* in my teaching profession." (P3)

"*Yes*. I plan to use these tools in the future because they take education outside of traditional patterns (teacher, student, textbook, four walls, etc.)" (P4)

"*Of course, I think.* It provides a more efficient education as there are tools that include students." (P5)

The participants' views on the advantages and disadvantages of Web 2.0 tools are as follows:

"I think that Web 2.0 tools in professional music education have advantages in terms of theoretical lessons. By keeping the *student active*, they can make the theoretical lessons more efficient. But I don't think it is that *efficient* in practice (performance-based) lessons. In case of *internet interruptions*, the student's being disconnected from the lesson during the performance and not being able to fully listen to the teacher are disadvantages for Web 2.0 tools in this regard." (P1)

"Due to our profession, *we can share* both their experiences and appearances with our students as video games, activity opportunities, sound recordings, videos, and images offered by Web 2.0 tools in order to recognize the terms, especially in the auditory field. Thus, we can both *increase their interest in the lesson* positively and enable them to get closer to technology. … Since the applications are out of the ordinary, it may take *some effort and patience during the learning phase*." (P2)

"… Web 2.0 tools are more advantageous than the traditional teaching-learning model as they teach not only commonly accepted knowledge but also support *collaborative education*. Web 2.0 tools have *increased the diversity*, theories and

analyticity of education. Briefly, the *diversity of information* and being able to *access the topics written by different people* can be given as examples of their favorable aspects. The biggest disadvantage is that Web 2.0 tools may not always *have the correct information*, and since it emphasizes collaborative work, *anyone can delete and edit it.*" (P3)

"Web 2.0 tools keep students *active* in the lesson. They enable *interaction, collaboration and communication*. They provide *information and content creation*. They enable students to *develop their technical skills* in their learning processes, but it is not possible to create a quality-learning environment using only Web 2.0 tools. … Students may *be uneasy and reluctant* to work because the work done with web tools is open to all study groups or to the whole class. They don't want the whole class to see it because they think they can make a mistake." (P4)

"I think it is very *efficient and interesting* for transferring topics to students in theory classes. … I prefer performance-based courses that are done face-to-face because the internet environment hinders the functioning of these courses. Yet, this is not caused by Web 2.0 tools. However, these tools can be productive since they *can be used repeatedly*." (P5)

Participants were asked for their suggestions on this subject. The "Suggestions" theme was formed from the answers obtained, and the codes in Table 12 were reached.

Table 12

Participants' suggestions for Web 2.0 tools

Theme	*Codes*	*Participants*
Suggestions	Use should be encouraged	P2
	Content for music education should be reproduced	P3
	It should be used more in lessons.	P4

When Table 12 is examined, it is seen that the participants suggested that the use of Web 2.0 tools should be encouraged, they should be used more in lessons, and the content that would cover the field/education of music in these tools should be increased. Participants' suggestions for Web 2.0 tools are as follows:

"I wish Web2.0 tools could reach more people and *encourage* them to use them. Thus, I am sure that many lessons, activities and presentations will become more fun, colorful, equipped and practical." (P2)

"Although Web 2.0 tools are useful applications in most areas, there are cases where they can be weak *in the field of music education*…" (P3)
"… I think that Web 2.0 tools should be *included more in lessons*, so that the interaction with students and the participation in the lesson will increase." (P4)

3 Discussion

This study aimed to determine the perceptions and views of the students of the music education department at Bursa Uludag University towards Web 2.0 tools. In line with the findings, it was determined that most of the students in the music education department (91.3%) had a computer, and it was concluded that Web 2.0 tools were used in 18 different courses in the music education department of Bursa Uludag University.

While 65.7% of music teacher candidates stated that music teachers use Web 2.0 tools within the scope of school experience and teaching practice courses, 60% indicated that they benefited from Web 2.0 tools. In the study, the participants commented that they used only four tools (Prezi, Padlet, Powtoon, and Kahoot), excluding Google applications. In addition, it was determined that the students planned to learn to use more Web 2.0 tools. If they achieve these goals by learning different tools/applications or programs, it is assumed that the use of Web 2.0 tools will increase in the practicum they carry out within the scope of the teaching practice course in the 4th grade. In addition, Akbana and Dikilitaş (2022) concluded in their research that students feel anxiety about digital integration because they do not have enough knowledge about Web 2.0 tools and therefore cannot produce activities.

In the survey, which forms the basis of the quantitative step of the study, it is seen that the majority of the students chose "I agree" or "strongly agree" in survey items. Based on these results, it can be concluded that the students of the music education department have a high perception of Web 2.0 tools. The answers given by the students to the item "Web 2.0 tools help learners develop communication and language skills" in the survey are in line with the opinion of the interviewed participants about Web 2.0 tools that "Web 2.0 tools allow participant interaction". In addition, the interaction and communication codes stated by the participants among the advantages of Web 2.0 tools also coincide with the relevant article.

The second item of the questionnaire is "Web 2.0 tools allow learners to work through their ideas and promote critical reflection." As a result of the research, it was concluded that music teacher candidates perceive that Web 2.0 tools will support critical thinking skills. It has also been stated in different studies that teachers' critical thinking skills should be developed (Xu, 2011; Choy & San Oo, 2011; Taghva, Rezaei, & Ghaderi, 2014; Kazikoğlu, 2019; Polat, 2020; Erdoğan, 2020; Yıldırım-Tastı & Yıldırım, 2022). Similarly, in the study conducted by

Aytan and Başel (2015), they concluded that "Web 2.0 tools will improve pre-service teachers' self-reflection and critical thinking skills" and indicated that "Turkish teacher candidates' interest in Web 2.0 tools is important for the development of critical thinking skills."

The answers to the items "Web 2.0 tools bring learners' work to an authentic and wider audience" and "Web 2.0 tools facilitate communication and feedback between learners and teachers" of the survey are in line with the results obtained from the interviews. The participants stated that among the advantages of Web 2.0 tools is that they allow students to share and access the shared work of different people, and the contributions they provide to communication and interaction.

Although most of the respondents (53.4 %) "agree" or "strongly agree" to the item "Web 2.0 tools help learners develop a sense of ownership" of the questionnaire, the rate of those who answered "neither agree nor disagree" is also not to be overlooked (33.6 %). Aytan and Başel (2015) reached a similar conclusion in their study. In that study, 31.3% of the participants answered this questionnaire items as "neither agree nor disagree". When the opinions of the five participants who were interviewed about this situation were asked, it was determined that all participants stated that Web 2.0 tools developed or could create a sense of ownership. With this result, it is estimated that the sense of ownership is not considered with regards to Web 2.0 tools while answering the survey items, but during the interviews, the participants had the opportunity to think more and express their opinions in detail.

When the answers given to the item of the questionnaire "Web 2.0 tools develop skills needed in today's modern, technological world" are examined, it is seen that the majority of the answers are "I agree" or "I strongly agree" (86.8 %). This result parallels the "increasing technological aptitude" code obtained from the interviews, in which the advantages of using Web 2.0 tools are stated. Although it was concluded in the studies carried out in the early 2000s that teacher candidates and teachers do not use technology sufficiently, this situation has completely changed today (Adıgüzel, 2010; Kocasaraç, 2003). Especially in 2020, with the covid-19 pandemic, education could be carried out remotely thanks to technology. While this situation brought teachers and students closer to technology, it also improved their usage skills. In addition, this situation is supported by the use of Web 2.0 tools, and the teacher candidates also have the same opinion.

79.8% of the participants gave the answers "agree" or "strongly agree" to the item "Web 2.0 tools promote learners to interact and build a learning community" of the questionnaire. In addition, concerning the item "Web 2.0 tools provide collaborative learning opportunities", the interviewed participants defined Web 2.0 tools as "tools that allow participant interaction, collaborative

learning, and collaboration". When Web 2.0 tools are examined, it is seen that the tools created for classroom management allow team and group formation (Google Classroom, Kahoot, etc.). Altıok, Yükseltürk, and Üçgül (2017, p. 6) have concluded that "social and cultural activities contribute to the cohesion of a group that comes together for the first time and has group awareness in a short time" with the study they carried out on the training of Web 2.0 tools. Similarly, Tulaboev, and Oxley (2012) concluded in their study that activities carried out through Web 2.0 tools facilitate learning by improving the sense of community. On the other hand, during the interviews, one participant stated that among the Web 2.0 tools disadvantages "the fact that the whole class or group can see the mistakes made by the students can make the student reluctant and uneasy." In this case, instructors (class leaders) should observe the situation well and give students an opportunity using Web 2.0 tools' features that "allows students to express their individuality and creativity."

Most of the participants (81.2%) chose "agree" or "strongly agree" on the item "Web 2.0 tools allow learners to pose questions to the community" of the questionnaire. Similarly, in Gündüzalp's (2021, p. 1169) study, students evaluated Web 2.0 tools as follows: "The use of Web 2.0 tools is essential because we can find the opportunity to ask questions and get answers immediately when we do not understand." In addition to all social media applications based on Web 2.0 thinking, other Web 2.0 tools frequently used in education (Google Classroom, Padlet, etc.) allow the community to ask questions about the subject.

The item "Web 2.0 tools allow learners and/or teachers to share photos, music, and videos" of the questionnaire is the item with the highest rate of "I strongly agree" (57.4%). Perhaps the most frequently used Web 2.0 technology by students is social media. These platforms can easily share photos, music, and videos. Kekeç Morkoç and Erdönmez (2015) concluded that students find using social media beneficial in their education. In addition, Dikbaş Torun (2020) concluded that students of higher education level prefer watching videos for educational purposes rather than other social media activities. Uça Güneş (2016) defines social networks as "in addition to their ability to appeal to many people due to their widespread and frequent use, they can access information and experts quickly, stay connected, and enable different interactions with different tools". Similarly, one of the participants with whom the interviews were conducted stated that the possibility of accessing different people's post is among the advantages of Web 2.0 tools. In addition to social media, it is possible to share photos, videos and music via many other Web 2.0 tools used in education.

In parallel with the following three items in the questionnaire ("Web 2.0 tools allow learners and/or teachers to find and share educational resources", "Web 2.0

tools promote knowledge sharing" and "Web 2.0 tools allow learners to share their opinions, experiences, and perspectives"), participants expressed a similar opinion and listed the advantages of Web 2.0 tools, such as sharing opportunities, diversity in education, diversity of information and the possibilities of accessing different people's shared works. According to Kulaklı and Mahony (2014, p. 665), "Web 2.0 has not radically changed the process of creating and sharing information, the content of different sharing structures has been transformed and the flow of information has increased. Therefore, these developments have increased teaching and learning activities. Academics are more flexible in content creation and have access to more resources."

The item "Web 2.0 tools appeal to digital native learners" of the questionnaire is the item with the highest rate of disagreement (8.4%). In line with this result, the participants were asked about the term "digital native" in the interviews and the reason why they chose the answer I disagree with this item at this rate. While two of the participants explained this concept correctly, the other two participants confused this concept with "competence" and answered accordingly. The other participant stated that she had no idea about this term. With these results, it can be thought that the participants who answered the questionnaire had no idea about this term or were confused. Although the term "digital native" was introduced by Prensky in 2001, this term has been the subject of discussion by many researchers (Prensky, 2001; Bayne & Ross, 2007; Selwyn, 2009). For example, Kirschner and De Bruyckere (2017) stated in their study that they presented scientific evidence showing that there is no such thing as a digital native. In line with these different opinions among researchers and the findings obtained from the research, it is thought that the term "digital native" should be discussed in more detail with the students of the music education department, and research should be conducted on this subject.

Conclusions

According to the results of the survey application in the research, it was determined that the students of the music education department had a very high perception of Web 2.0 tools. Also, music education department students stated that Web 2.0 tools are used more frequently in distance education processes. Still, these tools are not included enough in face-to-face education and should be used more. Although it is mentioned in many studies that Web 2.0 tools contribute to active learning and provide an effective/productive educational environment, this idea is also considered and expressed by students in the music education department (Luckin et al, 2009; Hew & Cheung, 2013; Revenko, 2021).

Another significant result obtained from the interviews in the research is that music education department students need tools/programs and applications with

content specific to the field of music. One of the participants specifically stated that the music-specific characters, symbols, or animations could not be included in the materials he wanted to prepare using Web 2.0 tools for music education. He also stated that if this deficiency is eliminated, music education students or teacher could use these instruments more frequently.

In line with all these results, it is recommended that:

- Teacher candidates learn the effective use of Web 2.0 tools in teaching programs, updating the contents of other related courses, especially the "Teaching Technologies" course,
- Instructors use Web 2.0 tools more frequently in their lessons, especially in theoretical classes,
- Activities that allow teacher candidates to use Web 2.0 tools more frequently in the course contents of teaching programs should be incorporated,
- Content specific to the field of music should be integrated with Web 2.0 tools, increasing the use of these tools in music lessons,
- The teacher training institutions should train teachers who are curious about technological developments with an awareness of the development of new technologies and Web 2.0 tools and are willing to use them in classroom environments effectively.

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