IN-SERVICE TEACHERS' PERCEPTIONS TOWARDS USING WEB 2.0 TOOLS

MESLEKTEKİ ÖĞRETMENLERİN WEB 2.0 ARAÇLARINI KULLANMAYA YÖNELİK ALGILARI

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Abstract: The transformation experienced in the use of Internet technology in recent years has resulted in the emergence of Web 2.0 tools. These technologies have caught the attention of the educators due to their potential to enhance student-centered and technology-oriented learning by engaging students in an active and collaborative educational environment. These tools, plainly, have come into prominence lately because of the sudden outbreak of Covid-19 pandemic, which has led to a compulsory shift to distance education all over the world. Accordingly, the purpose of this study is to explore the perceptions of in-service teachers towards using Web 2.0 tools. In this study, quantitative descriptive survey research design has been employed to investigate in-service teachers' perceptions towards Web 2.0 technologies. The data were collected through a five-point Likert-type scale consisting of 22 items. The participants were 285 in-service teachers working in state schools from Isparta and Afyonkarahisar. It has been found that the overall perceptions of in-service teachers towards using Web 2.0 tools are moderately high. The findings have revealed that perception of teachers does not differ in terms of gender, subject and experience; however, it significantly differs in terms of school level, digital liter level and distance education experience.

Keywords: Covid-19 pandemic, Web 2.0 tools, In-service teachers, Distance education

Özet: Son yıllarda, internet teknolojisi kullanımında yaşanan dönüşüm, Web 2.0 araçlarının ortaya çıkmasına sebep olmuştur. Bu teknolojiler, öğrencileri aktif ve işbirliğine dayalı bir eğitim ortamına dâhil ederek öğrenci merkezli ve teknoloji odaklı öğrenmeyi geliştirme potansiyelleri nedeniyle eğitimcilerin dikkatini çekmiştir. Açıkça ifade etmek gerekirse bu araçlar, tüm dünyada uzaktan eğitime zorunlu bir geçişe yol açan Covid-19 salgınının, aniden patlak vermesi nedeniyle son zamanlarda ön plana çıkmıştır. Buna göre, bu çalışmanın amacı, öğretmenlerin Web 2.0 araçlarını kullanmaya yönelik algılarını incelemektir. Bu çalışmada, öğretmenlerin Web 2.0 teknolojilerine yönelik algılarını araştırmak için nicel tanımlayıcı anket araştırma deseni kullanılmıştır. Veriler, 22 maddeden oluşan beşli Likert tipi bir ölçek aracılığıyla toplanmıştır. Katılımcılar, Isparta ve Afyonkarahisar illerinde devlet okullarında görev yapan 285 öğretmendir. Öğretmenlerin Web 2.0 araçlarına yönelik genel algılarının yüksek olduğu sonucuna varılmıştır. Çalışmada elde edilen bulgular, öğretmenlerin web 2.0 teknolojilerine karşı algılarının cinsiyet, branş ve deneyim yönünden bir değişiklik göstermediğini ortaya koyarken, okul seviyesi, dijital okuryazarlık düzeyi ve uzaktan eğitim deneyimi söz konusu olduğunda önemli farklar gözlemlenmiştir.

Anahtar Sözcükler: Covid-19 pandemisi, Web 2.0 araçları, Meslekteki öğretmenler, Uzaktan eğitim

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Introduction

In recent years, technology has advanced at such an unprecedented pace that keeping up with these improvements has become crucial in order to get integrated in a multimodal world that comprises of extraordinary developments in communication and web technologies. These rapid developments have profoundly changed the society in the 21st century, which has also been labeled as the 'Information Age' or the 'Digital Age'. One aspect of this profound change is the transformation occurring in education with the help of recent web innovations and technologies in and out of the classroom. In line with this, the knowledge and skills that students need to acquire and master have changed as well (Solomon & Schrum, 2007). Initially, Web 1.0 technologies (the first-generation web or read-only web) were implemented in educational environments in which students were only permitted to browse and obtain information from the web sites and were not allowed to create content, interact or collaborate, which can be related to the concept of 'teacher-directed instruction'. Web 2.0 technologies, on the other hand, allow all individual users to undertake active roles by creating, collaborating, and socially interacting in the learning process as well as offering new opportunities for both teachers and students, which is quite dissimilar to their previous experiences (Uzunboylu et al., 2011). Therefore, it would be justified to argue that technology has reformulated the academic and professional territory that demands information access, production and utilization (Özerbaş & Mart, 2017). When gone through literature, it is observed that there are many research studies that report a diverse variety of findings pertaining to the relationship between teachers' perceptions towards Web 2.0 and their demographic features (Prasojo et al., 2020; Soomro et al., 2015).

Literature Review

What is Web 2.0?

Originated by O'Reilly in 2004, Web 2.0 stands for a group of functional characteristics of web pages (O'Reilly, 2005) rather than the name of a set of websites (Soomro et al, 2015). Web 2.0 is a more interactive platform than Web 1.0 in which all users become contributors and content creators rather than being 'read-only participants'. More precisely, Web 2.0 is the second generation of Web 1.0, the earlier Internet of 1990s, which was mainly 'read-only' where users could only view web pages with no editing or adding any content. More specifically, Web 2.0 has

provided the users with the opportunity to collaboratively build content (Butler, 2012) and to take part in creation, discussion, collaboration and social interaction (Faizi et al., 2014). In this regard, Buffington (2008) has stated that the creation of content is no longer the domain of experts only. It is possible to manage and take part in the content through social platforms and collaboration tools such as blogs, wikis, podcasts, photo and video sharing etc. (Solomon & Schrum, 2007). This shift is the result of the emergence of online social platforms, broadly acknowledged as Web 2.0 technologies. Thanks to the structural and functional diversity of Web 2.0 tools, people from different disciplines can make use of these technologies for a range of purposes. Tu et al. (2008) state that the target of Web 2.0 is to enrich the productivity and to boost the participation and information exchange among people. Similarly, according to Downes (2005), with the development of Web 2.0, these tools have constructed a platform where all users can contribute rather than being used as a medium only. In other words, instead of simply consuming the content, users can now create, share and remix the material.

As is known to all, today's students are the ones who were born into a digital world, which means that they know almost nothing about a world without the internet or technological devices surrounding them such as computers, tablets, mobile phones, videocams etc. (Prensky, 2001). Considering these factors, they are often labeled as 'digital natives'. As a result, there exist many difficulties in both educational and commercial settings since digital natives handle data more briskly, favor visuals to words, prefer games and entertainment to meticulous study and function best when connected to network. On the other hand, today's technology appears peculiar to 'digital immigrants' who have not grown up with such technologies and they have been in an endeavor to adjust themselves to these technological developments. Prensky (2001) again argues that academic institutions are expected to reshape their perspective in line with the requirements and competencies of digital natives; however, for most of the teachers, it is challenging as they are striving to instruct the new-age audience with the obsolete language they speak. Nevertheless, the British Library/JISC study (CIBER, 2007) has pointed out that the usage of internet among young people is shallow and they do not process the information to the core. In other words, students browse the web pages quickly and proceed to other pages without fully digesting the data. This implies that teachers are to undertake a new role in that they need to guide their students in reaching reliable and accurate academic input.

Web 2.0 and Education

Due to their significant benefits such as empowering students to create, collaborate, edit and share the content, Web 2.0 tools impel a shift from conventional educational environments to digital learning ecosystems. In traditional education, three basic theories have commonly been adopted: "behaviorism, cognitivism and constructivism" with the aim of describing how an individual learns (Markovic et al, 2012). Developed by Siemens (2004), connectivism has come to the fore to explain all aspects of learning through Web 2.0 technology. He claims that effective learning occurs in an ecology of diverse opinions and views; thus, forming connections among specialized nodes causes learning to occur. Furthermore, Siemens (2004) states that bringing connectivism and constructivism together enables students to master 21st century skills, which undeniably appear as a must in this new world. Accordingly, traditional instruction should be replaced with active knowledge construction and students should be in charge of their own learning (Yuen et al., 2011).

Additionally, with the growing availability and accessibility of the Internet, new pedagogical trends have emerged in distance education. Beal and Holcomb (2010) view Web 2.0 as tools that extend teaching and learning beyond the walls of the classrooms. Moreover, they can interact with each other and their instructors easily, implying that the notion of distance no more exists. In this respect, Downes (2006) maintains that learning is basically about the individuals' own interests and it takes place not only in the classroom but also in a suitable place outside the school walls. It should also be noted that learners do not need schools or universities to learn because they can decide on what, how, when and where to learn thanks to Web 2.0 tools (Downes, 2006).

Integration of Web 2.0 technologies into educational environments has resulted in fundamental changes and teachers now need to keep up with the innovations that occur in technology. Prensky (2001) states that the students of this age should be taught in a different way than the current educational system since they are not the same as their predecessors in that they think in a different way and tend to use information for different purposes. Open content makes it possible for learners to access learning materials and they can get into contact with other experts or instructors who give lectures about various subjects related to their specific needs through websites, social network sites and blogs. Therefore, it would be justified to argue that modern teachers need to be well equipped to cater for the needs, interests and skills of modern learners. In other words, it is essential for teachers to recognize 21st century learners' needs and understand the promising chances these

technologies provide in instructional procedures. Thus, educators face the challenge of meeting the needs of the new generation who are more mobile and technology-savvy than their predecessors. Ajjan and Hartshorne (2008) have demonstrated that teachers' perceptions based on their level of self-efficacy, familiarity and self-confidence with web 2.0 tools have powerful impact on their desire and inclination to use and integrate these tools into their lessons. It has been observed that inadequate use of these technologies stem from the fact that the teachers do not know much about Web 2.0 and they have little experience with these tools (Crook et al., 2008).

Considering all these constant improvements occurring in technology, teachers' main task is to integrate Web 2.0 tools into lessons meaningfully and to point the students in the right direction of using these new tools for their academic studies. Combining Web 2.0 tools with instructional methods and techniques will help students acquire the skills they need for the future.

Purpose of the Study

The integration of technology into the field of education has already been growing; however, the sudden outbreak of Covid-19 pandemic accelerated this process and educational institutions at all levels had to adopt distance education and make the best use of available technology. Consequently, technological competences of teachers and learners have gained much more importance than before as an outgrowth of this radical change. Furthermore, it is highly likely that distance education will be employed as either a backbone to or a substitute for traditional face-to-face education in the years to come (Rennell, 2020). Thus, it will be a must to become competent for teachers in Web 2.0 technologies as much as possible to keep teaching and learning atmosphere alive. Moving from this idea, the perceptions of in-service teachers towards Web 2.0 technologies can be regarded as noteworthy in that their willingness and tendency to incorporate technology into their instruction is influenced and governed by their perceptions (Ajjan & Hartshorne, 2008). In line with this, the aim of this study is to shed light on the perceptions of in-service teachers from different subjects towards the instructional use of Web 2.0 tools.

There are various studies that examined teachers' perceptions and attitudes towards Web 2.0 tools around the world (Bingimlas, 2017; Tweed, 2013). However, studies conducted in Turkey have discussed teachers' perceptions on Web 2.0 technologies within the context of specific group of teachers (Korucu & Karalar, 2017) or pre-service teachers (Cephe & Balçıkanlı, 2012; Tatlı et al.,

2016). The current study differs from other studies in that it highlights in-service teachers' general profile about their perceptions towards Web 2.0 with teachers from various subjects. Therefore, the study will contribute to the few existing literature on Turkish in-service teachers' perceptions towards Web 2.0 by portraying a broader picture of the usage of Web 2.0 in Turkish educational context and will be helpful to map strategies for adopting Web 2.0 technologies to support teaching–learning processes.

The research questions this research mainly deals with are:

- What are the perceptions of in-service teachers towards integration of Web 2.0 tools in their classes?
- Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their gender, subject, school level they work at, level of digital literacy, professional experience and previous distance education experience?

Method

Research Design

This study employs a descriptive survey research design, which is a non-experimental quantitative research method, with 285 in-service teachers as participants. Quantitative survey research is the most commonly used method in the field of education, through which the evidence is easily gathered on people's knowledge, opinions and attitudes, and values on diverse issues. It also enables analysis of numerical data such as percentages, statistics or scores and it involves observation of a phenomenon and identification of a problem as well as constructing an initial hypothesis and testing the hypothesis (Dörnyei, 2007). This research design is frequently employed due to its feature of objectivity that ensures the generalizability of the results obtained from the sample to a larger population.

Participants

The study group of the present research consists of a total of 285 volunteer in-service teachers actively working in state schools in Isparta and Afyonkarahisar. The technique of 'convenience sampling' (Dörnyei, 2007) has been employed within this study in that the participants have been

selected because of their convenient accessibility and proximity to the researchers. In addition, due to the restrictions and precautions taken against Covid-19 pandemic, this technique of sampling has emerged as the best option under the circumstances, through which the researchers could easily reach the participants without any physical contact. Demographic information of the participants has been presented in Table 1.

Table 1

Demographic Information of the Participants

Subject	Number of Participants Female	Male	Total	%
Foreign Language Teaching	78	22	100	35
Science Education	21	14	35	13
Social Sciences	18	13	31	11
Turkish/Turkish Literature	18	12	30	10
Art/Music/PE*	22	8	30	10
Mathematics	19	12	31	11
Other**	18	10	28	10
Total	194	91	285	100

*PE: Physical Education

**Other: Information and Communication Technologies (ICT), Religion and Ethics, Primary School Teacher, Technology and Design

Data Collection

The data collection process for this study started in December, 2020 after the approval of Süleyman Demirel University Ethics Board (November 30, 2020 / 99-5) and ended at the end of January, 2021. Due to the restrictions during Covid-19 pandemic, the data collection tool has been uploaded on an online platform (forms.google.com) and the link has been shared with the teachers. Participants have been informed about the content as well as the aim of the study and their consents have been obtained before they have been asked to participate in the study.

As has been mentioned above, a self report questionnaire (SRQ) has been utilized to collect the data for the study. SRQs are defined as tools "…in which participants typically are presented with a set of specific statements, questions, or prompts and must respond to each by selecting one of several options provided on the instrument" (Wolters & Won, 2017, p. 308). Since SRQs are comparatively more convenient and cheaper to produce, administer, score and analyze, the

researchers have employed a SRQ within the study. The data collection tool employed in this study consists of two sections. In the first section, participants are requested to provide their demographic information such as their gender, department, experience, school level, educational level, digital literacy level and previous distance education experience. The second section aims to collect participants' perceptions of Web 2.0 tools; thus, 'Teachers' Perceptions towards Using Web 2.0 Tools in Lectures Scale' (TPUWL), developed and validated by Yıldırım and Akkuş (2020), has been employed. The procedures of adaptation of TPUWL into Turkish and details as to the validity and reliability of the TPUWL scale have been explained below.

Teachers' Perceptions towards Using Web 2.0 Tools in Lectures (TPUWL) Scale

TPUWL scale has originally been developed by Yıldırım and Akkuş (2020) and has been adapted within this study. First of all, it has been translated into Turkish by the researchers. As a next step, the original and the translated forms of the TPUWL scale have been examined by three experts who hold PhDs in English language teaching. The entire scale consists of 22 five-point Likert-type items (1: Strongly Disagree; 2: Disagree; 3: Neither agree nor disagree; 4: Agree; 5: Strongly Agree) that aim to measure teachers' perceptions of Web 2.0 tools. Within the scale, there are two factors: 'Perception towards Using' and 'Professional Competence Perception', consisting of 12 items and 10 items, respectively. The reliability of the original TPUWL Scale was determined to be high (α = ,95) (Yıldırım & Akkuş, 2020). In this study, the Cronbach alpha internal consistency coefficient of the TPUWL scale has been computed as ,947. Results of reliability analyses for each factor and the entire scale are presented in the Table 2 below.

Table 2

Internal consistency values of the TPUWL scale

Construct	Cronbach's α
TPUWL Scale	.947
Perception towards Using (PU)	.933
Professional Competence Perception (PCP)	.932

The Cronbach Alpha values for the entire TPUWL scale, PU, and PCP were found to be ,947, ,933, and ,932, respectively. As shown in Table 2, Cronbach Alpha values of the TPUWL scale

and its subscales are higher than 0.70, which indicates that both the overall scale and factor structures of the scale have good reliability coefficients (Tavşancıl, 2002).

Data Analysis

For the analysis of the data obtained, whether the data feature normal distribution has been examined. The values obtained by dividing the skewness and kurtosis coefficients of the data into standard errors have been checked to ensure normality (Tabachnick & Fidell, 2014). At the end of this analysis, it has been observed that the skewness and kurtosis values are between the ± 2 limit. However, since the total number of participants is over 50, Kolmogorov-Smirnov test has been employed and, in line with its results ($p < .05$), it can be argued that it does not meet the normal distribution condition. Similarly, the Q-Q charts and histogram also support this finding. As a result, it has been decided that the data are not distributed normally.

Since the data has not met the assumptions of normal distribution, Mann-Whitney U test and Kruskal-Wallis H test, non-parametric tests, have been employed for the analyses. Additionally, Bonferroni correction has been performed for multiple pairwise comparisons.

Findings

Research Question 1. What are the overall perceptions of in-service teachers towards using Web 2.0 tools?

The arithmetic mean and standard deviation values are given in Table 3 with the aim of answering the first research question.

Table 3

Statistics for TPUWL Scale and its Factors

Factors / TPUWL	N	X	Percentage of scores (%)	Standard deviation	Maximum scores that can be achieved
Perceptions towards using (PU)	285	48.50	80.83	6.58	60
Professional Competence Perception (PCP)	285	37.66	75.32	5.98	50
TPUWL	285	86,16	78.32	11.21	110

There are no reverse items in TPUWL scale and the mean scores of the responses given to the items have been computed. In addition, as the number of items in the factors is different from each other, total scores that can be obtained are different. Therefore, with the aim of making a comparison between the factors possible and easier, mean scores have been converted into percentages by correcting them according to the total score. Accordingly, it has been observed that the mean scores of participants in the factor of 'Perceptions towards Using' (PU) is 80.83 %. This factor includes 12 items and the highest score that can be obtained here is 60 whereas the lowest possible score is 12. It can be argued that in-service teachers' perceptions towards using Web 2.0 tools are moderately high and they mostly agree with the items under the factor of PU. On the other hand, the mean scores of participants in the factor of 'Professional Competence Perception' (PCP) is 75.32 %. There are 10 items in this factor of the TPUWL scale. While the highest score that can be obtained in this factor is 50, the lowest possible score is 10. It can be argued that in-service teachers' perceptions on the professional competence factor of TPUWL are moderately high.

When it comes to the in-service teachers' overall perceptions of the TPUWL, which comprises a total of 22 items, the highest score that can be obtained in the TPUWL is 110 while the lowest possible score is 22. Considering the percentage of their scores (78.32%), it can be argued that in-service teachers' perceptions on the TPUWL are moderately high. More precisely, in line with the

wording of the 5-point Likert-type items in the TPUWL, their mean score indicates that they tend to 'agree' rather than 'strongly agree' with the items in the TPUWL.

Research Question 2. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their gender?

For the second research question, Mann-Whitney U test has been conducted to reveal whether the perceptions of in-service teachers towards Web 2.0 tools differ according to their gender. The findings of the analysis have been presented in Table 4 below.

Table 4

Mann-Whitney U Test Results for TPUWL Scale according to Gender

Gender	N	Mean Rank	Sum of Ranks	U	p	Significant difference
Female	194	137,73	26720,00	7805,00	,115	No difference
Male	91	154,23	14035,00			
Total	285					

*p<0.05

As can be understood from the figures given in Table 4, the mean scores of male in-service teachers ($\bar{X}$= 154.23) are higher than those of female in-service teachers ($\bar{X}$= 137.73). However, it is clear that there is no statistically significant difference in terms of gender (U:7805.00, p=0.115, >0.05).

Research Question 3. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their subject?

For the third research question, Kruskal-Wallis H test has been conducted to reveal whether the perceptions of in-service teachers towards Web 2.0 tools differ according to their subject. The findings of the analysis have been presented in Table 5 below.

Table 5

Kruskal-Wallis H Test Results for TPUWL according to Subject

Subject	N	Mean Rank	H	Df	P	Significant difference
PE /Arts/Music	30	120,93	11,076	6	.086	No difference
Foreign Language	100	159,01				
Science	35	131,74				
Social Science	31	145,31				
Maths	31	150,19				
Turkish/Turkish Literature	30	112,22				
Other	28	146,02				
Total	285					

Table 5 shows that the mean score of foreign language teachers is the highest ($\bar{X}$= 159.01) whereas the mean score of Turkish teachers is the lowest ($\bar{X}$= 112.22). The findings reveal that the difference observed is not statistically significant (H=11.076 p=0.86, >0.05).

Research Question 4. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to the school level they work at?

For the fourth research question, Kruskal-Wallis H test has been conducted to reveal whether the perception of in-service teachers towards using Web 2.0 tools differ according to the school level they work at. The findings of the analysis have been presented in Table 6 below.

Table 6

Kruskal-Wallis H Test Results for TPUWL according to School Level

School Level	N	Mean Rank	H	df	p	Significant difference	Effect size
Primary School	21	209,14	16,424	2	,000	Primary-High	0.56
Secondary School	122	130,41				Primary-Secondary	0.69
High School	142	144,04				Secondary-High	0.17
Total	285						

Table 6 shows that the mean scores of in-service teachers who work at primary schools is the highest ($\bar{X}$= 209.14). On the other hand, the mean scores of in-service teachers who work at secondary schools is the lowest ($\bar{X}$= 130.41). Moreover, Kruskal-Wallis H test results indicate that there is a difference which is statistically significant according to the school level (H= 16.424, p=0.00, <0.05). Following that, Bonferroni correction has been performed in this case in order to reduce Type 1 error while conducting multiple pairwise comparisons since there are 3 pairs to be compared. It has been found that the adjusted significance level is .54 for the pair -secondary school/ high school-. It is .000 for the pair -secondary school/ primary school- and .002 for the pair -high school/ primary school-. According to these results, there is no significant difference between the secondary school teachers and high school teachers in terms of their perception. On the other hand, there is a significant difference for the groups -secondary school/ high school- and -secondary school/ primary school-. These findings have been confirmed by the mean scores of each school level and the effect size obtained for each pair. More specifically, Mann-Whitney U test analysis has been conducted to determine the level of difference between and among the groups. The findings reveal that the mean scores of in-service primary school teachers are higher than the mean scores of in-service secondary school teachers, with the difference being at moderate level. Similarly, it has been observed that the mean scores of in-service primary school teachers are higher than the mean scores of in-service high school teachers ($\bar{X}$= 144.04), with the difference being at moderate level. Additionally, the mean scores of in-service high school teachers are higher than the mean scores of in-service secondary school teachers, with the difference being at small level.

Research Question 5. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their level of digital literacy?

For the fifth research question, Kruskal-Wallis H test has been conducted to reveal whether the perceptions of in-service teachers towards using Web 2.0 tools differ according to their level of digital literacy. The findings of the analysis have been presented in Table 7 below.

Table 7

Kruskal-Wallis H Test Results for TPUWL according to Digital Literacy Level

Digital Literacy Level	N	Mean Rank	H	df	p	Significant difference	Effect size
Basic	120	101,60	65.943	2	.000	Basic- Good	0.80
Good	131	161,08				Basic-Very good	1.31
Very good	34	219,46				Good-Very good	0.68
Total	285						

Table 7 shows that the mean score of in-service teachers with basic level of digital literacy is the lowest ($\bar{X}$= 101.60) whereas the mean score of in-service teachers with very good level of digital literacy is the highest ($\bar{X}$= 219.46). Furthermore, Kruskal-Wallis H test results indicate that the difference observed is statistically significant (p=0.00, p< 0.05). As a next step, Mann-Whitney U test has been conducted to determine the level of difference between and among the groups. The findings indicate that the mean score of in-service teachers with very good level of digital literacy is higher than the mean scores of in-service teachers with basic level of digital literacy, with the difference being at strong level. Similarly, it has been observed that the mean score of in-service teachers with good level of digital literacy ($\bar{X}$= 161.08) is higher than the mean score of in-service teachers with basic level of digital literacy, with the difference being at strong level. Furthermore, the mean score of in-service teachers with very good level of digital literacy is higher than the mean score of in-service teachers with good level of digital literacy, with the difference being at moderate level.

Research Question 6. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their professional experience?

For the sixth research question, Kruskal-Wallis H test has been conducted to reveal whether the overall perceptions of in-service teachers towards using Web 2.0 tools differ according to their professional experience. The findings of the analysis have been presented in Table 8 below.

Table 8

Kruskal-Wallis H Test Results for TPUWL according to Professional Experience

Professional Experience	N	Mean Rank	H	df	p	Significant difference
1-10 year(s)	91	150,25	1,108	2	.575	No difference
11-20 years	135	138,56				
21+ years	59	141,97				
Total	285					

Table 8 indicates that the mean score of in-service teachers who have an experience of 11-20 years is the lowest ($\bar{X}$= 138.56) and the mean score of in-service teachers who have an experience of 1-10 years is the highest ($\bar{X}$= 150.25). Moreover, Kruskal-Wallis H test results show that the difference observed is not statistically significant (H=1.108, p=0.575, >0.05).

Research Question 7. Do the perceptions of in-service teachers towards using Web 2.0 tools differ according to their previous distance education experience?

For the seventh research question, Mann-Whitney U test has been conducted to reveal whether the overall perceptions of in-service teachers towards using Web 2.0 tools differ according to their previous distance education experience. The findings of the analysis have been presented in Table 9 below.

Table 9

Mann-Whitney U Test Results for TPUWL according to Previous Distance Education Experience

Previous Distance Education Experience	N	Mean Rank	Sum of Ranks	U	p	Effect size
Yes	152	160,07	24330,50	7513,50	.000	0.45
No	133	123,49	16424,50			
Total	285					

Table 9 shows that the mean score of in-service teachers with previous distance education experience ($\bar{X}$= 160.07) is higher than their counterparts with no previous distance education experience ($\bar{X}$= 123.49). Furthermore, test results indicate that there is a difference which is statistically significant (U=7513,50, p=0.00, <0.05). It has been observed that the mean score of in-service teachers with previous distance education experience is higher than the mean score of those with no distance education experience, with the difference being at moderate level.

Discussion and Conclusion

Over the last few decades, Web 2.0 technologies have altered how people access and exchange information and reshaped how people communicate and interact in various occasions including educational settings. Causing a dramatic change in terms of communication, collaboration and information sharing, Web 2.0 technologies are currently utilized by many people. Web 2.0 technologies have the potential to promote teaching and learning with their increased functionality and popularity (Hartshorne & Ajjan, 2009). Similarly, Web 2.0 technologies are capable of creating a more student-centered learning climate in which students become producers of knowledge rather than being passive consumers. In order to integrate Web 2.0 into instructional settings, researchers point out that awareness of teachers need to be explored (Albion, 2008; Greenhow et al., 2009). For these reasons, several studies have been carried out by a number of researchers on the use and adaptation of Web 2.0 technologies into the field of education (Albion, 2008; Hartshorne & Ajjan, 2009).

The purpose of this study is to explore the perceptions of in-service teachers towards Web 2.0 tools and to find out if their perceptions towards using Web 2.0 tools differ according to their gender / subject / school level / digital literacy / professional experience / previous distance education experience. The findings of this study indicate that the perceptions of teachers towards Web 2.0

tools are moderately high, which means that the majority of in-service teachers are generally aware of Web 2.0 technologies and demonstrate positive attitudes towards educational use of Web 2.0 tools. Previous findings have revealed that teachers have high positive perceptions towards the use of Web 2.0 tools for teaching and learning (Almekhlafi & Abulibdeh, 2018; Hartshorne & Ajjan, 2009).

The study has also revealed that no statistically significant differences exist in in-service teachers' perceptions towards Web 2.0 tools in terms of their gender. The findings are supported by the findings of Özerbaş and Mart (2017) who examined the difference between male and female pre-service EFL teachers and found that there is no significant difference according to the gender. Unlike those, the findings of the study by Soomro et al. (2015) indicate that the gender of participants has a significant effect on Web 2.0 use.

The findings of the present study indicates that the perception of in-service teachers does not differ according to their subject. This finding is consistent with a previous study where findings indicated that the subject of teachers did not play a significant role in their perceptions towards using Web 2.0 (Prasojo et al., 2020). On the contrary, Bingimlas (2017) and Soomro et al. (2015) found that the instructors' perceptions of Web 2.0 tools significantly differed with respect to their subject.

Furthermore, it has been indicated that there is no significant difference in terms of the teachers' experience. Similarly, Çobanoğlu and Yücel (2017) and Yuen et al. (2011) note that the length of teaching experience have no significant difference in teachers' Web 2.0 perceptions. On the contrary, various researchers have found that teachers' professional experience have an inverse effect on their perceptions of Web 2.0 tools (Batsila et al., 2014; Şimşek & Yazar, 2017). In other terms, more experienced teachers were found to have lower perceptions towards Web 2.0 tools compared to their younger counterparts.

In other respects, the present study indicates that in-service teachers' school level, digital literacy level and previous distance education experience have a statistically significant effect on their perceptions towards Web 2.0 tools. It can be concluded that in-service teachers with very good level of digital literacy have the highest perception towards Web 2.0 tools, which is consistent with the findings of Çobanoğlu and Yücel (2017), indicating that the instructors with a good level of digital literacy have more positive attitude towards ICT usage than those with moderate level of

digital literacy in educational environments. It is possible to imply from these findings that higher digital literacy levels of in-service teachers result in higher perceptions of the TPUWL. In a similar vein, the findings of the present study have revealed that the perceptions of in-service teachers differ according to their school level. However, the findings are inconsistent with those of Yuen et al. (2011) in that school level has no significant effect on teachers' perceptions of usefulness of Web 2.0 in education.

Additionally, the findings have presented significant differences in teachers' Web 2.0 perceptions in terms of their previous distance education experience. It can be concluded that teachers' with previous experience on distance education are more aware of Web 2.0 tools and more willing to integrate these tools into their classes. This result is contrary to that of Badia et al. (2017) who concluded that online teaching experience is not a predictor of the adoption of web-based instruction.

All in all, teachers' gender, subject and experience are not predictors of their perceptions towards using Web 2.0 tools while their school level, digital literacy level and previous distance education experience have significant effect on their perceptions.

In the light of the findings gathered, it is possible to argue that efficient use and integration of Web 2.0 tools into education will give rise to the development of new teaching and learning techniques and alter the traditional educational settings dramatically in the near future. Furthermore, it is clear that teachers will inevitably become competent in new technologies in the upcoming years. In other words, it will be mandatory for teachers to transform themselves into digital natives by designing and harmonizing the content and delivery of their instruction employing Web 2.0 technologies. The findings of the study imply that the perceptions of Turkish in-service teachers towards Web 2.0 are moderately high, which indicates that teachers are not at a position to be fully aware of Web 2.0 tools. Therefore, teachers should be well-informed about the significant role that technology plays and courses/in-service trainings on how to utilize the Internet and Web 2.0 tools should be offered by experts of related area so that their perceptions towards Web 2.0 would be elevated to a more desired level.

It should also be noted that due to the restrictions resulting from Covid-19 pandemic, this study has adopted a quantitative survey research design; thus, further studies can be conducted through

employing qualitative data in addition to quantitative data so that a deeper insight into in-service teachers' perceptions of Web 2.0 technologies may be gained. In addition, this study has particularly been shaped on in-service teachers' perceptions towards using Web 2.0 tools. Consequently, it can be assumed that the perceptions of teachers might likely be the indicators of their competence; thus, it is recommended that further studies be conducted on in-service teachers' actual usage of Web 2.0 tools in order to see whether in-service teachers' perceptions towards Web 2.0 tools will correspond with their actual practice.

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Geniş Özet

Giriş

21. yüzyılın başından itibaren iletişim ve bilgi teknolojilerinin yaygınlaşması ve sürekli ilerlemesi, toplumun birçok alanını değiştirmiştir. Eğitim, sınıf içinde ve dışında son web yenilikleri ve teknolojilerinin yardımıyla radikal dönüşüme tanık olan en önemli alanlardan biridir.

Eğitim platformlarını etkileyen en yeni teknolojilerden biri, 2004 yılında O'Reilly tarafından web sayfaları için bir dizi tasarım ve işlevsel özelliği gruplandırma kavramını açıklamak için ortaya çıkan bir terim olan Web 2.0'dır. (O'Reilly, 2005).Web 1.0'dan farklı olarak Web 2.0, kullanıcılara iş birliği içinde içerik oluşturma fırsatı sağlayan daha etkileşimli bir platformdur. (Butler, 2012). Yani internet, podcast'lerden bloglara, wiki'lerden sosyal ağ araçlarına ve sosyal medya paylaşım araçlarından işbirlikçi yazı araçlarına kadar çok çeşitli Web 2.0 araçlarını kullanarak kullanıcıların sosyalleşmesine, iş birliği yapmasına ve birbirleriyle çalışmasına olanak tanıyan bir platforma dönüşmüştür.

Web 2.0 araçlarının gelecek vaat eden faydaları, öğrencilerin pasif bilgi alıcıları olduğu geleneksel eğitim ortamlarından, onların aktif katılımını sağlayarak daha öğrenci merkezli bir eğitim yöntemi olan dijital öğrenme ekosistemlere geçişe olanak sağlamıştır.

Araştırmanın Amacı

Eğitimin en önemli paydaşlarından biri olarak kabul edilen öğretmenlerin artık 21. yüzyılın öğrencilerine, "dijital yerlilere", hitap edebilmek için teknolojide meydana gelen yeniliklere ayak uydurması gerekmektedir. Prensky (2001), bu yaştaki öğrencilere, farklı bir şekilde düşündükleri ve bilgiyi farklı amaçlar için kullanma eğiliminde oldukları için mevcut eğitim sisteminden farklı bir şekilde öğretilmesi gerektiğini belirtmektedir

Bu nedenle, bu teknolojilerin sağladığı fırsatları tanımak, anlamak ve bu araçların öğretim süreçlerinde anlamlı yollarla entegrasyonunu sağlamak önemlidir. Literatür incelendiğinde, öğretmenlerin Web 2.0 araçlarının eğitsel kullanımına yönelik algıları ile ilgili çalışmaların spesifik bir öğretmen branşı ya da öğretmen adayları ekseninde yapıldığı görülmüştür. Literatürdeki bu

eksiklikten yola çıkan çalışmamız, farklı branşlardan oluşan katılımcı grubunun Web 2.0 araçlarının eğitsel kullanımına yönelik algılarını ölçmeyi amaçlamaktadır.

Bu çalışma iki ana araştırma sorusu üzerine şekillenmiştir. Bu sorular şu şekildedir:

- Meslekteki öğretmenlerin Web 2.0 araçlarını derslerine entegre etmeye yönelik algıları nedir?
- Meslekteki öğretmenlerin Web 2.0 araçlarını kullanmaya yönelik algıları onların 'cinsiyet, branş, çalıştıkları okul seviyesi, dijital okur yazarlık seviyesi, mesleki deneyim ve uzaktan eğitim tecrübesi' değişkenlerine göre farklılık gösterir mi?

Bu araştırma sorularının cevaplarına ulaşabilmek için söz konusu çalışmada, meslekteki öğretmenlerin Web 2.0 araçlarını kullanmaya yönelik algıları üzerinde etkisi olabilecek değişkenler incelenmiştir.

Yöntem

Bu çalışmada, Isparta ve Afyonkarahisar'daki devlet okullarında aktif olarak görev yapan 285 gönüllü öğretmen ile nicel anket araştırması deseni uygulanmıştır. Katılımcılardan iki bölümden oluşan bir çevrimiçi öz bildirim anketi (SRQ) doldurmaları istenmiştir. Anketteki iki bölüm sırasıyla, "Demografik bilgiler" ve "Öğretmenlerin Derslerde Web 2.0 Araçlarını Kullanmaya Yönelik Algıları Ölçeği (TPUWL Ölçeği)" şeklindedir. TPUWL Ölçeği, 22 maddelik beşli Likert tipi bir ölçektir. (1: Kesinlikle Katılmıyorum; 2: Katılmıyorum; 3: Ne katılıyorum ne katılmıyorum; 4: Katılıyorum; 5: Kesinlikle Katılıyorum)

Elde edilen verilerin analizinde parametrik testlerin (bağımsız örneklemler t-testi ve tek yönlü) uygulanabilmesi için gerekli varsayımlar karşılanmadığından, analizlerde parametrik olmayan testler olan Mann-Whitney U testi ve Kruskal-Wallis H testi kullanılmıştır. Ayrıca, çoklu ikili karşılaştırmaların yapılacağı değişkenler için Tip-1 hatanın önüne geçebilmek adına Bonferroni düzeltmesi yapılmıştır.

Bulgular, Tartışma ve Sonuç

Bu çalışmanın bulguları, öğretmenlerin büyük bir çoğunluğunun Web 2.0 teknolojilerinin genel olarak farkında olduğunu ve Web 2.0 araçlarının eğitsel kullanımına yönelik algılarının kısmen

yüksek olduğunu göstermektedir. Bu bulgunun Cephe ve Balçıkanlı (2012) ve Tatlı ve diğerleri (2016) tarafından bildirilen bulgularla uyumlu olduğu görülmektedir.

Araştırma ayrıca meslekteki öğretmenlerin cinsiyet, branş ve deneyim yılı açısından Web 2.0 algısında istatistiksel olarak anlamlı bir farklılık olmadığını ortaya koymuştur. Cinsiyet değişkenine bakıldığında, çalışmanın bulgularının Özerbaş ve Mart (2017) ile uyumlu olduğu; fakat, Soomro ve diğerleri (2015)'nin bulgularıyla uyuşmadığı görülmüştür. Branş değişkenine bakıldığında, çalışmanın Prasojo ve diğerleri (2020) ile benzer bulgular ortaya koyduğu, ancak, Bingimlas (2017) ve Soomro ve diğerleri (2015)'nin elde ettiği bulgularla uyumsuz olduğu görülmüştür. Mesleki deneyim açısından, çalışmanın bulgularının Çobanoğlu ve Yücel (2017) ve Yuen ve diğerleri (2011) ile uyumlu olduğu, Batsila ve diğerleri (2014) ve Şimşek ve Yazar (2012) ile ise uyumsuz olduğu gözlemlenmiştir.

Öte yandan, öğretmenlerin çalıştıkları okul düzeyi, dijital okuryazarlık seviyesi ve uzaktan eğitim deneyiminin Web 2.0 teknolojilerine yönelik algıları üzerinde istatistiksel olarak anlamlı bir etkiye sahip olduğu çalışma ile ortaya konmuştur. Çalışmadaki bulgular, dijital okuryazarlık seviyesi değişkeni açısından Çobanoğlu ve Yücel (2017) ile uyumludur. Okul düzeyi ve uzaktan eğitim deneyimi değişkenleri incelendiğinde elde edilen bulguların Yuen ve diğerleri (2011) ve Badia ve diğerleri (2017) ile uyumsuz olduğu görülmüştür.

Elde edilen bulgular ışığında, Web 2.0 araçlarının etkin kullanımı ve eğitime entegrasyonunun yakın gelecekte yeni öğretme ve öğrenme tekniklerinin geliştirilmesine yol açacağını ve geleneksel eğitim ortamlarını önemli ölçüde değiştireceğini söylemek mümkündür. Covid-19 pandemisi sürecinde, öğretmenler web tabanlı eğitim yapmak zorunda kalmışlardır. Ayrıca, hibrit eğitim modelinin geleneksel sınıf-içi eğitiminin yerini alacağı öngörülmektedir. Bu yüzden, öğretmenlerin önümüzdeki yıllarda kaçınılmaz olarak yeni teknolojilerde yetkin hale geleceği açıktır. Öğretmenlere teknolojinin oynadığı önemli rol hakkında iyi bilgilendirilmeli ve internetin nasıl kullanılacağına yönelik alanının uzmanları tarafından kurslar/eğitimler verilmelidir. Ayrıca uygun hizmet içi eğitimlerle Web 2.0 araçları tanıtılmalıdır.

Söz konusu çalışma, farklı çalışma alanlarına sahip olan öğretmenlerin Web 2.0 araçlarına yönelik algılarını öne çıkarmasından dolayı diğer çalışmalardan ayrılmaktadır. Bu sebeple, Türk

öğretmenlerin Web 2.0 araçlarına yönelik algıları ve farkındalıkları üzerine yapılan çalışmalara daha geniş bir bakış açısı sunarak katkı sağlamaktadır.

ETİK BEYAN: "“In-Service Teachers’ Perceptions towards Using Web 2.0 Tools” başlıklı çalışmanın yazım sürecinde bilimsel, etik ve alıntı kurallarına uyulmuş; toplanan veriler üzerinde herhangi bir tahrifat yapılmamıştır ve veriler toplanmadan önce Süleyman Demirel Üniversitesi Girişimsel Olmayan Klinik araştırmalar Etik Kurulu’ndan 30.11.2020 tarih ve 99/5 sayılı etik izin alınmıştır. Karşılaşılacak tüm etik ihlallerde “Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi Yayın Kurulunun” hiçbir sorumluluğunun olmadığı, tüm sorumluluğun Sorumlu Yazara ait olduğu ve bu çalışmanın herhangi başka bir akademik yayın ortamına değerlendirme için gönderilmemiş olduğunu taahhüt ederim.