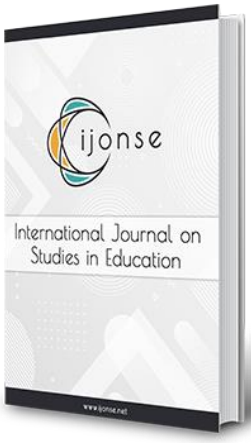

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Abdulkadir Kırbaş
Atatürk University, Türkiye

Mesut Bulut
Atatürk University, Türkiye

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Investigation of the Competencies of Teacher Candidates in Using Web 2.0 Tools

Abdulkadir Kırbaş. Mesut Bulut

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Abstract

This study aimed to examine the web 2.0 tool usage competencies of Turkish and Turkish language and literature teacher candidates. The participants' proficiency with Web 2.0 tools was assessed in this context based on several characteristics. 279 teacher candidates (219 female and 59 males) were the subjects of the study, which was carried out at an eastern Turkish university. The data was gathered using Google Docs (Google Forms) and the "Web 2.0 Tools Usage Competency Scale (WAKYÖ)" created by Çelik (2021) as the data gathering method. The results of the study indicate that the digital competency of teacher applicants is frequently in the medium range. The results show that while most teacher applicants use social media, they don't use it frequently. In the gender-based examination, male teacher candidates performed much better than female teacher candidates when using Web 2.0 tools. However, an analysis of age groups shows that there are no discernible differences in Web 2.0 tool proficiency. The examination conducted based on the department or main science that each student pursued at the university revealed that teacher candidates with varying degrees of education possessed comparable levels of digital proficiency. However, there was no discernible difference in the analyses conducted based on the individuals' devices, their use of social media, the amount of time they spent on it each day, and whether or not they had taken computer or information technology courses during their undergraduate studies. The results showed no appreciable variation based on family income level. The results suggest that the focus of educational activities should be on more effective ways to improve digital skills. This makes it obvious that specialized training and support programs should be developed to fulfill the requirements of teacher candidates while taking into consideration factors like academic specialization and gender.

Introduction

Throughout history, societies have undergone continuous evolution. Societies can be broadly classified into four stages: information society, industrial, agrarian, and primitive. The use of the internet has expanded in the information society (Günler, 2015). The Internet is a globally utilized communication network that facilitates connections between computer systems. When it comes to sharing information with others and offering quick,

affordable, and secure access to it, this platform is the most useful tool available today. The Internet can function as a community, a vast computer network, a library, or a platform for democracy, among other things. However, the common point of all definitions focuses on the concepts of accessing, sharing, and using information (Özen et al., 2004). The term “Web” started to be used to refer to this platform's private document access mechanism with the development of the Internet, which is essential in the "technology age" we live in today. The web environment in the initial phase was made up of pages with standard HTML code blocks that just had text and graphics on them and no user interaction. As conditions have changed, the requirement to exhibit and disseminate information and give context has led to changes in web standards and technologies over time. The conventional Web architecture that accompanied the Internet was supplanted by new standards and technologies known as Web 2.0 as a result of the modifications (Bani-Amer, 2022; Cakir, Ozturk, & Unal, 2019; Deperlioğlu & Köse, 2010). The proliferation of the internet in all spheres of life and the advancement of technology has led to the use of websites that offer documents such as texts, sounds, animations, and images for access. The early web was limited to text and image pages with no means of user interaction. But in the twenty-first century, gathering information is no longer enough; it's also critical to evaluate, arrange, disseminate, and create new information. Thus, shifting circumstances and demands are what led to the development of Web 2.0 and the growth of the Web (Ağir, 2014).

The term “Web 2.0” refers to how the internet has changed from static pages created by webmasters to a collaborative environment where users work together to develop individual web pages or entire websites (O'Reilly, 2008). Naturally, Web 2.0 tools are among the communication technologies that have the biggest impact on the world's decreasing. These days, social media and Web 2.0 are sometimes used interchangeably, and blogs, wikis, video-sharing websites, and social networks are widely utilized across numerous industries (Altıok et al., 2017; Ozturk, 2023).

Web 2.0 tools encompass many tools such as social networks, wiki pages, blogs, podcasts, photo-sharing websites, instant messaging platforms, social bookmarking tools, RSS, and video-sharing websites (Ağir, 2014). According to Tu et al. (2008), Web 2.0 technology has ushered in a new era of modern communication and display. A new web world that is highly interactive, user-centered, and focused on sharing and collaboration has evolved as a result of Web 2.0 technologies and the new web standards that have been produced as a result of these technologies. The Web 2.0 technologies of today impact many facets of life. Education is among them (Deperlioğlu & Köse, 2010). Web 2.0 technology is finding a wider range of uses every day. Web 2.0 technologies play a major role in this situation by facilitating user-to-user communication, user-to-user engagement in web applications, teamwork, and information access “very easy” in an online setting. With these features, Web 2.0 standards and technology can be adopted in the sphere of education (Chehimi & Alameddine, 2022; Deperlioğlu & Köse, 2010; Ergul Sonmez & Cakir, 2021; Monib, 2023;). Many changes have occurred as a result of the growth and adoption of the Internet. One of these changes is the web, which has changed the way people use the internet and turned it into a network for information and communication. With the use of this communication network, content may be easily created from anywhere in the globe and connected to other content (Yanpar Yelken, 2017).

The primary goal of Web 2.0's new services and applications is to let people take advantage of the Internet's social interaction and collaboration capabilities while also enabling content sharing without any technological obstacles.

Social software, a class of Web 2.0 tools, is what makes web literacy become web literacy. As a result, the Internet is no more a place where ready-made information is consumed or information is prepared and communicated; rather, it is a platform where content is created, shared, merged, and transferred among users (Horzum, 2010).

Web 2.0 tools allow for the creation of learning environments and resources that are independent of time and place, as well as interactive learning opportunities. They arose in reaction to the internet's rapid growth (Çelik, 2021). These days, technology has an impact on all facets of society. Education is among the domains in which these effects are most noticeable. Utilizing technology in education is crucial for increasing information access, enhancing learning, and lowering educational inequality (Timur et al., 2020). Web 2.0 resources offer methods for customizing lessons and showcasing the presence of training. Along with some of the more well-known tools, these also include blogs, wikis, RSS feeds, avatars, microblogging, social bookmarking, and social media. Thanks to this generation's readily available and affordable web-based technology, users can browse websites and create and share content (Tunks, 2012; Walters et al., 2018; Yazici Arici, Yigit, & Uyanik Aktulun, 2023). The Internet's linear data flow structure has quickly given way to a dispersed data flow. Web 2.0 apps have opened the door for Internet activities in educational settings for a large number of users (Karaman et al., 2008).

It's common knowledge that many jobs in the present world require surroundings centered on technology (Göker & İnce, 2019). Without question, Web 2.0 tools are among the most significant communication technologies that are shrinking the planet. Currently, blogs, wikis, video-sharing websites, and social networks are used extensively across a range of businesses, with the term “Web 2.0” referring to social media as a whole (Altıok et al., 2017). Teachers view Web 2.0 as a teaching and learning tool for languages (Tilfarlioglu, 2011).

The non-interactive, reading-focused, one-way information transmission capabilities of Web 1.0, which dominated the previous century, were insufficient to match Generation Z's aspirations. Web 2.0 tools that rely on reciprocal engagement step forward to fill this demand. Everyone is encouraged to actively participate in the teaching-learning process through Web 2.0 technology. It gives learners the chance to explore and share creative ideas by establishing collaborative learning environments (Hamlı & Hamlı, 2021). These days, the information, activity, assessment, and sharing that are essential to educational activities have developed into a paradigm that goes beyond the boundaries of information use. As a result, actively utilizing the Internet in education at every level has become crucial, in addition to the requirement to have a strong international presence. This mandate makes its application and distribution necessary across all fields, not just specific ones (Özen et al., 2004).

Numerous industries, including education, have been impacted by the rapid advancement of technology. This circumstance makes clear the necessity of using technology in the classroom wisely. When it comes to technology and education, Web 2.0 tools are particularly noteworthy. With the use of Web 2.0 technology, students can transition from a passive to an active role, developing into individuals with the ability to create and share (Timur et al., 2021). Teacher candidates' proficiency with Web 2.0 tools is positively impacted by the belief that employing these tools in the classroom benefits students greatly, makes learning fun, and is crucial to the educational process (Geçim & İmer-Çetin, 2023). Aside from improving the efficiency of the teaching-learning processes, the effective use of Web 2.0 tools—which are chosen based on the characteristics of the subjects to be

taught, the level of education, the level of the student, and the difficulty level of the knowledge—also significantly increases students' enjoyment of the lesson, their active participation in the lesson, and their success (Çoban & Adıgüzel, 2022).

With the advent of digitalization and widespread access to information, students' approaches to learning have undergone rapid and significant changes in the information age. The most recent technological advancements and Web 2.0 tools have made living easier and improved learning and teaching environments. The "digital natives" generation is reliant on Web 2.0 and digital media tools in their daily lives. This generation can communicate with individuals worldwide and obtain an infinite amount of knowledge thanks to their flawless mastery of Web 2.0 tools (Bozna & Yüzer, 2020). Digital transformation is unavoidable because of the numerous advancements in education that have been brought about by developing technology. Teachers can effectively employ Web 2.0 tools, which are a significant component of this shift, in a variety of subject areas. Web 2.0 tools raise students' levels of technology literacy while offering an engaging and productive learning environment. Facilitating tasks including class planning, activity implementation, enrichment, recording, and evaluation also boosts instructors' motivation (Çelebi & Satırlı, 2021).

Teaching approaches have altered to reflect Web 2.0, where content may be enhanced and changed, as opposed to Web 1.0's one-way communication process. This evolution has occurred in tandem with our age's constantly growing technical progress. These days, a plethora of social networking sites have surfaced, and usage of these networks is rising quickly, particularly among younger people. Web 2.0 applications are useful for bringing instructional materials and other types of information to a platform that can be accessed quickly and conveniently (Kekeç Morkoç & Erdönmez, 2015). Technological advances, and the sustainability of these innovations, are critical components of international economic competition. Proponents of education aided by technology frequently stress the necessity of a radical overhaul of the teaching and training system. As a result, just introducing technology is insufficient; instructors who are willing to participate actively in this process and who are committed to ongoing professional development are also essential (Timur et al., 2021). The use of Web 2.0 tools in daily life is growing. The proper use of these tools in the classroom by instructors and students is becoming more and more crucial (Horzum, 2010; Koc & Tanrikulu, 2021).

The field of information technology, which is employed in education and training to give people 21st-century capabilities, is growing quickly. Web 2.0 tools are becoming more and more popular these days. The efficient use of Web 2.0 tools, which are commonly utilized in daily life, by educators and students is seen as a key component in enhancing the learning process. How educators utilize assistive technology will determine how they feel about them. They engage with students by utilizing these technologies in class activities to improve their achievement (Ozcinar et al., 2020). Thus, the creation of Web 2.0 tools—which are user-friendly—can be seen as a technological innovation that facilitates the transformation of the educational system. Using Web 2.0 tools, students are becoming more than just passive learners who absorb knowledge from the classroom; they are becoming part of an engaged learning community that generates, modifies, and questions knowledge as well as creates new information. Instructors can significantly improve the educational process by using Web 2.0 tools in their lesson plans that are appropriate for their learning objectives and goals. Students and teachers will quickly

notice the positive benefits of using these tools consistently and successfully in the classroom environment (Elmas & Geban, 2012). Traditional methods of teaching are giving way to technological education as a response to the rapid advancement of technology. Technological education systems provide remote learning opportunities anywhere there is an internet connection, even in disaster and epidemic scenarios. Using a variety of tools and software, the curriculum and course materials are developed into an interactive system that creates virtual classrooms and offers interactive learning opportunities. Students can get a quick, high-quality education via distance learning, regardless of their location or schedule. By offering new options for teachers and students in several sectors, including language instruction, the use of Web 2.0 tools in virtual education improves the quality of education (Korkmaz & Çaymaz, 2022).

Regarding the employment of Web 2.0 tools, teacher applicants have mostly good sentiments. It demonstrates how teacher candidates positively assess the use of Web 2.0 tools to encourage students' active participation in learning settings, produce content, and improve social interaction. Web 2.0 tools with rich information are thought to be able to enhance student learning and assist teacher candidates in becoming more skilled communicators. In this sense, it is expected that instructors who use Web 2.0 tools in their classes will help teacher candidates advance professionally. Additionally, it's thought that teacher training programs will enable aspiring educators to deliver better education by enabling them to use Web 2.0 materials more frequently and efficiently (Caliskan et al., 2019). Web 2.0 tools should be used in the classroom strategically, according to studies, and it's critical to know which technology to use for which skill development (Yalçın, 2022).

Due to Web 2.0 technology and the expansion of the Internet, traditional text- and graphics-focused websites have transformed into rich, interactive platforms that facilitate interactive learning. Web 2.0 tools therefore enhance the quality of instruction, make resources easier to access, and boost student engagement in the classroom. More adjustable remote learning environments are also offered by it. This study aims to investigate Turkish language and literature teacher candidates' levels of skill in using Web 2.0 tools. A wide range of factors were considered in this context, including age, gender, educational program, technology, social media usage trends, undergraduate courses, and family income level.

Problem Statement

“What is the level of competence of Turkish and Turkish language and literature teacher candidates in using Web 2.0 tools?” is the primary problem statement of this study. Based on this fundamental problem formulation, the following subproblems were developed: The following variables were used to assess the Web 2.0 tool proficiency of Turkish language teacher candidates as well as Turkish language and literary experts:

Gender: Do gender differences in Web 2.0 tool competence show up as a substantial difference?

Age: Does the participants' age affect their capacity to use Web 2.0 tools differently?

Department/major science studied at the university: Is there a variation in students' proficiency with Web 2.0 tools based on the department/major science they study in the university?

Ownership of personal computers, tablets, and smartphones: Does ownership of these devices impact an individual's capacity to utilize Web 2.0 tools?

Social media application habits: Does the frequency of use of social media applications affect the user's proficiency with Web 2.0 tools?

Duration of Social Media Use: Does the amount of time spent on social media influence their proficiency with Web 2.0 tools?

Taking a computer or information technology course in undergraduate education: What impact does this variable have on the utilization of Web 2.0 tools?

Family income: Is there a statistically significant difference between the Web 2.0 tool competency of pupils and the family income variable?

Finding out how various factors influence the Web 2.0 tool usage competencies of Turkish language and literature teacher candidates, as well as Turkish language teacher candidates, is the primary goal of the research. It also looks at how these variables impact the candidates' technological competencies.

Purpose of the Research

This study's primary goal is to investigate, using a variety of variables, the Web 2.0 tool usage competencies of Turkish and Turkish language and literature teacher candidates. Gender, age, university department/major science, ownership of a personal computer, tablet, and smartphone, usage patterns of social media apps, amount of time spent on social media, the decision to enroll in a computer or information technology course during undergraduate studies, and family income level are all relevant factors in this context. The effects of several variables affecting teacher candidates' ability to use Web 2.0 tools have been investigated. This study aims to gain a more comprehensive understanding of the broad role of Web 2.0 tools in education. It also aims to determine the possible contributions of the competencies in using these tools to educational processes, to develop teaching strategies in this field, and to encourage creativity and effectiveness in educational practices. Studies in this field aim to understand the profound effects of using Web 2.0 tools on educational practices, to contribute to knowledge, and to create future teaching strategies. Similar studies in the literature emphasize that the inclusion of digital devices in the classroom improves student engagement, the educational process, and critical thinking ability. In this light, the research intends to add to the body of literature and considerably enhance the information usage abilities of aspiring teachers about technology integration in the learning-teaching process. The research seeks to both improve teacher candidates' information usage skills concerning web 2.0 tools and add to the body of knowledge on technology integration in the learning-teaching process.

Method

Research Model

The 'generic scanning model', one of the descriptive scanning models, was employed in this study to investigate the Turkish language and literature as well as the Web 2.0 tool competencies of Turkish teacher candidates. Using a sample within this universe, a survey study enables the quantitative or numerical definition of the tendencies, attitudes, or opinions of a research population (Fowler, 2008; cited as Creswell, 2017: 13). According to the screening model, in a universe with a high number of elements, a general assessment of the universe is made by

scanning the entire universe or a subset of samples (Karasar, 2009). With the use of the general screening model, this study examined Turkish language and literature, and Turkish teacher candidates. Variables such as gender, age, department or major science at university, possession of a personal computer, tablet, and smartphone, usage habits of social media apps, amount of time spent on social media, enrollment in computer or information technology courses during undergraduate studies, and family income level were also considered. Examined were usage competencies concerning Web 2.0 tools.

Study Group

278 teacher candidates who were enrolled in a university in eastern Turkey's college of education made up the sample for this study. It was found that there were 219 females and 59 males among these teaching applicants. Turkish and Turkish language and literature teacher candidates make up the research participants. Table 1 presents in detail the descriptive characteristics of Turkish and Turkish language and literature teaching candidates.

Table 1. Descriptive Characteristics of Teacher Candidates (N=278)

		n	**%**
Gender	Female	219	78.8
	Male	59	21.2
Age	18-20	51	18.3
	21-25	191	68.7
	26-30	22	7.9
	31 years or older	14	5.0
Department/major of study at university	Department of Turkish Language and Literature Education	107	38.5
	Department of Turkish Education	171	61.5
Own computer, tablet, and smartphone	Yes	261	93.9
	None	17	6.1
Using social media apps	Yes	266	95.7
	No	12	4.3
Time spent, on social media	1 hour	23	8.5
	2 hours	113	41.9
	3 hours	100	37.0
	3 hours or more	34	12.6
Taking a Computer or Information Technologies course during undergraduate education	Yes	214	77.0
	No	64	23.0
Family income level	8500 TL	119	42.8
	8500-15000 TL	117	42.1
	15000-25000 TL	31	11.2
	25000 TL +	11	4.0

78.8% of teacher candidates are women, 21.2% are men, 18.3% are 18–20 years old, 68.7% are 21–25 years old, 7.9% are 26–30 years old, 5% are 31 years old and over, % 38.5% are studying in the Department of Turkish Language and Literature Education, 61.5% are studying in the Department of Turkish Education, 93.9% have their computer/tablet and smartphone, 95.7% use social media, 8.5% spend 1 hour a day on social media, 41.9% spend 2 hours a day on social media, 37% spend 3 hours a day on social media, 12.6% spend 3 hours or more a day on social media, % 77 of them took courses on Computer or Information Technologies during their undergraduate education, 42.8% of them have a family monthly income of 8500 TL, 42.1% of them have a family monthly income of 8500-15000 TL, 11.2% of them have a family monthly income of 15000-25000 TL, 4% of them have a monthly income of 15000-25000 TL. It is seen that the monthly income of his family is 25000 TL and above.

Collection of Data

The "Web 2.0 Tools Usage Competency Scale (WAKYÖ)" created by Çelik (2021) was applied in this investigation. Google Docs was used to construct a form that would be used to gather study data. For anyone interested in receiving further information about the study's findings, the form's first section includes information about the study's purpose, the confidentiality of personal data, and the researcher's email address. Additionally, the instructions section clarifies that participation in the study is completely voluntary, that there is no pressure to engage, that the study will not be used to assess the participants, and that people are free to choose whether or not to participate. The participant's demographic data and personal details were added in the second section. The scale elements were in the last part. Participants were given access to the web address and extension of the form once it was finalized.

Data Analysis

The data collected for this study was analyzed using a variety of statistical techniques. On a computer, analyses were performed with the statistical application SPSS for Windows 22.00. Four distinct statistical analysis techniques were employed in total:

Frequency Analysis: This method of analysis evaluates the distribution of a data set by examining the frequency of values within a given variable.

Percentage Analysis: Percentage analysis provides a more meaningful view by calculating the proportion of each value in the total, as well as frequency analysis.

t Test for Independent Groups: This analysis evaluates whether the difference in means between two independent groups is statistically significant. It is used to make comparisons between two groups.

Kruskal-Wallis H Test: The purpose of this test is to ascertain whether the differences between independent (non-independent) groups are statistically significant. Ordinal or ratio scale data is the dependent variable, and categorical data is the independent variable. With the use of these statistical analysis techniques, the collected data can be thoroughly investigated and more reliable answers to the study questions can be obtained.

Research Ethics

'Higher Education Institutions Scientific Research and Publication Ethics Directive' was closely adhered to in this study (YÖK, 2023). There has been no behavior or action that goes against scientific research and publication ethics, and all of the guidelines set forth under the heading 'Actions Contrary to Scientific Research and Publication Ethics' as prescribed by the Directive have been fully followed. Ethical and scientific considerations were taken into account when this paper was being written.

Ethics Committee Permission Information

The Atatürk University Social and Humanities Ethics Committee Educational Sciences Unit Ethics Committee issued a judgment on April 11, 2023, with reference number 05/02, granting ethical permission for the project.

Results

Table 2 displays the arithmetic mean and standard deviation of the Web 2.0 Tools Usage Competency Scale scores obtained by teaching candidates.

Table 2. The arithmetic Mean and Standard Deviation of the Web 2.0 Tools Usage Competency Scale Scores

	$\overline{X}$	SD
Web 2.0 Tools Usage Competency Scale Total score	2.53	.86

The mean overall score of teacher candidates' proficiency with Web 2.0 technologies was determined to be 2.53 ± 0.86. These results show that taking into account the scale's scoring range of 1 to 5, the Web 2.0 Tools Usage Competency Scale's total score corresponds to the choice “rarely sufficient”. It can be concluded that teacher candidates' proficiency with Web 2.0 tools is lacking.

Table 3 compares the Web 2.0 Tools Usage Competency Scale scores of teacher applicants based on their gender.

Table 3. Comparison of Teacher Candidates' Web 2.0 Tool Usage Competency Scale Scores by Gender

Variable	Options	N	$\overline{X}$	SD	t	p
Gender	Female	219	2.47	.82	2.339	.020
	Male	59	2.76	.97		

The Web 2.0 Tools Usage Competency Scale total score according to the gender of teacher applicants had a significant t value, according to the t-test results, at the $p < 0.05$ level of significance. The chart indicates that male prospective teacher candidates have higher mean total scores than female candidates on the Web 2.0 Tools Usage Competency Scale.

It can therefore be said that male teacher applicants are more adept at using Web 2.0 tools than their female

counterparts.

Table 4 shows the comparability of Web 2.0 Tools Usage Competency Scale scores based on teacher applicants' ages.

Table 4. Web 2.0 Tools Usage Competency Scale Comparison Based on Teacher Candidates' Ages

Variable	Options	N	$\overline{X}$	SD	KW	p
Age	18-20	51	2.59	.76	2.821	.420
	21-25	191	2.52	.88		
	26-30	22	2.68	.94		
	31 years or older	14	2.19	.84		

The Web 2.0 Tools Usage Competency Scale scores based on the ages of teacher candidates were the only ones found to be insignificant, according to the results of the Kruskal-Wallis H test, with all p-values > 0.05 significance threshold. This study indicates that the teacher candidates' Web 2.0 Tools Usage Competency Scale scores do not significantly differ depending on their age. A Comparison of Web 2.0 Resources Table 5 shows the Usage Competency Scale scores broken down by major science and department where teaching candidates are enrolled.

Table 5. Comparison of Teacher Candidates' Web 2.0 Tools Usage Competency Scale Scores by University Department or Major in Science

Variable	Options	N	$\overline{X}$	SD	t	p
Department/major of study	TLLE	107	2.48	.87	.779	.437
	TE	171	2.56	.85		

The t value was determined to be p>0.05, indicating statistical insignificance, for the overall scores of teacher candidates on the Web 2.0 Tools Usage Competency Scale based on the department/major of science in which they are enrolled. Thus, it can be concluded that there is no distinction in the proficiency with Web 2.0 tools between the teacher candidates of the Turkish Language and Literature Education Department (TLLE) and the Turkish Education Department (TE). Table 6 presents a comparison of the Web 2.0 Tools Usage Competency Scale scores based on the possession of a computer, tablet, or smartphone by the teacher applicants.

Table 6. Comparison of Usage Competencies for Web 2.0 Tools Teacher Candidates a Scale Based on whether They Own a Computer, Tablet, or Smartphone

Variable	Options	N	$\overline{X}$	SD	U	p
Ownership of a smartphone, tablet, and personal computer	Yes	261	2.55	.86	1866.500	.273
	None	17	2.28	.79		

There was no significant change (p>0.05) in the U value of the Web 2.0 Tools Usage Competency Scale scores based on the ownership status of mobile phones, tablets, and personal computers. This finding suggests that there is no difference in teacher candidates' Web 2.0 Tools Usage Competency Scale scores based on whether or not

they possess a desktop, tablet, or smartphone. According to the social media platforms that teaching candidates utilize, Table 7 compares the Web 2.0 Tools Usage Competency Scale scores.

Table 7. Comparison of Web2.0 Tools Usage Competency Scale scores of Teacher Candidates according to Their Use of Social Media Applications

Variable	Options	N	$\overline{X}$	SD	U	p
The usage status of social media applications	Yes	266	2.52	.86	1303.000	.282
	No	12	2.84	.91		

The Web 2.0 Tools Usage Competency Scale scores of the teacher candidates on their use of social media applications were found to be non-significant at a $p>0.05$ significance level (U value). This finding implies that there is no relationship between the Web 2.0 Tools Usage Competency Scale scores of teacher candidates and the use of social media. The Web 2.0 Tools Usage Competency Scale scores of teacher candidates based on their daily social media usage are compared in Table 8.

Table 8. Comparison of Web2.0 Tools Usage Competency Scale Scores of Teacher Candidates according to the Time Spent on Social Media Applications Daily

Variable	Options	N	$\overline{X}$	SD	KW	p
The amount of time spent using social media	1 hour	23	2.86	1.10	6.881	.076
	2 hours	113	2.63	.89		
	3 hours	100	2.34	.78		
	3 hours or more	34	2.43	.72		

The Web 2.0 Tools Usage Competency Scale scores, which were based on the daily social media usage of teacher applicants, yielded a Kruskal-Wallis H test result with a KW value of $p>0.05$, indicating insignificance. This study found no differences in the Web 2.0 Tools Usage Competency Scale scores of teacher candidates based on their daily social media usage time. Table 9 presents a comparison of Web 2.0 Tools Usage Competency Scale results according to whether or not teacher applicants completed an undergraduate course on computers or information technology.

Table 9. Comparison of Usage Competencies for Web 2.0 Tools The Teacher Candidates' Scale Scores based on whether or not They Completed Information Technology or Computer Courses throughout Their Bachelor Studies

Variable	Options	N	$\overline{X}$	SD	t	p
Taking a computer or information technology course in undergraduate education	Yes	214	2.63	.84	3.539	.000
	No	64	2.20	.84		

Based on whether or not the teacher candidate took a computer or information technology course during their undergraduate studies, the Teacher Candidates' Web 2.0 Tools Usage Competency Scale t-test result At the $p < 0.05$ level, the total score was determined to be significant. Looking at the table, one can see that teacher candidates

who took computer or information technology courses as part of their undergraduate education had mean total scores that were higher than those of their non-teaching counterparts. In summary, it can be concluded that teacher candidates who completed courses in computer science or information technology during their undergraduate studies are more proficient in using Web 2.0 tools than those who did not. Table 10 shows the comparison of Teacher Candidates' Web 2.0 Tools Usage Competency Scale scores based on family income level.

Table 10. Comparison of Web 2.0 Tools Usage Competency Scale Scores of Teacher Candidates according to Their Family's Income Level

Variable	Options	N	$\overline{X}$	SD	KW	p
Family's income level	8500 TL	119	2.49	.78	4.203	.240
	8500-15000 TL	117	2.62	.93		
	15000-25000 TL	31	2.30	.87		
	25000 TL +	11	2.70	.90		

The Kruskal-Wallis H test yielded a p-value greater than 0.05 for teacher applicants' Web 2.0 Tools Usage Competency Scale scores based on their family income level, indicating insignificance. The findings show that there is no statistically significant difference in the teacher candidates' Web 2.0 Tools Usage Competency Scale scores based on their family income level.

Conclusion and Discussion

It shows that the arithmetic mean of the scores obtained by teacher candidates from the Web 2.0 Tools Usage Competency Scale is 2.53 ± 0.86. This evaluation, in the context of the scale having a scoring range between 1 and 5, indicates that teacher candidates are generally at the level of “I am rarely proficient” in Web 2.0 Tools Usage Competence. According to Keleş's (2019) research, it was concluded that teacher candidates considered themselves moderately competent in Web 2.0 technologies. The study carried out by Eyüp (2022) found that Turkish instructors' Web 2.0 tool proficiency fell short of the intermediate level.

Differences in score distribution among students show that the arithmetic mean and standard deviation are 0.86. This shows how pre-service teachers use Web 2.0 tools. These results show that teacher candidates often do not master Web 2.0 tools. The findings emphasize that certain strategies need to be implemented for teacher candidates to use these technologies effectively in lessons and student support systems. In light of this, the primary goal should be for teacher candidates to effectively integrate digital technology into future education programs. Eyyam et al. (2011), although prospective teachers expressed positive opinions about Web 2.0 tools, the majority had little or no knowledge of the technology and did not know how to use it. The usage of Web 2.0 tools in the classroom was examined from the viewpoints of aspiring teachers in a 2019 study by Ünal and Uzun, which revealed that there might not have been much effort put into understanding these technologies. People probably don't know how vital these resources are, given the advantages that modern technologies provide.

Significant disparities were found between the Web 2.0 Tools Usage Competency Scale scores of male and female

teacher applicants based on gender analysis. Male candidates for teaching positions performed worse than female candidates overall on the Competency Scale for Using Web 2.0 Tools. These results indicate how comfortable a candidate's gender is with using Web 2.0 tools. The fact that male candidates perform better than female candidates in teaching exams shows that this inequality arising from the use of technology should be taken into consideration. The results of the study should be considered when creating inclusive programs to provide training and support to educators of both genders. According to a study conducted by Geçim and İmer-Çetin in 2023, there is no statistically significant difference in the ability of teacher candidates to use Web 2.0 tools according to gender. According to Eyüp's 2022 research, gender does not affect Turkish educators' ability to use Web 2.0 tools. Gender-based differences in the use of Web 2.0 technology by male and female teachers were not found statistically significant in the comparative study conducted by Atalmış and Şimşek (2022). These findings suggest that teacher education programs and digital technology integration tactics shouldn't be primarily driven by age-based differences. Research by Akbaş and Yünkül (2024) revealed that age had no discernible effect on classroom teachers' use of Web 2.0 tools.

According to their departments and majors, the Web 2.0 Tools Usage Competency Scale values of prospective teachers in the disciplines of Turkish education and language and literature are shown. However, there was no appreciable variation in the Web 2.0 Tools Usage Competency Scale total scores among the teacher candidates according to the university's science department or major (t-test findings). Therefore, there is no appreciable difference between the teacher candidates of the Department of Turkish Language and Literature Education and the teachers of the Department of Turkish Education in terms of their proficiency with Web 2.0 tools. These findings show that teacher candidates' levels of Web 2.0 tool competency are similar across the departments in which they are enrolled. In 2022, Atalmış and Şimşek (2022) studied to find out how much science and social studies teachers used Web 2.0 materials. The variable of studying in different departments did not show any significant variance, according to the data.

The results of the Web 2.0 Tools Usage Competency Scale are shown according to teacher candidates' computer, tablet, or smartphone usage. According to the Mann-Whitney U test results, teacher candidates' Web 2.0 Tools Usage Competency Scale scores do not show a significant difference depending on whether they own a smartphone, tablet, or computer. Thus, it was seen that teacher candidates' possession of a tablet, smartphone, or computer did not significantly affect their Web 2.0 Tools Usage Competency Scale scores. The findings of this study show that having technology does not significantly affect pre-service teachers' Web 2.0 technology proficiency.

Pre-service teachers' Web 2.0 Tools Usage Proficiency Scale evaluations are shown according to social media usage. However, the Mann-Whitney U test did not show a statistically significant difference in the Web 2.0 Tools Use Proficiency Scale regarding pre-service teachers' use of social media platforms. As a result, there is no significant difference between the research participants' social media activities and future educators' Web 2.0 Tools activity Competency Scale scores. This study shows that teacher candidates' use of social networking sites does not affect their ability to use Web 2.0 tools.

The results of the Web 2.0 Tools Usage Proficiency Scale affect pre-service teachers' daily use of social media. Using Web 2.0 Tools One of the factors that determine the applicant's results on the Competency Scale in Using Web 2.0 Tools is how often they use social media. Kruskal Wallis H test showed that there was no statistically significant difference between teacher candidates' Web 2.0 Tools Usage Proficiency Scale scores and their daily social media usage. Therefore, the scores of the Competency Scale in Using Web 2.0 Tools do not differ depending on the time teacher candidates spend on social media daily. According to the findings of this study, prospective teachers' daily social media use does not have a significant impact on their familiarity with Web 2.0 tools.

Teacher candidates who have completed their undergraduate education in the field of computer science or information technologies can see their total scores using the Competency Scale in Using Web 2.0 Tools. The Web 2.0 Tools Usage Proficiency Scale general score averages of the teacher candidates who finished the computer or information technologies course were higher than those of the teacher candidates who did not finish the course, according to the t-test results. Consequently, it can be claimed that students who have studied computer science or information technology as undergraduates are more adept at utilizing Web 2.0 technologies than other students. The study found that the information technology abilities teacher candidates gained during their undergraduate studies had a beneficial impact on their ability to use Web 2.0 tools. A study by Geçim & İmer-Çetin (2023) claims that after discovering how poorly they used Web 2.0 tools, some teacher applicants felt unqualified. A further factor that hindered their utilization of Web 2.0 tools was their perception that they had not received any instruction on how to utilize them properly.

It was determined that the scores of the Competency Scale in Using Web 2.0 Tools did not differ significantly according to the family income level. Thus, there is no appreciable difference in the Web 2.0 Tools Usage Competency Scale scores of the teacher candidates who are involved in the study based on the family income level. This study shows that the financial level of a candidate's family has no bearing on how proficient they are using Web 2.0 tools.

A broad synopsis of the research findings indicates that teacher candidates' general Web 2.0 Tools Usage Competence is at the “I am rarely proficient” level. Comparing the two groups of teacher candidates by gender, it was found that male candidates scored higher on the Web 2.0 Tools Usage Competency scale than female candidates. Regarding the Web 2.0 Tools Usage Competency scores, there was no statistically significant difference between the teacher candidates in the age group studied. Regardless of which department or science major each student at the school studied, the evaluations were done in the same way.

However, it was shown that teacher candidates with much higher Web 2.0 Tools Usage Competency scores than those without had taken computer or information technology courses during their undergraduate studies. There were no appreciable differences found in the comparisons of other study factors, including household income level, social media use, and daily social media usage time. It has been observed in this regard that a few factors, such as gender and the number of undergraduate courses taken, generally have a beneficial effect on the Web 2.0 tool knowledge of teacher candidates. Nevertheless, no discernible effects were found for age, family income, university department, social media use, or duration of use on this skill. These results show that the majority of

candidate teachers were only somewhat proficient with Web 2.0 tools.

It is vital to choose the right teaching technologies and methods and use them effectively to increase the quality and efficiency of teaching processes. In this way, the enrichment, diversification, and effective use of Web 2.0 tools in teaching-learning processes makes a significant contribution to successfully achieving the goals of education (Çoban & Adıgüzel, 2022). Considering the benefits of Web 2.0 tools, it has been revealed that the ability of teachers and students to share their knowledge worldwide, regardless of the classroom environment, has a positive effect on the quality of education (Selvi, 2022). According to Taşlıçay Arslan and Demirkan's (2019) study, Web 2.0 tools provided a significant interaction in increasing the self-efficacy levels of teacher candidates, and in this context, it revealed the necessity of teaching Web 2.0 tools systematically in the undergraduate education processes of teacher candidates. According to Çelik (2021), it is important for teachers to have the competence to use Web 2.0 tools in their educational processes, understand the functions of these tools, and integrate them into their fields. Therefore, teachers need to be competent and equipped in the digital field to teach students effectively in face-to-face and distance education environments. Çetin (2016) states that teacher education in Turkey is generally given in education faculties, and pedagogical formation training certificate programs are also common, but it is thought that teacher candidates are not given sufficient technology use training among these programs. As to the findings of Kaya and Kaya's (2014) study, all aspiring educators believe that schools ought to provide digital citizenship instruction to enable students to use technology responsibly and thoughtfully. Teachers and teacher candidates should be driven to create materials that incorporate technology and their subject-matter expertise, and they should be aware of helpful Web 2.0 resources, according to Tatlı et al. (2016). In this way, the importance of developing strategies to incorporate digital technology into teacher education programs becomes evident. Future educators should be encouraged to develop their digital skills through training programs that teach them how to use the latest instructional technologies. They should also have access to the tools they need to audit online courses. As a result, teacher education programs need to be strengthened with methods that include digital technology to improve teacher candidates' skills in transferring knowledge in rapidly changing digital environments. Using these strategies, future educators should be prepared to face the challenges of the digital age and successfully pursue their careers.

Recommendations

Given the results of this investigation, some suggestions for further study can be made. Subsequent research endeavors may delve deeper into the correlation between teacher candidates' digital competency levels and their pedagogical skills, with a particular emphasis on the impact of Web 2.0 tools on instructional strategies. Future research to better understand how training initiatives could improve users' skills with Web 2.0 products may center on more empirical investigations. By conducting an interdisciplinary analysis, research can be increased to determine the needs of pre-service teachers in different fields such as science, mathematics, and literature to use Web 2.0 tools and to contribute to discipline-specific education program. To use Web 2.0 tools more effectively, further analysis and experimental studies can be conducted to determine specific training strategies for digital skills development. Research can be conducted to understand the relationship between social media usage time and Web 2.0 tools usage competencies and to evaluate the potential role of social media in education. Detailed

age-based analyses can be carried out to compare the usage levels of Web 2.0 tools of different age groups, which can help determine the educational needs of teacher candidates specific to their age groups. Research that examines gender-focused Web 2.0 tools usage competencies in more depth can provide important information so that educational programs can better respond to gender-based needs.

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Author Information

Abdulkadir Kırbaş	**Mesut Bulut**
https://orcid.org//0000-0001-9846-0256	https://orcid.org/0000-0002-0733-0964
Atatürk University	Atatürk University
Türkiye	Türkiye
Contact e-mail: *akadirkirbas@atauni.edu.tr*	