

## Experimental Studies in Teaching Turkish as a Foreign Language in Relation to Web-Based Computer Technologies

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### SUMMARY

The purpose of this research is to investigate how Web based and computer technologies impact studies, in teaching Turkish as a foreign language. Through a qualitative approach the study extensively explores this subject matter. To examine studies related to the use of Web based technology in teaching Turkish, a document analysis technique was employed. Data were collected from scientific journal articles and thesis studies published between 2010 and 2023 with a focus on teaching Turkish as a foreign language using Web based technology. The research specifically looked at studies conducted from 2010 onwards and twelve articles and thesis studies on the subject were examined. These studies demonstrated the effects of Web 2.0 tools and applications like Voki, Kahoot! ChatGPT, blogs and podcasts on language learning processes. The findings indicate that effectively integrating technology into language instruction plays a role in enhancing students language skills and motivation. Furthermore, remote education platforms have the potential to revolutionize language learning experiences. The results also highlight that technology supported experimental studies can be successfully utilized in teaching Turkish as a foreign language. Overall, these findings emphasize the potential of technology and Web based applications, in language instruction.

**Keywords:** Turkish as a Foreign Language, Web-Based Technologies, Computer Technologies, Experimental Study.

### INTRODUCTION

The number of people interested in improving their communication skills by learning a non-native language is constantly increasing. Several language policies promoting multilingualism have contributed to the rapid growth of this trend. The Common European Framework of Reference for Languages (CEFR), developed by the Council of Europe as a reference framework for foreign language teaching, outlines the following objectives concerning language policies:

"Cultural and linguistic diversity is a shared value that needs to be preserved and enhanced; turning this diversity into a source of mutual understanding is of crucial importance in the field of education" (European Fundamental Rights Regulation, 2018).

In line with these objectives, the development of language policies that align with these aims encourages students to learn languages other than their native tongue. According to Telc (2013), nations can achieve convergence through collaboration and coordination by establishing and forming national principles for contemporary language teaching and learning. Telc argues that this can be achieved through policy measures and treaty agreements.

Global interactions resulting from international developments, along with Turkey's strengthening regional and global position and significance, have led to an increasing importance of Turkish and teaching Turkish as a foreign language. Turkish is currently widely spoken and used by a significant population in various regions (Erdem, 2009, p. 889). The aim of teaching Turkish as a foreign language is to improve individuals' listening, speaking, reading, and writing skills in Turkish (Karagöl, 2019, p. 1).

The reasons for individuals interested in expanding their language repertoire and learning Turkish as a non-native language can be categorized into nine categories, as identified by Tok and Yiğın (2013): academic, economic, tourism, family relations, historical ties, political, marriage, and religious. As a result of these factors, the number of non-native speakers learning Turkish as a second language is continuously growing, necessitating an improvement in the quality of resources available in this field.

The weight of technology is increasing in nearly all sectors of society, including education, in an increasingly technological society. Developing and advancing technology has created a new teaching style (Çulha, 2018). The reason behind this lies in the younger generation, who have a strong connection with technology and increasingly rely on technology-based educational platforms.

The integration of technology into education, like in other sectors, is rapidly taking place. According to Aikina and Zubkova (2015), technology has become a significant component of the educational process in today's society. Durusoy (2011) points out that there are many Web 2.0 applications available to users today. According to Cambridge Dictionary (2022), "Web 2.0 tools" refer to any Website on the internet that allows users to produce, modify, and share information. These tools enable users to create digital content accessible online. With the widespread use of Web 2.0 technologies, the teaching-learning process is no longer confined to traditional classrooms; it can now take place anywhere and anytime. According to Manty et al. (2017), the nature of educational activities today has shifted from teacher-centered to more interactive environments that promote student-teacher collaboration.

Using Web 2.0 technologies, students can work together in a natural learning environment and improve their basic language skills (Arıkan and Özel 2015; Baş and Yıldırım 2018). Web 2.0 technologies enable students to communicate with each other and contribute to a fun and interactive classroom environment (İnce and Akdemir, 2013; Agravat and Raval, 2015). In this context, they are particularly beneficial in improving speaking skills during the process of learning a second or foreign language (Yeşilbağ and Korkmaz, 2021).

In today's culture, the young population represents the most active and dynamic segment of a constantly moving and changing society. This demographic structure is known as "digital natives" and is characterized by not accepting traditional teaching techniques and being resistant to prevailing learning models. In this context, one of the most important educational resources available today is known as "Web 2.0 tools." Indeed, the widespread use of Web 2.0 applications in educational settings has become more common in recent years. According to Horzum (2010), the term "Web 2.0" encompasses various tools that enable the creation of different applications. The reason behind this is that the idea of Web 2.0 is both complex and comprehensive, and thus cannot be created with a single tool.

The availability of online resources and mobile learning environments for teaching Turkish as a foreign language is currently seen as a rising trend. The cultural consequences of individualization and urbanization, which are prevalent today, have played a significant role in this development. These tools, which suit the learning styles of isolated and individualized individuals, are referred to as individual learning technologies. Many institutions and organizations, such as Yunus Emre Institute's "Distance Turkish Teaching Portal," Anadolu University's "Turkish Certificate Program: TSP," "Mother Tongue Turkish," Yaşar University's "Learning Turkish," and Sakarya University's "Turkish in 3 Minutes," have considered these emerging trends to offer new teaching strategies, materials, and resources for teaching Turkish. This systematic review aims to investigate the effectiveness of Web-based technologies in teaching Turkish as a foreign language.

### **Research Objective**

The aim of this research is to examine experimental studies related to the use of Web-based technology in teaching Turkish as a foreign language from various variables' perspectives. To achieve this goal, the following questions have been addressed:

- What is the impact of technology on teaching Turkish as a foreign language?
- Which Web-based tools and applications are most effective in Turkish language learning?
- What are the source selection and data collection tools?

### **METHOD**

#### **Research Design**

The study is designed using a qualitative design, which allows for an in-depth and holistic examination of a topic or situation in line with the research purpose (Creswell, 2013; Yıldırım and Şimşek, 2011). In this study, the qualitative research method of document analysis is employed. Document analysis (Corbin and Strauss, 2008) involves the systematic analysis of written documents to develop an understanding and derive meaning. It is one of the qualitative research methods used to analyze written documents systematically (Wach, 2013). In this research, experimental studies related to the use of Web-based technology in teaching Turkish as a foreign language are examined through document analysis.

#### **Data Collection**

The data for the study consist of articles related to the teaching of Turkish as a foreign language and Web-based technology published in scientific journals between 2013 and 2023. The study is limited to experimental studies concerning the use of Web-based technology in teaching Turkish as a foreign language. In the data collection process, indexes were initially identified, and articles related to "teaching Turkish as a foreign language" were

filtered using the keyword "Web-based technology" from the databases Dergi Park, TR Dizin, and Ulusal Tez Merkezi. After filtering, a total of 1484 articles and 768 thesis studies related to the teaching of Turkish as a foreign language remained from a total of 136 academic journals surveyed. Subsequently, it was decided to examine Web-based studies, and 324 articles and 67 thesis studies were reviewed. Next, the publication year of the articles was set to 2010, and 185 articles and 36 thesis studies written after 2010 were selected for the study. Then, experimental studies on teaching Turkish as a foreign language using web-based and computer technologies conducted since 2010 were subjected to quality review. For the quality review, the "article quality assessment criteria" scale was used and the articles were analyzed. At this stage, "critical appraisal skills program (CASP)" randomized controlled trial and systematic review checklists were used (CASP, 2020). According to this scale consisting of 11 criteria in total, each criterion item was determined as one point and the article with a total of eight points was considered as a good article and included in the systematic review. In this context, 12 articles and one thesis study were determined to be in compliance with the "article quality assessment criteria" and were considered as the subject of the review.

These criteria are as follows:

1. "Did the study address a clearly focused research question?"
2. Was the assignment of participants to interventions randomised?
3. Were all participants who entered the study accounted for at its conclusion?
4. Were the participants 'blind' to intervention they were given?
  - Were the investigators 'blind' to the intervention they were giving to participants?
  - Were the people assessing/analysing outcome/s 'blinded'?
5. Were the study groups similar at the start of the randomised controlled trial?
6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)?
7. Were the effects of intervention reported comprehensively?
8. Was the precision of the estimate of the intervention or treatment effect reported?
9. Do the benefits of the experimental intervention outweigh the harms and costs?
10. Can the results be applied to your local population/in your context?
11. Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?" (CASP, 2020, p.2-4).The table of the data collection process can be seen below.

**Table 1.** Studies Included in the Systematic Review Scope.

Index Knowledge	Total	Studies with the Use of Web-Based Technology, in TFL	Studies without the Use of Web-Based Technology, in TFL
Dergi Park	468	174	294
Ulusal Tez Merkezi	768	67	701
TR Dizin	248	83	165
Total	1484	324	1160
		Studies after 2010	Studies before 2010
Dergi Park	174	96	78
Ulusal Tez Merkezi	67	36	31
TR Dizin	83	53	30
Total	324	185	139
		Studies with Experimental Design	Studies without Experimental Design
Dergi Park	96	3	92
Ulusal Tez Merkezi	36	8	30
TR Dizin	53	1	51
Total	185	12	173
Quality Score	12	>8 0	<8 0

### Data Analysis

In this research, a "descriptive analysis method" was used to analyze the data. "Descriptive analysis aims to categorize data obtained from numerous units based on their attributes" (Büyüköztürk, 2008: 4). According to this analytical approach, the collected data is summarized and interpreted based on pre-established conceptual frameworks or themes. In descriptive analysis, direct quotations are frequently used to reflect noteworthy aspects. The objective of this type of analysis is to present the findings to the reader in an organized and interpreted manner.

For this purpose, the data obtained is first described in a systematic and clear manner. Then, these descriptions are explained and interpreted, examining cause-and-effect relationships, and reaching certain conclusions. The correlation, interpretation, and implications of emerging themes may also be among the dimensions of the researcher's interpretations (Yıldırım and Şimşek, 2006: 224).

### Validity and Reliability

To ensure the reliability of the research, the data obtained were evaluated separately by two researchers. The reliability formula suggested by Miles and Huberman (1994) was used to determine the agreement between the evaluators. As a result of the calculation, the reliability of the research was found to be 80%. According to Miles and Huberman (1994), reliability calculations exceeding 70% indicate the reliability

## FINDINGS

**Table 2.** The Impact of Technology on Teaching Turkish as a Foreign Language

Study	Result/Impact
1 The Impact of Web 2.0-Based Technology Applications on Speaking Skills and Speaking Anxiety in Teaching Turkish as a Foreign Language: The Case of Voki (Aktaş, 2023; participant: 30).	<ul style="list-style-type: none"> <li>The speaking skills of students, in the group were. Their speaking anxiety was reduced as a result of engaging in speaking activities during foreign language instruction.</li> <li>Students who were part of the group shared opinions regarding the use of the Voki application.</li> <li>It is advisable to incorporate the Voki application into speaking activities, for foreign language instruction.</li> </ul>
2 Computer-Assisted Education's Effect on Word Stress Skills in Teaching Turkish as a Foreign Language (Sarıman & Çetin, 2018; participants: 23).	<ul style="list-style-type: none"> <li>There was a significant increase in participants' word stress accuracy, indicating that computer-assisted word stress training is effective in improving word stress skills in Turkish language instruction.</li> </ul>
3 The Impact of Web 2.0 Tools on Enhancing Vocabulary of Foreign Learners in Turkish Language Teaching: The Case of Kahoot! (Tıraşoğlu; participants: 32).	<ul style="list-style-type: none"> <li>The results showed that the experimental group had a pre-test average of 36.50 and a post-test average of 39.50. The control group had a pre-test average of 33.50 and a post-test average of 34.50.</li> </ul>
4 The Use of Web 2.0 Tools in Teaching Turkish as a Foreign Language and Its Effect on Academic Achievement (Göker & İnce, 2019; participants: not specified).	<ul style="list-style-type: none"> <li>"3 Dakikada Türkçe" and other Web 2.0 tools are becoming more popular in the realm of teaching Turkish as a language.</li> <li>The incorporation of "3 Minutes of Turkish", into the teaching of the "state" has shown improved performance when compared to conventional methods.</li> <li>The integration of Web 2.0 tools in second language acquisition has proven advantageous, for learners.</li> </ul>
5 Web 2.0 Tools in Teaching Turkish as a Foreign Language: Writing Skills with Poll Everywhere (Baş & Turhan, 2017; participants: 10)	<ul style="list-style-type: none"> <li>Poll Everywhere, a tool based on Web 2.0 technology received feedback, from students as it offered a learning environment with multiple interactive features.</li> <li>The incorporation of Poll Everywhere in the writing process was found to enhance students motivation levels.</li> <li>Students expressed an interest, in utilizing Poll as a regular component of their writing classes.</li> </ul>
6 Turkish Language Learning with ChatGPT: (Nur, 2023; participants: not specified)	<ul style="list-style-type: none"> <li>ChatGPT has the potential to support individuals in their journey of learning Turkish as a native language.</li> <li>The functionalities of ChatGPT encompass generating exchanges comprehending the meanings of words and sentences translating texts into Turkish aiding with pronunciation reading out texts and offering constructive feedback on written compositions.</li> <li>Utilizing ChatGPT can prove valuable in assisting individuals to overcome hurdles encountered during the process of learning a language.</li> </ul>
7 The Effects of Blogs on Writing Skills in Teaching Turkish as a Second Language (Yavuz & Tok, 2014; participants: 12)	<ul style="list-style-type: none"> <li>Blogs greatly contribute to enhancing the writing abilities of students who are studying Turkish as a language.</li> <li>Students who actively participate in blogging exhibit writing skills when compared to those who follow methods of writing</li> </ul>

		<p>instruction. Engaging in blogging enriches the learning experience.</p> <ul style="list-style-type: none"> <li>•Blogs also have a positive impact, on developing the writing skills of students who are acquiring Turkish as a second language.</li> </ul>
8	The Effect of Web-Based Remote Turkish Language Education on Achievement and Attitude in Writing Class (Türker, 2014; participants: 80)	<ul style="list-style-type: none"> <li>• At first students had a view of education during the pre test but their perspective shifted towards a more positive outlook, in the post test.</li> <li>• The control group exhibited composition planning skills than the group in the writing class.</li> <li>• Remote learning applications technology, with its features enables high quality education regardless of time and location.</li> </ul>
9	An Examination of Remote Education Websites for Teaching Turkish as a Foreign Language in Terms of Usability: The Example of "3 Dakikada Türkçe" (Göker, 2019; participants: 33)	<ul style="list-style-type: none"> <li>•"3 Dakikada Türkçe" and other Web 2.0 tools are becoming more popular, in the field of teaching Turkish as a language.</li> <li>• When it comes to teaching the case (belirtme durumu) using "3 Dakikada Türkçe" has shown to improve performance more than traditional methods.</li> <li>• Incorporating web 2.0 tools, into language learning can have advantages for learners.</li> </ul>
10	The Effect of Podcasts (Audio Broadcasts) on Productive Language Skills in Teaching Turkish as a Foreign Language (Yorgancı, 2021; participants: 40)	<ul style="list-style-type: none"> <li>• Researchers conducted a study to evaluate the effectiveness of the "3 Dakikada Türkçe" website, in teaching Turkish to native speakers.</li> <li>• The study involved gathering feedback from A1 level students at TÖMER centers in Turkey through a survey as conducting a usability test of the "3 Dakikada Türkçe" website.</li> <li>• The findings of the study indicated that the "3 Dakikada Türkçe" website is user friendly and can be utilized as a tool, for teaching Turkish as a language.</li> </ul>
11	The Impact of Technology on Anxiety in Teaching Turkish as a Foreign Language (Genç Köylü, 2020; participants: 26)	<ul style="list-style-type: none"> <li>• The anxiety levels, among students who are studying Turkish as a language are at a level.</li> <li>• The education received did not have an influence on the anxiety levels experienced by the students.</li> <li>• Similarly the utilization of information technologies did not have an impact, on the anxiety levels of the students.</li> </ul>
12	The Impact of Web 2.0 Visual and Auditory Communication Applications (Skype) on Speaking Ability in Teaching Turkish as a Foreign Language (Gün, 2015; participants: 30).	<ul style="list-style-type: none"> <li>• The use of visual communication applications, like Skype which're part of the Web 2.0 technologies has shown a beneficial effect on enhancing the speaking abilities of foreign students, in Turkish language education.</li> <li>• In this research a total of 30 students participated, with 43.33% being female and 56.66% being male.</li> <li>• To gather data the Speaking Assessment Scale created by Sallabaş (2001) was utilized. It underwent validity and reliability testing.</li> </ul>

The application called Voki has proven to be effective, in improving students speaking skills and reducing their anxiety when learning languages. Students have given feedback on this application making it a recommended tool for Turkish language teaching. Another successful intervention in teaching is computer assisted stress training, which has helped students improve their ability to articulate stress in words. This training, conducted over a 5 week period resulted in an increase in participants success in stress articulation. Furthermore the Kahoot! application has shown effects on learners vocabulary development. The group that used this application had vocabulary growth compared to the control group indicating that such applications can effectively support language learning.

In addition to these findings Web 2.0 tools like 3 Dakikada Türkçe have been identified as resources for teaching Turkish as a foreign language. When using this tool to teach the concept of "definiteness " students achieved success compared to traditional methods. These Web based tools have been recognized as beneficial for language learning. Another Web 2.0 tool called Poll Everywhere has received evaluations from students. Has increased their

motivation to write. Students expressed their desire to regularly use this tool in writing classes highlighting its effectiveness, in improving writing skills.

Afterward ChatGPT has been examined as a chatbot powered by intelligence that can aid in the learning of Turkish as a native language. It possesses the ability to engage in conversations explain word and sentence meanings translate, provide pronunciation assistance read texts aloud and give written feedback. These features support students across aspects of their learning journey.

Furthermore a study has indicated that blogs have had an impact, on the writing skills of students who are learning Turkish as their language. Students who maintained a blog demonstrated proficiency in writing compared to those who received writing instruction. Blogs have empowered students by granting them freedom and encouraging creativity, which has ultimately improved their writing abilities.

In addition to these studies distance learning platforms have brought about changes in attitudes among students studying Turkish as a language. Despite holding attitudes during the pre test phase remote learning has led to positive shifts in students perspectives. Moreover remote learning applications have shown potential for enhancing composition planning skills within writing classes. The 3 Dakikada Türkçe Website has proven to be accessible and suitable, for teaching Turkish as a language. Its usability and effectiveness significantly contribute to instruction. Additionally podcasts have been proven effective in enhancing students speaking skills when it comes to teaching the language.

Audio broadcasts highlight the significance of incorporating sound based materials into the language learning journey. When it comes to students learning Turkish as a language it has been observed that they experience a level of anxiety and their anxiety levels are not significantly impacted by the use of technology. Therefore relying on technology may not be the solution, for reducing anxiety. On another note communication tools like Skype, which fall under the umbrella of Web 2.0 have had an influence on improving speaking skills among students in Turkish language education.

To sum up based on these findings it can be concluded that internet technologies can effectively be employed in teaching Turkish as a language and contribute to enhancing students language skills. However it is important to note that not all interventions may effectively reduce anxiety levels and further research is warranted in this area. It is crucial, for teachers and educators to carefully select technologies that cater to needs and preferences in order to enrich the overall language teaching process.

**Table 3.** Technology-based tools and applications used in experimental studies for Turkish language learning.

Tools		Intervention
1	Voki	One week prior, to the introduction of the Voki application to students they were given a chance to get acquainted with the app through sample presentations and demonstrations of applications by their teacher. Throughout the six week implementation phase students, in the group presented their Voki applications based on assigned speech topics. The evaluation included measurements of their speaking abilities and levels of speaking anxiety.
2	Computer-assisted stress training	The Computer Assisted Turkish Word Stress Training was designed based on expert opinions. Implemented over a 5 week period consisting of 10 lesson hours. As part of another activity we explained the stress patterns, in Turkish using sample words and phrases. During these explanations we displayed the analysis of each word, on the screen, which was obtained using the Praat 3.8.47 program. Students were then asked to pronounce these words while their recordings were projected onto the screen for everyone to see. This allowed them to listen to the words and observe stress patterns helping them determine if they correctly emphasized the syllables. We also measured their Word Stress Achievement as an outcome assessment.
3	Kahoot!	The Kahoot! application was utilized to enhance the skills of native Turkish learners. Over a span of 12 weeks language exercises focused on vocabulary were carried out using the application. The findings indicated an impact of the Kahoot! application, on the development of vocabulary. An evaluation was conducted to measure students proficiency in vocabulary.
4	"3 Dakikada Türkçe" web 2.0 tool	In the beginning students, in the group watched a video on the 3 Dakikada Türkçe website that discussed the concepts of "definiteness" and "noun phrases" in their languages. They then engaged in activities related to reading, writing, listening, speaking and vocabulary. As an assessment a test focused on the topic of

		"definiteness" was administered to these students. On the hand the control group received narrative based instruction, on the same topic and also took the same final test as the experimental group. After a period of eight weeks both groups participated in a retention test to assess their long term learning outcomes.
5	Poll Everywhere web 2.0 tool	We planned three activities using the Poll web 2.0 tool focusing on communication skills at levels; words, sentences and paragraphs. These activities, Social Media, Bookworm and Which Movie? were chosen based on the topics covered in our course book. In total we spent six lesson hours spread, over two days answering all the questions, in written form. Throughout this process students were encouraged to either discuss the answers or rate them using Poll Everywhere.
6	ChatGPT	Exercises and activities were created for categories including generating conversations understanding word meanings, sentence meanings determining word meanings within sentences grasping overall text meaning translating English texts into Turkish practicing pronunciation reading texts aloud and providing written feedback.
7	Blogs	The group that was part of the experiment underwent a six week training program focusing on improving their writing skills using blogs. On the hand the control group did not receive any method apart from traditional writing instruction. Both groups initial and final assessments were assessed using the Composition (Writing) Evaluation Scale.
8	Computer-based live lessons over the internet	Students, in the classroom received teacher centered lessons for written expression while remote learning students had web based lessons on their computers. In the part of the study the topics for written expression and writing instruction were divided into fourteen weeks. Given simultaneously to both the experimental and control groups. The experimental group had web based lessons through their computers along with lesson notes and PowerPoint presentations. The control group students received the topics in the classroom at the time as the experimental group. Pre test and post test assessments were conducted for both groups, in the fourteenth weeks of the research.
		The students, in the group, who were tasked with creating their audio broadcasts were divided into five working groups. Each group consisted of four students. Was determined based on the Action Oriented Approach and the supported instructional set for instruction. The experimental group received instructions on producing three broadcasts within a six week period following the principles of the Task Based Method as well as the Action Oriented Approach and supported instructional set. The control group did not receive any intervention prior to the study; however during the study period they were assigned activity tasks that corresponded to the number of broadcasts produced by the group acting as supplementary activities, for regular instruction.
9	Podcast	
10	"3 Dakikada Türkçe" web 2.0 tool	Firstly, students belonging to the experimental group selected their own source languages on a Turkish website to take a lesson on the topics of 'definiteness' and 'noun phrases.' These students watched a video prepared in Turkish and their source language; they completed activities in reading, writing, listening, speaking, and vocabulary sections. Following this stage, the students took a final exam that focused on the topic of 'definiteness.' On the other hand, the control group learned the topic of 'definiteness' through traditional instructional methods, and at the end of the process, the same final exam that was administered to the experimental group was also given to the control group. After eight weeks, another test was conducted to assess the retention of knowledge for both the experimental and control groups.
11	Computer and internet-based lesson delivery	In the week we assessed the students anxiety levels by giving them a test anxiety scale. Throughout the following six weeks we provided topic explanations through learning. Encouraged the students to utilize mobile applications. Finally at the end of the six week period we conducted a test to evaluate their final anxiety levels.
		Two speaking activities were conducted per week using Skype as part of our speaking lessons. In the study the control group received teaching methods for

12 Skype

speaking lessons while the experimental group utilized the Skype application. We prepared PowerPoint presentations with images, for our Skype speaking activities, which helped diversify the approach used in the speaking section of our book.

Various technologies based on Web 2.0 were utilized in language teaching research, for purposes. For example the application called Voki was used to assess how it affects speaking skills and reduces speaking anxiety when teaching Turkish as a language. The students were introduced to Voki a week before using it where they were shown sample presentations and demonstrated applications under the guidance of their teacher. Similarly a Computer Assisted Turkish Word Stress Training called Word Stress Training was conducted over 5 weeks totaling 10 lesson hours. During this period the stress aspects of Turkish were explained using sample words and phrases. The students were asked to pronounce these words and the sound analysis of each word was displayed on the screen with the help of Praat 3.8.47 program.

Additionally an interactive learning environment called Kahoot! was employed to enhance learning for students studying Turkish. Vocabulary exercises took place through this application for a duration of 12 weeks. Moreover a Web tool called "3 Dakikada Türkçe" served as an approach to methods for teaching grammar topics in the experimental group. Students from that group selected grammar topics in their languages, from the "3 Dakikada Türkçe" Website and watched corresponding videos. They engaged in activities related to reading, writing, listening, speaking and vocabulary sections.

The group that was not exposed to any teaching methods received grammar instruction through storytelling. After this process a test was given to both the control groups. In addition the Poll Everywhere tool was used to enhance students written and spoken abilities by engaging them in activities. We prepared three activities where students had to explain the written texts or rate them using Poll Everywhere. Furthermore ChatGPT was utilized for exercises and tasks related to generating conversations understanding word and sentence meanings translating texts into Turkish pronouncing words correctly reading texts aloud and providing written feedback.

To help students improve their writing skills blogs were used as a platform, for teaching written expression. The experimental group received blog based writing instruction, for six weeks while the control group followed writing instruction without any interventions. The research also incorporated computer based lessons conducted over the internet podcasts and Skype sessions as language teaching methods in order to enhance language skills. By implementing these approaches we measured student achievements, language proficiency levels and anxiety levels.

**Table 4.** Source Selection and Data Collection Tools in Experimental Studies

	Source Selection	Data Collection Tool
1	The study group consists of 61 students at the A2 level, enrolled in a Turkish as a foreign language center at a university located in the southern region of Turkey (31 in the experimental group, 30 in the control group). These students were selected through random sampling.	Data collection tools used in the study include the Speaking Anxiety Scale and the Speaking Skill Assessment Form.
2	23 foreign students were randomly selected from the Turkish Preparatory Program at Muğla Sıtkı Koçman University Foreign Languages School.	Word Stress Measurement Tool.
3	Experimental group 9 female 7 male, control group 7 female 8 male students / random sampling	Achievement Test
4	33 foreign students at A1 level, learning Turkish as a foreign language in Turkish Language Teaching Application and Research Centers in Turkey, formed the sample through random sampling method at Sakarya University TÖMER	Achievement Test and the Retention Test
5	A group of 10 students (5 female, 5 male) at B1 level from Yıldız Technical University TÖMER were selected using the convenient sampling method to utilize the Poll Everywhere Web 2.0 tool	Word Cloud, Question-Answer, and Open-Ended Question sections.
6	Students /Not specified	ChatGPT



7	group consisted of 24 level B1 students studying in the city center of Istanbul, selected through random sampling.	Writing Skills Assessment Scale and a personal information form.
8	80 students (40+40) who took face-to-face and Web-based distance written expression courses at Istanbul University Faculty of Literature, sampling method is not specified	A group of 40 foreign students at B1 independent level learning Turkish as a foreign language at Yıldız Technical University TÖMER were formed using Cluster Analysis to create homogeneous groups
9	40 students learning Turkish as a foreign language at Yıldız Technical University Turkish and Foreign Language Application and Research Center (TÖMER) at B1 independent level/Homogeneous Groups Formed by Cluster Analysis, Participant Selection Unspecified	"Personal Information Form", "B1 Independent Level Turkish Speaking Proficiency Exam", "B1 Independent Level Turkish Mutual Speaking Proficiency Exam", "B1 Independent Level Turkish Writing Proficiency Exam", "Graded Scoring Key for B1 Independent Speaking Proficiency of Foreign Language Learners", "Graded Scoring Key for B1 Independent Mutual Speaking Proficiency of Foreign Language Learners", "Graded Scoring Key for B1 Independent Writing Proficiency of Foreign Language Learners", "Speaking Self-Efficacy Scale", and "Writing Self-Efficacy Scale".
10	33 students/Randome Selection Method	Achievement test and Retention test
11	The study group consisted of 26 participants in total: 13 at B1 level and 7 at B2 level from Bartın University Language Education and Research Center (BÜDEM) during the spring semester of the 2019-2020 academic year, and 5 at B1 level and 1 at B2 level from Istanbul University Language Center. Sampling method is not specified	Personal Information Form" and the "Foreign Language Learning Anxiety Scale".
12	a group of B2 level students learning Turkish as a foreign language at Fatih University TÖMER in Istanbul during the period of 13.04.2015-05.06.2015 (8 weeks) was selected through random sampling	"Speaking Evaluation Scale" and a "Personal Information Form".

The studies included in the review gathered information from students studying Turkish as a language, at different universities. The researchers used methods to select the control groups, such as random sampling, convenient sampling, unbiased assignment and situations where participants were easily accessible. The number of participants in each study ranged from 10 to 80. To collect data different tools were utilized, including scales to measure speaking anxiety and speaking skills a tool for measuring word stress, achievement tests, retention tests, Web based tools like Poll 2.0 scales for assessing writing skills and attitudes using Likert type questions, evaluation scales for compositions personal information forms, proficiency exams for speaking in Turkish and writing in Turkish as well as self efficacy scales for speaking and writing. These diverse research methods and data collection tools have facilitated studies on the language skills of students learning Turkish as a language with an emphasis on speaking proficiency development along, with word stress management and writing abilities.

## CONCLUSION AND DISCUSSION

The incorporation of technology, into the teaching of Turkish has yielded outcomes for learning. For example utilizing the Voki application has resulted in improvements in students speaking abilities. Reduced their anxiety when speaking. This clearly demonstrates that Web 2.0 tools can effectively enhance language proficiency and boost students confidence. Similarly computer assisted stress accent training has proven to be successful in developing word stress skills. These favorable results underscore the potential of technology in focusing on areas such as pronunciation. Furthermore the impact of the Kahoot! application on learners is significant indicating that gamified applications can effectively motivate students and assist them in their learning journey. Likewise innovative approaches like "3 Dakikada Türkçe" have demonstrated outcomes compared to methods highlighting the effectiveness of Web based platforms in promoting language acquisition. The use of Poll Everywhere for writing classes has been well received as it enhances motivation and provides opportunities for written expression.

An innovative approach to language learning is integrating ChatGPT, an AI supported chatbot as a tool. Its versatility, across language domains including dialogue creation, clarification, translation, pronunciation practice and text comprehension offers support to students. The inclusion of platforms, like blogs in writing practice has

had an impact on students. It encourages them to be more independent and creative by allowing them to publish their work online and receive feedback, which helps improve their writing skills. Students had the opportunity to publish their work online and improve their writing skills by receiving feedback.

Remote education platforms have the potential to revolutionize language learning experiences and bring about changes in students attitudes. The user friendly nature and effectiveness of platforms such as "3 Dakikada Türkçe" emphasize the importance of resources that cater to beginner level language learners. Moreover podcasts have emerged as tools for enhancing speaking skills highlighting the benefits of audio based materials in skill development.

While there is evidence of the impact of technology integration on anxiety levels among students, it suggests that addressing anxiety is not limited to technology implementation. However, the positive impact of web 2.0-based audio and video communication applications such as Skype on the development of speaking skills re-emphasizes the potential of multimedia tools in supporting language development.

Overall, these findings reveal the importance of language teaching technologies and the benefits of integrating web-based applications and innovative tools. These interventions provide improvements in developing communication skills, inspiring learners, providing opportunities for practice and creating dynamic learning environments. The versatility and adaptability of technology helps in delivering customized and immersive language learning experiences. However, extensive research is needed to investigate the lasting impact of these interventions and their potential importance for groups of learners.

In conclusion, Web-based computer technologies provide information on the effectiveness of interventions and their potential to improve language learning outcomes. In particular, the use of Web 2.0 tools and applications shows that they have an impact on speaking skills, vocabulary development, writing skills and student motivation.

The use of tools such as Voki, computer-assisted highlighting training, Kahoot! 3 Dakikada Türkçe, Poll, ChatGPT, blogs, distance learning platforms and podcasts have shown promising results in facilitating language acquisition and improving language skills. These applications offer learners immersive and personalized learning experiences. The positive results emphasize the importance of using technology to create dynamic and effective language learning environments.

Technology integration has improved language proficiency. Also positively influenced students attitudes and perceptions towards language learning. Remote education platforms have played a role, in overcoming barriers and providing learning opportunities.

Dealing with anxiety related to language learning involves strategies that extend beyond the use of technology. However research has shown a connection, between technology and language instruction emphasizing its influence on language abilities, motivation and overall learning journeys. Put simply when teachers and professionals incorporate technology into the system it can have an impact on language teaching. By embracing internet based technologies students can unlock their potential, for learning languages. Attain proficiency and fluency in Turkish.

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