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Abstract

This study aims to examine Turkish language and literature and Turkish teacher candidates' tendencies towards digital speech. In this context, participants' digital speech tendencies were analyzed in terms of various variables. These variables include gender, the department they study at the university, whether they have previously participated in an online meeting or program as a speaker, social media use, whether they have taken a course on "communication, effective communication, human relations and communication, oral expression, speech training", and digital speech skills. Variables include having prior knowledge, preferring face-to-face communication, preferring speaking, and preferring online/distance communication. The research was conducted on a total of 296 teacher candidates (231 female, 65 males) studying at a university in eastern Turkey. The study was conducted in the survey model. According to the results of the research, teacher candidates' digital speech tendencies were determined in terms of variables such as department, having previously participated in an online meeting as a speaker, using social media applications, having taken undergraduate-level communication, effective communication, human relations and communication, oral expression, speaking training" courses. However, significant differences were found in terms of some variables such as gender, level of knowledge about digital speech, preference for face-to-face communication and speaking, and preference for online and distance communication. In addition, it was determined that 80% of the teacher candidates had a medium level of digital speech tendencies. These results provide an important perspective for better understanding and developing the digital speech tendencies of teacher candidates.

Introduction

Communication is the transfer of ideas, thoughts, or feelings from the sender to the receiver verbally or non-verbally. Communication is very important in almost every aspect of life, from the family environment to the business environment. Although people are educated in various fields, including economics, management, and other disciplines, they cannot acquire direct communication skills. In this respect, communication is a social process for us humans, from birth to death (Genç, 2017). Humans interact with their environment constantly because they are social beings. It is possible to say that communication is the element that enables people to change from biological beings to social beings (Tuna, 2012). Language serves as a tool for thinking, speaking, and social interaction in this situation. Since language is employed to act, it also functions as a tool of power and

control (Ercan & Daniş, 2019). People may speak, communicate, express their feelings and thoughts, or attempt to understand thanks to language, which is one of the most fundamental traits that set humans apart from other living things. Speech is a great tool for social engagement and communication in this situation since it enables people to express their emotions, ideas, and observations. Speech is produced by a few organs. Additionally, speaking is a behavior that develops with the aid of these organs and permits people to engage and communicate with others. Speech is the vocalization of feelings and thoughts that the mind puts into words. In other words, speech is the use of sounds to express words. The ability to understand and communicate is a function of a person's language ability (Temizyürek, 2007). The concept of "speech" covers a wide range of activities such as sound production, vocalization, expression, understanding, agreement, and communication. Success in business, education, and personal life is affected by this very important verbal communication activity. For good communication, it is very important to speak fluently and in a nice, effective voice. People who have been successful in the past and have the ability to persuade large audiences are good speakers. It is a fact that effective speaking affects personal and professional success (Kurudayıoğlu, 2003).

In the era of globalization, great changes are taking place all over the world. When people have a desire, a desire to achieve something, great transformations occur at this point. Their desires can only be met when people freely convey their thoughts and ideas to others. Therefore, if people want to achieve their goals, wishes, and objectives, they need to improve their communication skills. In today's world, a person needs to develop effective communication skills to be successful in his field of study. Therefore, speaking is the most important of the four language skills for effective communication in today's global society (Rao, 2019). Even at a time when writing had not yet been invented and language was primarily spoken, people were still able to communicate. Long before humans had anything to read, information was passed from generation to generation through oral communication. As a result, it seems that the development of writing is relatively new in human history. Speech has remained valuable to people throughout history as a vital means of communication (Hussain, 2017). Speech is the process by which a person uses language to interact with others and expresses his/her feelings and thoughts verbally. At this point, speaking refers to an aspect of communication that involves verbally sharing experiences (Başaran and Erdem, 2009).

One of the most basic features that define a person as a human being and contribute to the socialization process is undoubtedly the ability to speak. People shape this innate ability according to the language of their society and use it throughout their lives. Since speech is a social entity that includes many concepts, it brings people together and provides the opportunity for communication and social interaction (Doğan, 2009). Speaking skill includes the ability to receive and process information safely, as well as the processes of creating meaning and producing expressions (Ibodulloyeva, 2020). Speaking is an essential and essential prerequisite for teaching a language. Therefore, it is of indispensable importance to convey our feelings and thoughts to others and to participate in social activities. Linguists, academics, and researchers focus on the purpose of communication when defining speech. The purpose of speaking skills is undoubtedly to communicate in the target language (Barın, 2018). Communication is a two-way process in which the receiver and the transmitter can take part simultaneously (Genç, 2017).

As a result of the misperception that children possess this skill when they begin their educational careers, speaking

skills have been neglected in the learning and teaching process. Speaking abilities may, however, be taught and improved using the right methods and strategies, much like other language abilities (Potur and Yıldız, 2016). Speaking is the language ability that teachers emphasize to students the most. Problems with speaking abilities could lead to failure (İşcan and Karagöz, 2016). One of the key characteristics that sets humans apart from other living things is our ability to communicate through language. Undoubtedly, how well this skill is used is one of the most crucial factors in determining success. For those whose occupations frequently need communication, this is of higher relevance. One of these careers is teaching. To succeed in his profession and serve as a positive role model for his students, a teacher must speak the language fluently and elegantly (Katrancı, 2014). The communicative method requires teachers to place a strong emphasis on essential communication skills like speaking and listening as well as to take into account every scenario that could arise in their everyday interactions with pupils. People need to be able to express themselves effectively in conversation by being aware of their feelings. They must be careful to manage the learning process well. They can strengthen personal bonds with students and thereby facilitate learning (Özkan & Kınay, 2015). Speaking abilities are crucial for teacher candidates' academic careers, for building rapport with their students in the future, and for properly expressing their emotions and ideas (Aykaç & Çetinkaya, 2013). Speaking issues in teacher candidates can include voice tone, pronunciation, psychological barriers, hesitation, grammar, a lack of information, concentration issues, and physical ailments (Akkaya, 2012).

Turkish teachers should serve as role models for the proper and effective use of Turkish communication since they have a responsibility to produce pupils who can utilize voice and body language appropriately. Any teacher should, in general, have a reasonable amount of speaking anxiety, especially Turkish instructors and teacher aspirants (Özdemir, 2018). The development of speaking abilities, one of the fundamental language skills, is one of the neglected subjects in Turkish education. The results of disregarding this talent are evident at all educational levels, from elementary school to higher education (Doğan, 2009). During their undergraduate studies, teacher candidates studying in the fields of language education and teaching make use of language and language-related comprehension and expression skills. Speaking-expressing ability is qualitatively more significant among the two learning domains of expressing (speaking-writing) and comprehending (listening-reading) (Özkan & Kınay, 2015).

In this age, everyone is affected by the rapid advancement of technology. As a result, people follow technological developments and advancements (Yılmaz & Özden, 2022: 198). The information age has accelerated the transition from classical books to digital reading and from face-to-face communication to digital speech (Yurdakal, 2021). Today, there are more opportunities for communication thanks to the development of many digital technologies and the widespread use of digital transformation. In the digital age, people prefer pre-prepared manifestations of emotions and thoughts. Digital Speech therefore tends to emphasize a non-obvious and superficial level of consciousness (Sakallı & Bahadıroğlu, 2018). The facts that form the basis of social institutions determine the era. This makes it clear that in the information age, "information and means of obtaining information" are the basic resources, considering that information is currently the most important phenomenon. In addition to the information age, countless phenomena have been transformed. The four basic learning areas of Turkish teaching, listening, speaking, reading, and writing, have also changed over time. As speech progresses towards digital

speech (phone and internet-centered), reading has turned into digital or screen reading (Kırmızı & Yurdakal, 2021). Digital technologies change the social conditions of speech, giving rise to new social conflicts over the ownership and control of information capital (Balkin, 2017). Since language is a social phenomenon, social problems also affect language. Language; It changes as a result of factors such as religion, commerce, war, conflict, media, and technology. As language develops as an organism, it is influenced by many other languages. With the influence of technology, especially the internet, unlike Generation X, Generation Y, and Z have become more prone to English and the use of Turkish has decreased. When we examine the relationship between language and thought, it becomes clear that language produces thought. However, social media can weaken the connection between language and thought as it encourages the use of limited words and abbreviations in communication. The basis of culture is language, which is a treasure that must be protected. The decline of language is a sign that culture is also declining. Therefore, it is the responsibility of educational institutions and mass media to use the language correctly, especially Turkish. The rapid development of the internet and social media is accelerating language loss. For this reason, language should be protected and developed through social action (Karahisar, 2013). It is seen that the number of studies in the literature on language education and teaching, both in Turkey and around the world, is deficient. It is seen that the number of studies in the literature on digital speech is generally limited. Some of the studies on digital speech in the literature are; Campanella & Robinson(1971), Schafer (1972), Jayant (1976), Gold (1977), Crochiere & Flanagan (1983), Venkatagiri & Ramabadran (1995), Awad (1997), Rabiner & Schafer (2007), It seems to be realized in Rowbottom (2012), Nematollahi & Al-Haddad (2013), Kadhim & Ahmed (2023). From these studies; Campanella and Robinson (1971) study compare different conversion techniques used for digital speech processing. This study appears to be related to the mathematical foundations used in data analysis and processing. Schafer's (1972) study provides an overview of digital speech processing techniques. It can be said that the discipline is evaluated from a broad perspective by addressing the basic concepts, methodologies, and applications of the field. Jayant's (1976) study examined mean and median-based smoothing techniques to deal with transmission errors. The fundamental techniques for enhancing the quality of digital speech are assessed in this study. In his research, Gold (1977) offers a thorough analysis of digital voice networks with a focus on their architecture, structural characteristics, and transmission methods. The paper by Crochiere & Flanagan (1983) discusses the most recent developments in the field of digital speech. It tries to assess how sound processing techniques have evolved, where they are now, and where they are headed. Digital voice synthesis techniques are described in-depth in the guide article by Venkatagiri and Ramabadran (1995), which also provides information on their potential applications. The study by Awad (1997) looks at how digital speech-processing techniques are used in the field of stuttering rehabilitation. This presents crucial viewpoints on the incorporation of digital voice in therapeutic procedures. The study of Rabiner and Schafer (2007), which discusses the fundamental ideas and procedures in this area, serves as a representation of the discipline of digital voice processing. The essential subjects of processing, analysis, synthesis, and compression of digital audio signals are given considerable attention. A thorough overview of the use of digital voice watermarking is given in the paper by Nematollahi and Al-Haddad (2013). By tagging digital audio data with secret information, the integrity and ownership of the original content are safeguarded. Kadhim and Ahmed's (2023) study examined the applications of chaotic cryptosystems to digital speech communication. It has been stated that this provides an important perspective on how chaotic systems can be used in the field of digital speech security and privacy.

When the above-mentioned studies are analyzed in general, it can be seen that research in the field of digital speech processing is prioritized. In the studies conducted in this field, it can be seen that digital audio processing, analysis, synthesis, compression, transmission, and other processes are discussed. In addition, issues such as digital speech processing techniques, improvement of sound quality, development of methods for correcting transmission errors, and the security and privacy of digital audio are addressed. No study has been identified that deals with digital speech within the scope of language education and training.

This study aims to determine the tendencies of Turkish and Turkish language and literature teacher candidates studying in the field of language education and teaching towards the concept of "digital speech" in the information or technology age we are in. With the increasing use of technology and digital platforms, a new type of communication known as "digital speech" has developed. In this context, it is very important to understand and evaluate pre-service teachers' perspectives on contemporary Digital Speech tendencies. The "lack of research on digital speech" for pre-service teachers is one of the main factors that make this study important. To overcome the lack of knowledge in this field and to provide new perspectives, it is of great importance to identify and examine pre-service teachers' dispositions toward digital speech. The findings of the study may provide insight into strategies, methods, and techniques for the effective application of technology in language teaching and learning. Making language learning strategies more efficient and interesting can be possible by understanding pre-service teachers' positive and negative tendencies toward digital speech. Therefore, this study is intended to serve as a source for future research and practice in the field of language teaching and learning.

Research Problem

The basic problem statement of this research is as follows: "What is the level of Turkish language and literature and Turkish teacher candidates' tendencies towards digital speech? Based on this basic problem statement, sub-problems were created as follows:

- Do teacher candidates' tendencies towards digital speech show a significant difference in terms of gender?
- Do teacher candidates' tendencies towards digital speech differ significantly in terms of their major branches of science?
- Do teacher candidates' tendencies towards digital speech differ significantly in terms of participating in an online meeting or program?
- Do teacher candidates' tendencies towards digital speech show a significant difference in terms of social media use
- Do teacher candidates' tendencies towards digital speech, information technologies, human relations, and communication show a significant difference in terms of taking or not taking the course?
- Do teacher candidates' tendencies towards digital speech show a significant difference in terms of taking "communication, effective communication, human relations and communication, oral expression, speaking education" courses at the undergraduate level
- Do teacher candidates' tendencies towards digital speech differ significantly in terms of their level of

prior knowledge about digital speech?

- Do teacher candidates' tendencies towards digital speech show a significant difference in terms of preferring face-to-face communication and speaking?
- Do teacher candidates' tendencies towards digital speech show a significant difference in terms of their preference for online/distance communication?

Purpose of the Research

This study aimed to examine digital speech trends between Turkish teacher candidates and Turkish language and literature. In this context, gender, department, social media use, undergraduate communication, effective communication, human relations and communication, oral expression, speech training courses, prior knowledge about digital speech, face-to-face interactions, participation as a speaker in online meetings or programs, and others are relevant factors. Numerous variables were examined, including preferences for conversational or oral communication and preferences for online distance communication. In this context, it is aimed to obtain more information about the relationships between various sociodemographic factors and trends in Digital Speech and possible training needs in this field. This study aims to determine the digital speech habits of Turkish and Turkish language and literature teacher candidates studying in the field of language education and teaching. The emergence of digital speech with the development of communication technologies is vital for modern communication. Knowing how pre-service teachers behave in this subject area will allow us to better understand how we can integrate technology into language teaching and learning. Therefore, the findings of this study may help implement language learning strategies more successfully and shed light on further research. Therefore, examining teacher candidates' tendencies towards digital speech can help make the use of technology in language education and teaching more efficient.

Method

Research Model

A quantitative research method was used in this research, which examined the attitudes of Turkish language and literature and Turkish teacher candidates towards digital speech. In this research, the general survey model, one of the quantitative research designs, was used. The survey model is the whole of the processes that describe a past or present situation as it exists and are applied for learning to occur and the development of desired behaviors in the individual. In the general survey model, in a universe consisting of a large number of elements, scanning is carried out on the entire universe or a group of samples or samples taken from it to reach a general judgment about the universe (Karasar, 2009). In this research, Turkish language and literature and Turkish teacher candidates; gender, department of study at university, whether they have participated in an online meeting or program as a speaker before, social media use, taking "communication, effective communication, human relations, and communication", "oral expression, speaking training" courses at the undergraduate level. Their tendencies regarding digital speech were examined in terms of whether there was a significant difference in their tendencies towards digital speech in terms of some variables such as their status, whether they had prior knowledge about digital speech, whether they preferred face-to-face communication/talking, and whether they preferred

online/remote communication.

Study Group

The study group of this research consisted of 231 females and 65 males who were Turkish language and literature and Turkish language teacher candidates studying at the faculty of education of a university located in the east of Turkey. Information about the descriptive characteristics of the teacher candidates included in the research is given in Table 1.

Table 1. Descriptive Characteristics of Teacher Candidates (N=296)

Variable	Options	n	%
Gender	Female	231	78.0
	Male	65	22.0
Department/major of study at university	Department of Turkish Language and Literature Education	122	41.2
	Department of Turkish Education	174	58.8
Participating in a previous online meeting or program as a speaker	Yes	112	37.8
	No	184	62.2
Using social media apps	Yes	279	94.3
	No	17	5.7
Taking Communication/Effective Communication/Human Relations and Communication courses at the undergraduate level	Yes	149	50.3
	No	147	49.7
Having prior knowledge of digital speech	Yes	55	18.6
	Partially	185	62.5
	I heard it for the first time	56	18.9
Taking an oral expression/speaking training course during undergraduate education	Yes	139	47.0
	No	157	53.0
Preferring face-to-face communication/talking	Yes	267	90.2
	No	29	9.8
Preferring online/remote communication	Yes	69	23.3
	No	227	76.7

Females make up 78% of teacher candidates, while men make up 22%. The Department of Turkish Language and Literature Education has a student body of 41.2%, whereas the Department of Turkish Education has a student body of 58.8%. 37.8% of respondents had spoken in an online meeting or program before, compared to 62.2% who hadn't. Social networking applications are used by 94.3%. At the undergraduate level, 50.3% of students have taken a communication, effective communication, or human relations and communication course. 18.6% are already familiar with digital speech. 62.5% of people only have a basic awareness of digital speech. 18.9% of people are ignorant of digital speech. 53% of undergraduate students have not taken an "Oral Expression / Speech

Training" course, compared to 47% who have. 23.3% prefer online or distant communication, whereas 90.2% prefer face-to-face communication or speech.

Data Collection

Google Docs was used to develop a form that was used to collect the study's data. The form's introduction section states the study's goal and provides the researcher's email contact for anyone who might be interested in learning more about the study's results. Additionally stated in the instruction section is the fact that participation in the study is optional, there is no requirement to do so, and participants are free to discontinue the study at any time. The participant's personal information is requested in the second section. The scale elements are included in the last section. Voluntary participants were informed of the form's web address and extension once it had been given its final form. In this study, 296 aspiring Turkish language and literature teachers enrolled in an education faculty at a university in the east of Turkey were given the "Digital Speech Tendency Scale" created by Yurdakal (2021). The scale has 16 items and 3 subscales in a 5-point Likert-type style. Each subscale of the scale was given a name as a consequence of the investigations, and reliability analyses showed that the scale was a trustworthy measurement device. The scale's factorial validity was established, and the value of Cronbach's Alpha was found to be 0.878. It was also determined that the scale effectively assesses the phenomena known as "digital speech tendency" and has a homogeneous structure. A strong basis is provided by the data-collecting phase, sample selection, analysis, and validity-reliability investigations of this study (Yurdakal, 2021).

Data Analysis

The data were analyzed using SPSS 20.0. The SPSS for Windows 22.00 statistical software package was used to perform five different statistical analyses, including Frequency, Percentage, Independent Samples t-test, One-Way Analysis of Variance (ANOVA), and Mann-Whitney U test.

Research Ethics

The 'Higher Education Institutions Scientific Research and Publication Ethics Directive' (YÖK, 2023) was strictly followed in this study. The actions listed in the directive's section titled "Actions Contrary to Scientific Research and Publication Ethics" were taken into consideration, and no behavior or action was conducted that was against scientific research and publication ethics. Extreme attention was taken to adhere to scientific and ethical criteria when authoring this paper. The judgment of the Atatürk University Social and Human Sciences Ethics Committee, Education Sciences Unit Ethics Committee, dated 25.05.2023 and numbered 06/25, granted ethical permission for the study.

Results

The arithmetic mean and standard deviation of the scores obtained by prospective teachers from the Digital Speech Inclination Scale are provided in Table 2.

Table 2. Arithmetic Mean and Standard Deviation of Scores Obtained by Prospective Teachers from the Digital Speech Inclination Scale

Dimension	\bar{X}	S.d
Negative Attitude Towards Digital Speech	18.89	5.54
Positive Attitude Towards Digital Speech	12.37	4.24
Characteristics of Digital Speech	13.01	3.39
Total Score of Digital Speech Tendency	44.27	7.88

The prospective teachers' arithmetic mean for the dimension of negative attitude towards Digital Speech was found to be 18.89±5.54, for a positive attitude towards Digital Speech it was 12.37±4.24, for characteristics of digital speech it was 13.01±3.39, and for the total score of the scale, it was 44.27±7.88. Table 3 displays the digital speech inclinations of teacher candidates based on their overall scores on the digital speech tendency scale.

Table 3. Digital Speech Tendency Status of Prospective Teachers Based on Total Scores Obtained from the Digital Speech Tendency Scale

Tendency Level	n	%
Low Tendency (0-25 points)	5	1.7
Moderate Tendency (26-50 points)	236	79.7
High Tendency (51-80 points)	55	18.6

It was determined that 1.7% of prospective teachers had a low tendency toward digital speech, 79.7% had a moderate tendency, and 18.6% had a high tendency based on the total scores obtained from the Digital Speech Tendency Scale. These findings indicate that 80% of prospective teachers have a moderate tendency toward digital speech. The comparison of Digital Speech Inclination Scale scores of teacher candidates by their genders is presented in Table 4.

Table 4. Comparison of Digital Speech Tendency Scale Scores by Gender of Prospective Teachers

Dimension	Gender	N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Female	231	19.45	5.58	3.342	.001
	Male	65	16.89	4.98		
Positive Attitude Towards Digital Speech	Female	231	12.25	4.28	.956	.340
	Male	65	12.82	4.10		
Characteristics of Digital Speech	Female	231	12.81	3.30	1.926	.055
	Male	65	13.72	3.638		
Total Score of Digital Speech Tendency	Female	231	44.51	8.07	.973	.331
	Male	65	43.43	7.13		

The t-value for the Negative Attitude towards the Digital Speech dimension of the Digital Speech Inclination Scale was found to be significant at p<0.05 level, indicating that there is a significant difference based on gender.

However, the t-values for the Positive Attitude towards the Digital Speech dimension, the Characteristics of the Digital Speech dimension, and the Total Score of the Digital Speech Inclination Scale were found to be non-significant at $p>0.05$ level.

Upon examining the table, it is observed that female prospective teachers have higher mean scores for the Negative Attitude towards the Digital Speech dimension compared to male prospective teachers. As a result, it can be said that female prospective teachers tend to have a more negative approach towards Digital Speech compared to male prospective teachers. The comparison of the Digital Speech Inclination Scale scores of prospective teachers based on the department/major they are studying at the university is provided in Table 5.

Table 5. Comparison of Digital Speech Inclination Scale Scores According to the Department/Major of Prospective Teachers at the University

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Turkish language and literature	122	18.50	5.22	1.010	.314
	Turkish	174	19.16	5.76		
Positive Attitude towards Digital Speech	Turkish language and literature	122	12.44	4.33	.241	.810
	Turkish	174	12.32	4.18		
Characteristics of Digital Speech	Turkish Language and Literature	122	13.07	3.40	.270	.788
	Turkish	174	12.97	3.40		
Total Score of Digital Speech Inclination Scale	Turkish language and literature	122	44.02	7.84	.464	.643
	Turkish	174	44.45	7.92		

The t-test results for the Digital Speech Inclination Scale scores of teacher candidates, based on the department/major field they are studying in at the university, in terms of negative attitude towards digital speech, positive attitude towards digital speech, characteristics of digital speech, and the total score of the Digital Speech Inclination Scale, revealed that all t values were found to be insignificant with $p>0.05$ level of significance. It can be concluded that there is no significant difference among teacher candidates in terms of the Digital Speech Inclination Scale scores based on the department/major field they are studying at the university.

The comparison of Digital Speech Inclination Scale scores of teacher candidates, based on their previous experience of participating as a speaker in an online meeting or program at the university, is presented in Table 6. Based on the t-test results, for teacher candidates, there were no significant differences ($p>0.05$) in terms of Negative Attitude Towards Digital Speech, Positive Attitude Towards Digital Speech, Characteristics of Digital Speech, and Total Score of the Digital Speech Inclination Scale based on their previous experience of participating as a speaker in an online meeting or program. It can be concluded that there is no significant difference among teacher candidates in these dimensions.

Table 6. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Previous Participation as a Speaker in an Online Meeting or Program

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Turkish language and literature	112	18.43	5.144	-1.114	.266
	Turkish	184	19.17	5.770		
Positive Attitude Towards Digital Speech	Turkish language and literature	112	12.05	4.337	-1.008	.314
	Turkish	184	12.57	4.173		
Characteristics of Digital Speech	Turkish language and literature	112	12.94	3.699	-.277	.782
	Turkish	184	13.05	3.205		
Total Score of Digital Speech Inclination Scale	Turkish language and literature	112	43.42	8.057	-1.452	.147
	Turkish	184	44.79	7.740		

The comparison of Digital Speech Inclination Scale scores of teacher candidates, based on their usage of social media applications, is presented in Table 7.

Table 7. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Their Use of Social Media Applications

Dimension		N	\bar{X}	S.d	U	p
Negative Attitude Towards Digital Speech	Turkish language and literature	279	18.93	5.572	2108.000	.441
	Turkish	17	18.24	5.166		
Positive Attitude Towards Digital Speech	Turkish language and literature	279	12.42	4.185	2034.500	.324
	Turkish	17	11.59	5.075		
Characteristics of Digital Speech	Turkish language and literature	279	13.06	3.410	2027.000	.312
	Turkish	17	12.12	3.080		
Total Score of Digital Speech Inclination Scale	Turkish language and literature	279	44.41	7.818	2074.500	.386
	Turkish	17	41.94	8.685		

Based on the Mann-Whitney U test results, for teacher candidates, there were no significant differences ($p > 0.05$) in terms of Negative Attitude Towards Digital Speech, Positive Attitude Towards Digital Speech, Characteristics of Digital Speech, and Total Score of the Digital Speech Inclination Scale based on their use of social media applications. It can be concluded that there is no significant difference among teacher candidates in these dimensions based on their use of social media applications. The comparison of Digital Speech Inclination Scale scores of teacher candidates, based on whether they have taken a Communication/Effective Communication/Interpersonal Relations and Communication course at the undergraduate level, is presented in Table 8.

Table 8. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Whether They Have Taken a Communication/Effective Communication/Interpersonal Relations and Communication Course at the Undergraduate Level

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Turkish language and literature	149	18.77	5.417	-.364	.716
	Turkish	147	19.01	5.686		
Positive Attitude Towards Digital Speech	Turkish language and literature	149	12.37	4.310	-.010	.992
	Turkish	147	12.37	4.175		
Characteristics of Digital Speech	Turkish language and literature	149	12.93	3.318	-.394	.694
	Turkish	147	13.09	3.480		
Total Score of Digital Speech Inclination Scale	Turkish language and literature	149	44.07	7.747	-.431	.666
	Turkish	147	44.47	8.026		

Prospective teachers' enrollment in communication/effective communication/human relations and communication courses at the undergraduate level did not yield statistically significant differences in terms of Negative Attitude toward Digital Speech, Positive Attitude towards Digital Speech, Characteristics of Digital Speech, and the Total Score of Digital Speech Inclination Scale. It can be concluded that there is no significant difference in terms of these dimensions based on whether prospective teachers took Communication/Effective Communication/Human Relations and Communication courses at the undergraduate level.

The comparison of Digital Speech Inclination Scale scores based on prospective teachers' previous knowledge about digital speech is presented in Table 9.

Table 9. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Their Previous Knowledge about Digital Speech

Dimension	Knowledge Level	N	\bar{X}	S.d	F	p
Negative Attitude Towards Digital Speech	Yes	55	17.53	5.912	4.493	.012
	Partially	185	18.77	5.325		
	First Time	56	20.61	5.549		
Positive Attitude Towards Digital Speech	Yes	55	12.76	4.216	.299	.742
	Partially	185	12.26	4.267		
	First Time	56	12.36	4.206		
Characteristics of Digital Speech	Yes	55	13.45	3.594	1.486	.228
	Partially	185	13.07	3.481		
	First Time	56	12.38	2.819		
Total Score of Digital Speech Inclination Scale	Yes	55	43.75	9.344	.678	.508
	Partially	185	44.10	7.755		
	First Time	56	45.34	6.650		

Based on whether prospective teachers had prior knowledge about Digital Speech, a One-Way Analysis of Variance (ANOVA) was conducted solely for the scores on the Digital Speech Inclination Scale. The F-value for the dimension of Negative Attitude towards Digital Speech was found to be significant at $p < 0.05$, whereas the F-values for Positive Attitude towards Digital Speech, Characteristics of Digital Speech, and the Total Score of Digital Speech Inclination Scale were found to be non-significant at $p > 0.05$. To understand which level of prior knowledge about Digital Speech the differences stemmed from, a Post Hoc test was administered. The results of the Post Hoc test indicated that those who were exposed to information about Digital Speech for the first time had higher average scores in the dimension of Negative Attitude towards Digital Speech compared to those who had heard about it before or had partial knowledge, and these differences were found to be statistically significant at $p < 0.05$.

The comparison of Digital Speech Inclination Scale scores based on whether prospective teachers took courses in Oral Expression/Speech during their undergraduate education is presented in Table 10.

Table 10. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Whether They Have Taken Oral Expression/Speech Training Courses during Their Undergraduate Education

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Turkish language and literature	55	17.53	5.912	-1.485	.139
	Turkish	185	18.77	5.325		
Positive Attitude Towards Digital Speech	Turkish language and literature	55	12.76	4.216	.771	.441
	Turkish	185	12.26	4.267		
Characteristics of Digital Speech	Turkish language and literature	55	13.45	3.594	.713	.47
	Turkish	185	13.07	3.481		
Total Score of Digital Speech Inclination Scale	Turkish language and literature	55	43.75	9.344	-.286	.775
	Turkish	185	44.10	7.755		

Based on whether teacher candidates have taken an Oral Expression/Speech Training course during their undergraduate education, there were no significant differences ($p > 0.05$) found in terms of Negative Attitude Towards Digital Speech, Positive Attitude Towards Digital Speech, Characteristics of Digital Speech, and Total Score of the Digital Speech Inclination Scale. It can be concluded that there is no significant difference among teacher candidates in these dimensions based on whether they have taken such a course during their undergraduate education.

The comparison of Digital Speech Inclination Scale scores of teacher candidates, based on their preference for face-to-face communication/speech, is presented in Table 11.

Table 11. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Their Preference for Face-to-Face Communication/Speech

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Yes	267	18.89	5.592	.027	.978
	No	29	18.86	5.174		
Positive Attitude Towards Digital Speech	Yes	267	12.04	4.044	-4.134	.000
	No	29	15.38	4.829		
Characteristics of Digital Speech	Yes	267	12.85	3.359	-2.481	.014
	No	29	14.48	3.419		
Total Score of Digital Speech Inclination Scale	Yes	267	43.79	7.522	-3.258	.001
	No	29	48.72	9.654		

Based on the preference for face-to-face communication/speech, significant differences were found in the Positive Attitude Towards Digital Speech dimension, Characteristics of Digital Speech dimension, and Total Score of the Digital Speech Inclination Scale with $p < 0.05$ level of significance. When examining the table, it can be observed that teacher candidates who do not prefer face-to-face communication/speech have higher mean scores in the Positive Attitude Towards Digital Speech dimension, Characteristics of Digital Speech dimension, and Total Score of the Digital Speech Inclination Scale compared to those who prefer face-to-face communication/speech. As a result, it can be stated that teacher candidates who prefer face-to-face communication/speech have better 21st-century skills compared to those who do not prefer face-to-face communication/speech.

The comparison of Digital Speech Inclination Scale scores of teacher candidates based on their preference for online/remote communication is provided in Table 12.

Table 12. Comparison of Digital Speech Inclination Scale Scores of Teacher Candidates Based on Their Preference for Online/Remote Communication

Dimension		N	\bar{X}	S.d	t	p
Negative Attitude Towards Digital Speech	Yes	69	16.58	5.301	-4.052	.000
	No	227	19.59	5.435		
Positive Attitude Towards Digital Speech	Yes	69	14.32	3.779	4.500	.000
	No	227	11.78	4.197		
Characteristics of Digital Speech	Yes	69	13.99	3.462	2.756	.006
	No	227	12.71	3.325		
Total Score of Digital Speech Inclination Scale	Yes	69	44.88	8.116	.739	.461
	No	227	44.08	7.810		

Based on the preference for online/remote communication, significant differences were found in the Negative Attitude Towards Digital Speech, Positive Attitude Towards Digital Speech, and Characteristics of Digital Speech dimensions of the Digital Speech Inclination Scale with $p < 0.05$ level of significance. When examining the table,

it can be observed that teacher candidates who do not prefer online/remote communication have higher mean scores in negative attitudes towards digital speech compared to those who prefer online/remote communication. Additionally, among candidates who prefer online/remote communication, the positive attitude towards digital speech and characteristics of digital speech dimensions have higher mean scores compared to those who do not prefer online/remote communication. As a result, it can be stated that teacher candidates who prefer online/remote communication have better negative attitudes towards digital speech, positive attitudes towards digital speech, and characteristics of digital speech compared to those who do not prefer online/remote communication.

Discussion and Conclusion

This study was conducted on prospective Turkish language and literature and Turkish language teachers enrolled in the education faculty of a university located in the eastern part of Turkey. Based on participant demographics, there were a total of 296 teacher candidates, consisting of 231 females (78.0%) and 65 males (22.0%). The percentage of those studying in the Department of Turkish Language and Literature Education was 41.2%, while the percentage of those studying in the Department of Turkish Education was determined to be 58.8%. The rate of those who had previously participated as speakers in an online meeting or program was 37.8%, while the rate of those who had not experienced this was 62.2%. The percentage of those using social media applications was 94.3%, while the non-users accounted for 5.7%.

When examining the communication education background of the participants, the percentage of those who took a course on "communication/effective communication/human relations and communication" at the undergraduate level was 50.3%, while the percentage of those who did not take this course was 49.7%. The percentage of those knowledgeable about digital speech was 18.6%, those partially knowledgeable were 62.5%, and those not knowledgeable about this topic were 18.9%. The percentage of those who took a course on "oral expression/speech training" during their undergraduate education was 47%, while the percentage of those who did not take this course was 53%. The percentage of those preferring face-to-face communication was 90.2%, and the percentage of those preferring online/remote communication was 23.3%.

In this study, the propensity for digital speech among teacher applicants was evaluated using the Digital Speech Inclination Scale. With mean scores of 18.89 ± 5.54 , 12.37 ± 4.24 , and 13.01 ± 3.39 , respectively, for negative attitude against digital speech, positive attitude toward digital speech, and characteristics of digital speech, three primary aspects were used to assess the participants' propensity for digital speech. These results provide significant new information regarding the digital speech skills of teacher applicants. The survey took a close look at how frequently people used digital speech. The findings show that 1.7% of people have a low level, 79.7% have a moderate level, and 18.6% have a high degree of inclination for digital speech. This shows that the majority of candidates for teaching positions have a modest level of affinity for digital speech.

The study examined how people's inclination for digital speech varied by gender. The findings revealed that female teacher candidates had statistically significantly higher mean ratings for negative sentiments regarding digital speech compared to male teacher candidates. This finding offers solid proof that people's propensities for

digital speech can vary depending on gender. Females frequently have less access to digital devices than men, according to a study of the research. Economic inequality and its link to gender are acknowledged to play a key role in this predicament. According to Atlı Şengül (2023), a review of the literature reveals that, based on gender, females are less likely than men to have access to digital technologies. It is clear from this situation that economic inequality and its connection to gender are real. To expand female's access to modern communication technologies and ensure gender equality, it has been said that it is crucial to address the problems of economic inequality and gender discrimination. According to Kaya (2022), because societal roles restrict female's access to and use of economic and cultural resources, they are at a disadvantage when it comes to accessing and using digital technology. During the epidemic period, it has been observed that gender-based inequities have widened. Females have been shown to struggle with using online resources and connecting to the internet.

There was no statistically significant variation in digital speech preferences amongst teacher candidates enrolled in the main disciplines of study. These findings suggest that interests in digital speech are not influenced by the topic of study. Between individuals who had previously spoken in an online conference or program and those who had not, there was no statistically significant difference in digital speech preference. This implies that the individuals' prior online experiences did not significantly influence their propensity for digital speech.

Based on the use of social media, there was no statistically significant difference in digital speech preferences. This finding suggests that social media use is not thought to be a major factor in predicting teacher candidates' propensities for digital speech. Social networking websites, according to Karagülle and Çaycı (2004), are becoming an essential component of our daily life. With the growth of technology, sociability spaces have evolved, eliminating the need for face-to-face encounters and increasing virtual communication. These platforms make it feasible for people to connect virtually because they provide them the freedom to interact without being constrained by time or place. Social networking websites, according to Özaslan and Meydan Uygur (2014), have a significant impact on our lives. Face-to-face communication is avoided as a result of the advent of technology and the shifting socialization environments.

Social networks are accessible to users whenever and wherever they choose. People have the chance to connect and converse online thanks to these networks. Çalışır (2005) asserts that with the extensive usage of the internet nowadays, social networks and social media platforms have turned into essential locations for individuals to share information. Interpersonal communication has steadily moved away from face-to-face interactions and toward online platforms like social media during this phase. As a result, social media has replaced face-to-face conversation as the primary means of communication.

There was no statistically significant difference in digital speech tendency between undergraduate students who completed a "communication" course and those who did not. This finding suggests that communication courses only have a minor impact on predicting propensities for digital speech. A course on "oral expression/speech training" had no statistically significant impact on participants' propensity for digital speech, and the same was true for those who did not. This finding suggests that oral communication training may not significantly influence tendencies toward digital speech. Between individuals who prefer face-to-face communication and those who do

not, a statistically significant difference in digital speech inclination was found. Statistics show that those who dislike digital speech are more likely to do so. This finding indicates that people's communication choices may have an impact on their propensity for online conversations.

The most effective form of communication is face-to-face since it necessitates eye contact and being in the same location. In this type of communication, both verbal and non-verbal cues, such as body language, are acceptable. The Covid-19 epidemic and developments in communication technology have increased the appeal of the online way of life. In spheres including business, education, and family connections, computer-mediated communication has become more significant. The efficiency and sufficiency of communication have been questioned, especially because educational activities are now conducted online. Face-to-face communication is the most effective kind of communication, as demonstrated by this (Çelik, 2023). From a sociological standpoint, it is possible to assert that direct contact has a more profound effect on people's sincerity Dağıtmaç (2015).

There was a statistically significant difference in digital speech inclination between those who prefer online/remote communication and those who do not. The inclination towards digital speech is statistically higher among those who prefer online communication. This result indicates that communication methods can influence digital speech inclinations. Especially in recent times, the understanding of online education in the learning-teaching process is said to have influenced teacher candidates in this regard. Indeed, according to the research conducted by Erden (2021), 60% of the participants stated that they avoid face-to-face communication due to the effect of the COVID-19 pandemic, while more than 40% stated that they do not avoid it. Based on these data, it can be generally stated that preferences for face-to-face communication among individuals have changed, and phone and internet applications are preferred. Mobile devices are used at a rate of 60%, and it is expressed that the pandemic process has influenced these preferences.

In conclusion, in this study, the digital speech inclinations of teacher candidates were examined concerning their arithmetic mean and standard deviation of scores obtained from the Digital Speech Inclination Scale, their genders, the main departments in which they studied at the university, their previous participation as speakers in an online meeting or program, their status of using social media applications, whether they took a course on "communication/effective communication/human relations and communication" at the undergraduate level, their status of having previous knowledge about digital speech, whether they took a course on "oral expression/speech training" during their undergraduate education, their status of having previous knowledge about digital speech, their preference for face-to-face communication, and their preference for online/remote communication. The results obtained from the study indicate that the digital speech attitudes of teacher candidates can be associated with various factors. Significant differences in digital speech inclination were determined between genders, between those who prefer face-to-face communication and those who do not, and between those who prefer online/remote communication and those who do not.

Recommendations

Based on the results obtained from the research, the following recommendations can be made:

- In the rapidly changing digital world, teacher candidates should closely follow digital speech trends. This understanding holds critical importance in establishing more effective digital speech with students. Keeping track of updates on digital platforms and exploring new communication tools can enable teacher candidates to keep their digital speech skills up-to-date.
- Teacher candidates should possess the ability to effectively use the technological tools necessary for digital speech. This skill is important for creating interactive course content, managing virtual classrooms, and encouraging student participation. Educational programs can be designed to provide opportunities for teacher candidates to develop these skills.
- Studies evaluating the relationship between digital speech inclination and students' academic achievements can be conducted. These studies can help us gain a more detailed understanding of the impact of digital speech in education.
- Similar to this research focusing on the digital speech inclinations of Turkish language and literature and Turkish teacher candidates, studies can be conducted among teacher candidates from different main branches and with larger sample sizes. These studies can help us understand how the field of study influences digital speech inclinations in the context of the chosen discipline.
- Research exploring the relationship between the digital speech inclination of teacher candidates and the use of educational technologies can also be conducted. Through these studies, important insights can be obtained regarding how the use of technology in education affects digital speech skills.

References

- Akkaya, A. (2012). Öğretmen adaylarının konuşma sorunlarına ilişkin görüşleri/The opinions of teacher candidates about speech problems. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9(20), 405-420.
- Atlı Şengül, N. (2023). Dijital kültür ve siberfeminizme dijital bölünme üzerinden bir eleştiri[A critique of digital culture and cyberfeminism through digital divide]. *Egemia Ege Üniversitesi İletişim Fakültesi Medya ve İletişim Araştırmaları Hakemli E-Dergisi*, (12), 25-42.
- Awad, S. S. (1997, May). *The application of digital speech processing to stuttering therapy*. In *IEEE Instrumentation and Measurement Technology Conference Sensing, Processing, Networking*. IMTC Proceedings (Vol. 2, pp. 1361-1367). IEEE.
- Aykaç, M., & Çetinkaya, G. (2013). Yaratıcı drama etkinliklerinin Türkçe öğretmen adaylarının konuşma becerilerine etkisi[The effect of creative drama activities on preservice Turkish language teachers' speaking skills]. *Electronic Turkish Studies*, 8(9), 671-682.
- Balkin, J. M. (2017). Digital speech and democratic culture: A theory of freedom of expression for the information society. In *Law and society approaches to cyberspace* (pp. 325-382). Routledge.
- Barın, M. (2018). Konuşma becerisi: Konuşma ve yazı dili [Speaking skill: Spoken and written language]. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi- Atatürk University Journal of Social Sciences*, 22(Özel Sayı 2), 1903-1913.
- Başaran, M., & Erdem, İ. (2009). Öğretmen adaylarının güzel konuşma becerisi ile ilgili görüşleri üzerine bir araştırma[A research about views of teacher candidates on rhetorical speaking skill]. *Kastamonu Eğitim*

- Dergisi- Kastamonu Education Journal*, 17(3), 743-754.
- Campanella, S., & Robinson, G. (1971). A comparison of orthogonal transformations for digital speech processing. *IEEE Transactions on Communication Technology*, 19(6), 1045-1050.
- Crochiere, R., & Flanagan, J. (1983). Current perspectives in digital speech. *IEEE Communications Magazine*, 21(1), 32-40.
- Çalışır, G. (2015). Kişilerarası iletişimde kullanılan bir araç olarak sosyal medya: Gümüşhane Üniversitesi İletişim Fakültesi öğrencilerine yönelik bir araştırma [Social media as a means used in interpersonal communication: A research oriented onto the students of Gümüşhane University faculty of communication]. *Humanities Sciences*, 10(3), 115-144.
- Çelik, Z. E. A. (2023). Mesleklerin ve değerlerin eğitim ve öğretiminde yüz yüze iletişimin önemi ahilik teşkilatında usta çırak iletişimi modeli [The importance of face-to-face communication in the education and teaching of professions and values: Masterapprentice communication model in the Ahilik organization]. *Erciyes İletişim Dergisi- Journal of Erciyes Communication*, 10(2), 1001-1017.
- Doğan, Y. (2009). Konuşma becerisinin geliştirilmesine yönelik etkinlik önerileri [Suggested activities to improve speaking skill]. *Türk eğitim bilimleri dergisi- The Journal of Turkish Educational Sciences (JTES)*, 7(1), 185-204.
- Ercan, G. S., & Danış, P. (2019). Söylem, söylem çözümlemesi ve eleştirel söylem çözümlemesi: Tanımları ve kapsamaları [Discourse, discourse analysis and critical discourse analysis: Their definitions and scope]. *Dokuz Eylül Üniversitesi Edebiyat Fakültesi Dergisi- Dokuz Eylül University Journal of Humanities*, 6(2), 527-552.
- Erden, N.K. (2021). *Pandemi sürecinin toplumsal yaşama etkileri: yüz yüze iletişimin pratiklerinin incelenmesi. Proceeding Book, 2021, 40.Congress Book Isbn: 978-625-7341-55-4 www.avrasyakongresi.org, 40-46.*
- Genç, R. (2017). The importance of communication in sustainability & sustainable strategies. *Procedia Manufacturing*, 8, 511-516.
- Gold, B. (1977). Digital speech networks. *Proceedings of the IEEE*, 65(12), 1636-1658.
- Hussain, S. (2017). Teaching speaking skills in communication classroom. *International Journal of Media, Journalism and Mass Communications*, 3(3), 14-21.
- Ibodulloyeva, Z. (2020). The importance of speaking skill in the classroom. *Archive of Conferences*, 11(1), 3-4. <https://conferencepublication.com/index.php/aoc/article/view/459>
- İşcan, A., & Karagöz, B. (2016). Türkçe öğretmen adaylarının konuşma kaygılarının incelenmesi Gaziosmanpaşa Üniversitesi örneği [A study on speech anxiety of turkish language teacher candidates (example of Gaziosmanpaşa University)]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi- Ahi Evran University Journal of Kırşehir Education Faculty (KEFAD/JKEF)*, 17(3), 193-206.
- Jayant, N. (1976). Average and median-based smoothing techniques for improving digital speech quality in the presence of transmission errors. *IEEE Transactions on Communications*, 24(9), 1043-1045.
- Kadhim, S. A., & Ahmed, S. S. (2023). A review on chaotic cryptosystems for digital speech communication. *Journal of Al-Ma'moon College*, 1(39), 182-201.
- Karagülle, A. E., & Çaycı, B. (2014). Ağ toplumunda sosyalleşme ve yabancılaşma [Socialization and alienation in the network society]. *Turkish Online Journal of Design Art and Communication*, 4(1), 1-9.

- Karahisar, T. (2013). Dijital nesil, dijital iletişim ve dijitalleşen (!) Türkçe. *AJIT-e: Academic Journal of Information Technology*, 4(12), 71-83.
- Katranç, M. (2014). Öğretmen adaylarının konuşma becerisine yönelik öz yeterlik algıları[Pre-service teachers' self-efficacy perception of their speaking skills]. *Bartın Üniversitesi Eğitim Fakültesi Dergisi -Bartın University Journal of Faculty of Education*, 3(2), 174-195.
- Kaya, İ. (2022). COVID-19 salgını döneminde dijital bölünme: Kadınların deneyimleri üzerine bir araştırma[Digital divide during the COVID-19 pandemic: A study on woman's experiences]. *İstanbul Aydın Üniversitesi Sosyal Bilimler Dergisi*, 14(4), 554-573.
- Kırmızı, F. S., & Yurdakal, İ. H. (2021). Öğretmen adayları için dijital okumaya yönelik tutum ölçeği (DOTÖ): Geçerlik güvenirlik çalışması[Attitude scale towards digital reading (dras) for preservice teachers: Validity and reliability study]. *Dokuz Eylül Üniversitesi Buca Eğitim Fakültesi Dergisi- The Journal of Buca Faculty of Education*, (51), 137-159.
- Kurudayıoğlu, M. (2003). Konuşma eğitimi ve konuşma becerisini geliştirmeye yönelik etkinlikler. *Türklük Bilimi Araştırmaları Türkçenin Öğretimi Özel Sayısı*, 13, 267-309.
- Nematollahi, M. A., & Al-Haddad, S. A. R. (2013). An overview of digital speech watermarking. *International Journal of Speech Technology*, 16, 471-488.
- Özaslan, Y., & Meydan Uygur, S. (2014). Negatif ağızdan ağıza iletişim(Wom) ve elektronik ağızdan ağıza iletişim (e-Wom): yiyecek-içecek işletmelerine yönelik bir araştırma[Negative word of mouth communication (wom) and electronic word of mouth communication (ewom): A research on food and beverage businesses]. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi- Ataturk University Journal of Economics and Administrative Sciences*, 28(3), 69-88.
- Özdemir, S. (2018). Türkçe öğretmeni adaylarının konuşma kaygılarını gidermede hazırlıklı konuşmaların rolü[The effect of prepared speaking on eliminating the speaking anxiety of prospective Turkish teacher]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi-Bolu Abant İzzet baysal University Journal of Faculty of Education*, 18(1), 361-374.
- Özkan, E., & Kınay, İ. (2015). Öğretmen adaylarının konuşma kaygılarının incelenmesi (Ziya Gökalp Eğitim Fakültesi Örneği)[Analysing of prospective teachers' speaking anxiety (A sample of Ziya Gökalp faculty of education)]. *Uluslararası Türkçe Edebiyat Kültür Eğitim (Teke) Dergisi*, 4(3), 1290-1301.
- Potur, Ö. & Yıldız, N. (2016). Konuşma becerisi alanında yapılan akademik çalışmaların eğilimleri[Tendencies of academic studies in speaking skills field]. *Dil ve Edebiyat Eğitimi Dergisi*, (18), 27-40.
- Rabiner, L. R., & Schafer, R. W. (2007). Introduction to digital speech processing. *Foundations and Trends in Signal Processing*, 1(1-2), 1-194.
- Rao, P. S. (2019). The importance of speaking skills in English classrooms. *Alford Council of International English & Literature Journal (ACIELJ)*, 2(2), 6-18.
- Rowbottom, J. (2012). To rant, vent and converse: Protecting low level digital speech. *The Cambridge Law Journal*, 71(2), 355-383.
- Sakallı, C., & Bahadıroğlu, D. (2018). Dijital iletişim: Yeni bir dile doğru[Digital Speech: Towards a new language]. *Turkish Studies*, 13 (6), 129-146.
- Schafer, R. (1972). A survey of digital speech processing techniques. *IEEE Transactions on Audio and Electroacoustics*, 20(1), 28-35.

- Temizyürek, F. (2007). İlköğretim ikinci kademedeki konuşma becerisinin geliştirilmesi[Progressing speaking ability in second level of elementary education]. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi- Ankara University Journal of Faculty of Educational Sciences (JFES)*, 40(2), 113-131.
- Tuna, Y. (2012). İletişim kavramı ve iletişim süreci. İletişim içinde (ss.2-23)(*Communication concept and communication process. In Communication (pp.2-23)*). Pegem Akademi Yayıncılık.
- Venkatagiri, H., & Ramabadran, T. (1995). Digital speech synthesis: *Tutorial. Augmentative and Alternative Communication*, 11(1), 14-25.
- Yılmaz, G., & Özden, M. (2022). Dijital öykü kullanımının öğrencilerin konuşma becerisi tutum ve motivasyonuna etkisi[The effect of using digital story on students' speaking skills, attitudes and motivation]. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi- RumeliDE Journal of Language and Literature Studies*, (31), 197-208.
- YÖK/ Yükseköğretim Kurulu (2023). Yükseköğretim kurumları, bilimsel araştırma ve yayın etiği yönergesi. <https://www.yok.gov.tr/Sayfalar/Kurumsal/mevzuat/bilimsel-arastirma-ve-etik-yonetmeligi.aspx> (Erişim tarihi: 22.06.2023)
- Yurdakal, H.İ. (2021). Dijital konuşma eğilimi ölçeğinin geliştirilmesi: Güvenirlik ve geçerlik çalışması (DİKE) [Development of digital speech tendency scale: Reliability and validity study (DSTS)] *Turkish Studies-Educational Sciences*, 16(5), 2529-2549. <https://dx.doi.org/10.7827/TurkishStudies.49879>

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