E-ISSN: 2636-8102

Turkish JournalPark ACADEMIC

LATER

Language Teaching and Educational Research

Volume 6 | Issue 2

December - 2023

Editor-in-Chief

Assoc. Prof. Dr. Yusuf DEMİR

https://dergipark.org.tr/en/pub/later

CONTACT INFORMATION

laterjournal@gmail.com

+905063302054

Language Teaching and Educational Research (LATER) is a scientific, non-profit, open-access journal and is indexed/abstracted in national and international databases. Authors are responsible scientifically and legally for all the contents published in the journal. Please check journal website for aim, scope, ethical principles of the journal and article publication processes.

E-ISSN: 2636-8102

LATER is Indexed/Abstracted in

- H W Wilson EBSCO
- EBSCO Education Research Complete
- DOAJ
- MLA
- WorldCat
- EZB
- ESJI
- TEİ
- MIAR
- Academindex
- ASOS
- Neliti
- ResearchBib
- JF
- idealonline
- Sjifactor
- Cosmos
- CiteFactor
- RootIndexing
- SIS
- Acarindex
- BASE by Bielefeld University Library

E-ISSN: 2636-8102

Editorial Board

E-ISSN: 2636-8102

TABLE OF CONTENTS

Research title	Author(s)	Pages
EFL instructors' corpus literacy and their perceptions of using corpora to teach L2 vocabulary	*Fulya Eslek-Onur* *Sibel Tosun*	*110-123*
Experiencing flow with technology in foreign language classrooms	*Halil Rıfat Çelik* *Asuman Aşık*	*124-142*
Determining the strategies used by teachers working with students with intellectual disabilities in teaching reading comprehension	*Yasin Günlü* *Çağla Özgür-Yılmaz*	*143-159*
Pre-service EFL teachers' knowledge and beliefs about developmental dyslexia: Implications for EFL teacher training	*Cihat Atar* *Alia Amir*	*160-175*
A review on teachers' and teacher candidates' intrinsic motivation: Self-determination theory perspective	*Derya Uysal*	*176-198*

Language Teaching and Educational Research

e-ISSN 2636-8102

Volume 6, Issue 2 | 2023

EFL Instructors' Corpus Literacy and Their Perceptions of Using Corpora to Teach L2 Vocabulary

Fulya Eslek-Onur
Sibel Tosun

To cite this article:

Eslek-Onur, F., & Tosun, S. (2023). EFL instructors' corpus literacy and their perceptions of using corpora to teach L2 vocabulary. *Language Teaching and Educational Research (LATER), 6*(2), 110-123. https://doi.org/10.35207/later.1284574

LATER
http://dergipark.org.tr/later
Language Teaching and Educational Research
e -ISSN: 2636-8102 *LATER*, 2023: 6(2), 110-123
Turkish JournalPark ACADEMIC

Research Article

EFL instructors' corpus literacy and their perceptions of using corpora to teach L2 vocabulary

Fulya Eslek-Onur* ORCID
EFL Instructor, Department of Foreign Languages, Munzur University, TURKIYE
Sibel Tosun ORCID
EFL Instructor, School of Foreign Languages, Fırat University, TURKIYE

Abstract

Corpus literacy is "the ability to use the technology of corpus linguistics to investigate language and enhance the language development of students" (Heather & Helt, 2012, p.417). The recent literature focused primarily on the perceptions of students and teachers about corpus use in learning and teaching vocabulary or investigated corpus literacy alone, but EFL teachers' corpus literacy is not explored. This study employed an explanatory sequential mixed-method design to investigate the corpus literacy of EFL instructors and their perceptions of using corpora to teach second-language vocabulary. A total of 41 EFL instructors working in 17 different state universities in Turkiye participated in the study. Data were gathered through a questionnaire and semi-structured interviews. The results showed that the EFL instructors had low to medium levels of corpus literacy. In addition, there was no correlation between corpus literacy and the teaching experience of the participants. The results also showed that despite their familiarity with corpora, the instructors had never used one to teach vocabulary. Furthermore, the majority of the participants learned about corpora and corpus tools during their Ph.D. and MA studies in English language teaching and linguistics, mostly through coursework and publications.

Received
17 April 2023

Accepted
05 July 2023

Keywords
Corpus literacy
Corpora
Vocabulary teaching

Suggested APA citation: Eslek-Onur, F., & Tosun, S. (2023). EFL instructors' corpus literacy and their perceptions of using corpora to teach L2 vocabulary. *Language Teaching and Educational Research (LATER), 6*(2), 110-123. https://doi.org/10.35207/later.1284574

Note(s)
*Corresponding author
**The ethics committee approval was obtained from Munzur University with a document number of 75395 on 28/11/2022.

Author(s)' statements on ethics and conflict of interest
Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.
Statement of interest: We have no conflict of interest to declare.
Author contribution disclosure: Both authors contributed equally to this study.
Funding: None
Acknowledgements: We would like to thank 41 instructors who accepted to participate in the study. We are also grateful to the anonymous reviewers for their comments and suggestions.

Introduction

Accessing information in the present era is relatively simple, and the centrality of technology in our lives makes it a vital component of education. The rapid changes in technologies have led to innovations not only in our daily lives but also in schools and classrooms, allowing the use of new tools, particularly in language education. A corpus (plural corpora) is one of these tools and is defined as a compilation of written and spoken language in computerized databases. According to Conrad (2005), a corpus is an extensive, systematic collection of naturally occurring texts stored and presented in electronic form. Similarly, Vyatkina and Boulton (2017) define corpora as "systematically organized electronic collections of texts" (p. 1). As the researchers stated, corpora represent a natural and authentic source of language, and the texts are from real life, namely from academic journals, newspapers, magazines, TV shows, movies, and so on. However, corpora are not merely regarded as collections of texts but as "genuine theoretical resources used in a number of applied research areas" (Oțăt, 2016, p. 41). Various types of corpora can be utilized for different areas of study, including general and specialized corpora, written and spoken corpora, and native and learner corpora.

Linguistics, as the scientific study of language, intersects with corpus linguistics in every subfield. Corpus linguistics focuses on how languages are used in practice and examines language as it is used in real life. Therefore, it is a method of language analysis in which a collection of texts comprising authentic language is stored in a corpus. According to Conrad (2000), corpus linguistics is "the empirical study of language relying on computer-assisted techniques to analyze large, principled databases of naturally occurring language" (p. 548). Corpora enable users to analyze word frequency and examine examples of word usage within specific contexts. On the other hand, corpus literacy refers to "the ability to use the technology of corpus linguistics to investigate language and enhance the language development of students" (Heather and Helt, 2012, p. 417). In his research, Callies (2019) outlined several aspects of corpus literacy, including:

a. Understanding basic concepts in corpus linguistics: What is a corpus, and what types of corpora are available and how? What can you do – and cannot do – with a corpus?
b. Searching corpora and analyzing corpus data using corpus software tools, e.g., concordancers: What is corpus software, and how can it be used to search a corpus? How can corpus output be analyzed?
c. Interpreting corpus data: How can general trends in language use or change be inferred from corpus data?
d. Using corpus output to generate teaching materials and activities: How can corpus materials be utilized for teaching purposes? (p. 247)

The use of corpora in language education has focused on various domains, including vocabulary, grammar, reading, and writing. Being used for multiple purposes and being a rich source of real-life data, corpora have greatly increased in popularity more recently (see Abdel Latif, 2020; Aşık, 2017; Çalışkan & Kuru Gönen, 2018; Frankenberg-Garcia, 2012; Hirata & Hirata, 2019; Lee, 2011; Poole, 2020; Şimşek, 2020; Xodabande & Nazari, 2022) in second language pedagogy, especially in vocabulary teaching and learning. A myriad of corpus-based and corpus-related studies (see Barabadi & Khajavi, 2017; Belkhir, 2013; Çilak, 2017; Kazaz, 2015; Koçak, 2020; Tosun, 2017) have been undertaken recently to teach vocabulary, and their

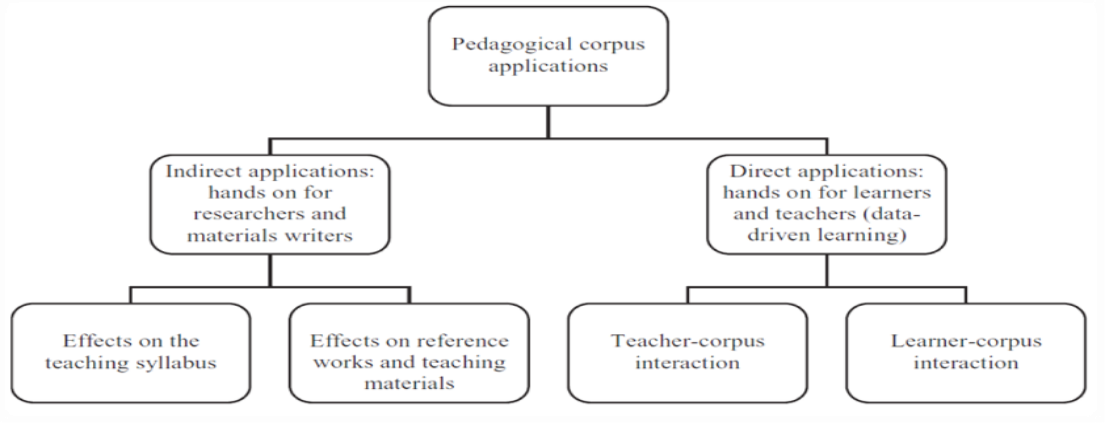
findings indicate that using corpora to expand students' vocabulary is more effective than traditional methods.

Vocabulary is an essential component of language learning and teaching. Second language learners need to acquire a sufficient vocabulary in order to use the target language effectively. Lewis (1993) emphasized the importance of vocabulary in a language, claiming that "lexis is the core or heart of language" (p. 89). According to Schmidt's noticing hypothesis (1990, 1993), learners learn new vocabulary or grammatical features when they are aware of them, and they are unlikely to learn grammatical forms unless they consciously pay attention to them. Retention improves when learners are given more opportunities to hear and use the target language and when they focus their attention on the vocabulary being learned (Schmitt, 2008). Therefore, EFL instructors and teachers should place special emphasis on vocabulary teaching and utilize novel techniques and methods to teach the target vocabulary. It should be kept in mind that 21st-century EFL learners are technologically competent digital natives (See Akayoğlu et al., 2020; Farhadi & Öztürk, 2023; Solak & Recep, 2014). Hence, as EFL teachers and instructors, we can integrate technology into our teaching to make use of corpora and concordancers to teach vocabulary. At this juncture, having corpus literacy would help EFL instructors and teachers develop corpus-based syllabi and materials for vocabulary instruction. Therefore, the present study is significant as it explores the extent of English instructors' knowledge, and aims to raise awareness and knowledge of corpora among EFL instructors. It offers significant implications for second language teacher education (SLTE), including pre- and in-service training, and fills the gap in the limited number of studies on this issue.

Review of the Literature

Over a few decades, researchers in the field of language education have focused on corpus-related studies, and both indirect and direct uses of corpora are common pedagogical applications in teaching and learning English as a foreign language. In indirect applications, researchers and teachers use corpora to create curricula, syllabi, and materials, which can lead to the use of actual language samples in textbooks instead of invented examples. Direct corpus applications for language teaching and learning, on the other hand, usually involve students accessing a corpus directly (Römer, 2011). Figure 1 summarizes the direct and indirect applications of corpora. As depicted in Figure 1, different kinds of corpus methods and tools can have varied effects on different people and things (Römer, 2011).

Figure 1. The use of corpora in second language learning and teaching by Römer (2011)



There is an increasing number of corpus-related studies in the existing literature. Most of these studies were conducted with EFL learners or pre-service EFL teachers. For instance, Belkhir (2013) conducted a study to illustrate how computer corpus data mitigates the challenges associated with EFL vocabulary teaching and learning. Belkhir (2013) carried out this study to determine the extent to which EFL teachers are familiar with the idea of computer corpus data and to explore EFL teachers' views on using computer corpus analysis as a language source for EFL vocabulary selection and training. Utilizing a mixed-method research design, the participants of the study were 10 EFL teachers working at the Department of Foreign Languages, University of Tlemcen in Algeria. Data were obtained from the participants through a semi-structured interview and a five-point Likert scale. It was reported that all participating teachers used the Oxford Advanced Learner's Dictionary and other vocabulary teaching materials, such as English Vocabulary in Use, to improve their students' word knowledge and vocabulary skills. The results showed that the majority of participants expressed dissatisfaction with the teaching sources and materials they were using at the time. Furthermore, the results of the semi-structured interview revealed that almost all the participants were unfamiliar with computer corpus data, but they had positive attitudes towards using computer corpus data as a source for EFL vocabulary selection in particular and English teaching in general. In conclusion, Belkhir (2013) emphasized the importance of vocabulary in strengthening students' four language skills. She suggested that curriculum designers and language teachers use computer corpus data to teach vocabulary. She also advised EFL teachers to update their resources and materials to teach more effectively.

As for the utility of data-driven methods to teach vocabulary, Barabadi and Khajavi (2017) conducted a study to compare the data-driven learning approach and traditional methods of teaching vocabulary. The study involved 62 Iranian students at two English institutes in Iran. The researchers formed three intact groups, two of which were experimental groups. Both the experimental and control groups were administered a vocabulary test that included the essential words encountered in their textbooks after the 7-week treatment. The results showed no significant difference between the experimental and control groups in this vocabulary test. The results of the vocabulary size test indicated that the vocabulary size of the two groups was the same in terms of reading comprehension. Furthermore, the results showed that the corpus-based, data-driven approach to teaching and learning vocabulary was more effective than traditional methods. Learners in the experimental group performed better than learners in the control group. Similarly, Çilak (2017) studied effects of corpus-based materials on the vocabulary knowledge of EFL learners. The purpose of the study was to determine whether corpus-based vocabulary activities have an impact on the learning and retention of target vocabulary. For this experimental study, which involved 41 EFL learners, quantitative data were collected through pre-tests and post-tests, while qualitative data were obtained through interviews with 10 learners in the experimental group. Two pre-tests were designed: one based on corpus-based material and the other on coursebook material. Each pre-test contained 50 new vocabulary items that would be taught during the study. The items were selected from corpus-based and coursebook resources and included nouns, verbs, adjectives, adverbs, and phrasal verbs. The results of this study demonstrated statistically significant differences in the impact of corpus-based materials and the traditional teaching approach on learners' average vocabulary scores. Furthermore, the paired sample t-test revealed no statistically significant difference between the coursebook-based test and the corpus-based test.

Analysis of the interviews revealed participants' positive attitude toward corpus-based vocabulary. The study also indicated the positive effects of using corpus-based vocabulary teaching resources on learners.

The studies on perceptions were centered around both teachers and students. For example, Çalışkan and Kuru Gönen (2018) conducted a qualitative study to investigate university instructors' perspectives on the use of concordance lines in vocabulary teaching and their attitudes toward corpus-based materials after receiving training. Three EFL instructors participated in a four-week training program that focused on teaching about corpora, using corpora to teach language, and incorporating corpus-based language pedagogy principles into the classroom. Data were collected using various instruments, including semi-structured interviews, reflective logs, and an open-ended questionnaire. The results of the study revealed the limited effectiveness of corpus-based materials for vocabulary instruction. Participants identified the challenges of developing corpus-based materials and highlighted technology issues as difficulties they faced.

As well as exploring EFL instructors' perceptions on using corpus-based materials in vocabulary instruction, EFL learners' attitudes to corpus have been studied. Sinha (2021), for instance, investigated EFL students' perceptions and attitudes toward corpus as a vocabulary learning tool. Data were gathered from 32 first-year undergraduate students enrolled in an introductory English language course at a private university in Bangladesh. It was reported that most of the participants found the corpus a useful tool for learning new words, but they also complained that the nature of the corpus data made learning challenging for them.

To sum up, the studies in the existing literature mostly focused on the perceptions of students and teachers about corpus use in learning and teaching vocabulary or investigated corpus literacy alone. For this reason, exploring EFL teachers' corpus literacy with a particular emphasis on vocabulary is an under-researched area. In addition, the exploration of the association between corpus literacy and teaching experience has received scant attention in the research literature. This study, therefore, sets out to examine EFL teachers' corpus literacy, their perceptions of teaching vocabulary, and its relationship with teaching experience. The present study aims to explore EFL instructors' corpus literacy levels and how EFL teachers perceive the use of corpora for teaching second language vocabulary. With this in mind, this study was guided by the following three research questions:

1. What is the corpus literacy level of EFL instructors?
2. Is there an association between the corpus literacy levels of EFL instructors and their teaching experience?
3. What are EFL instructors' overall perceptions towards the use of corpora to teach vocabulary?

Methodology

Research design

The current study employed an explanatory sequential mixed-method design to explore EFL instructors' perceptions of using corpora to teach second language vocabulary. Creswell (2014) describes mixed method research design as "a combination of qualitative and quantitative approaches which provides a more complete understanding of a research problem than either approach alone" (p. 4). Teddlie and Tashakkori (2009) also asserted that mixed-methodologists primarily follow the pragmatic paradigm and are interested in both qualitative

and quantitative data and their analysis. Exploring the perceptions of EFL instructors regarding the use of corpora through the combination of these methodologies would therefore provide a comprehensive understanding of the phenomenon. In this research design, a Quan > Qual sequence was followed (Creswell, 2014). Firstly, quantitative data were collected and analyzed, and then the researchers started to collect qualitative data. Three research questions were formed, and a purposive sampling method was utilized to select the participants. Table 1 provides the overall plan of the study.

Table 1. Research design

Research Questions	Sampling Strategy	Participants	Data Collection Tools	Data Analysis
1. What is the corpus literacy level of EFL instructors?	Purposive Sampling	41 EFL Instructors	Questionnaire	Descriptive Statistics
2. Is there an association between the corpus literacy levels of EFL instructors and their teaching experience?	Purposive Sampling	41 EFL Instructors	Questionnaire	Chi-Square Analysis
3. What are EFL instructors' overall perceptions towards the use of corpora to teach vocabulary?	Purposive Sampling	6 EFL Instructors	Semi-structured Interviews	Content Analysis

Participants

The participants in this study were 41 EFL instructors from 17 different state universities in Turkiye. The participants in the study were selected using a procedure called purposive sampling. The inclusion criterion was as follow: work as an EFL instructor at a university. 29 of the 41 participants were female and 12 were male. The participants were from 17 different state universities. [Adana Alparslan Türkeş Science and Technology University (N=2), Adıyaman University (N=2), Anadolu University (N=1), Atatürk University (N=1), Bursa Technical University (N=1), Bingöl University (N=1), Fırat University (N=18), İzmir Demokrasi University (N=2), Kırşehir Ahi Evran University (N=2), Middle East Technical University (N=1), Munzur University (N=4), Muğla Sıtkı Koçman University (N=1), Niğde Ömer Halis Demir University (N=1), Osmaniye Korkut Ata University (N=1), Samsun University (N=1), Turkish Aeronautical Association University (N=1), and Yalova University (N=1)] in Turkiye. While 40 of them were working at the School of Foreign Languages, only one of the participants was working at the Applied English and Translation Programme. The demographic information of the participants is presented in Table 2.

Table 2. Demographic information of EFL instructors

Educational Status	Number	Teaching Experience	Total
Bachelor degree (BA)	10	1-20+ years	41
Master degree (MA)	10		
Phd Students/Candidates	18		
PhD degree (PhD)	3		

Data collection tools

In this study, quantitative data were collected using a questionnaire to ask for descriptive and background information about the participants and their prior knowledge of corpora. The questionnaire was adopted from Çalışkan (2020), who also adapted Bunting's (2013) questionnaire. This questionnaire consisted of three sections: a. Demographic Information, b. Your Knowledge about Corpus Tools and c. Experience in the Use of Corpora. Given the scope of the current study, only one question (Would you like to attend extensive workshop sessions on the use of corpus tools in EFL classrooms?) was deleted. A colleague with a Ph.D. in the field of ELT was consulted to determine the validity of the questionnaire, and she approved it and did not make any suggestions. In addition, a semi-structured interview was used for the qualitative data. The questions of the semi-structured interview were adapted from Çalışkan (2020) and revised, and two questions were modified within the scope of the current study.

Data collection procedure

The data were collected using a questionnaire and semi-structured interviews. The questionnaire was designed using a free online tool, and the link was shared with the participants. Since the participants were from different state universities in different cities, collecting the data through this online tool was time-saving and convenient. The data were gathered from a total of 41 EFL instructors. Similarly, the semi-structured interviews were conducted via Zoom meetings, and six participants volunteered to attend. Each session was recorded with the participants' knowledge and consent.

Data analysis

The data analysis stage consisted of two phases due to the mixed qualitative and quantitative data collection methods utilized in the study. The participants' corpus literacy levels were explored through descriptive and frequency analysis using SPSS. The mean scores and standard deviation were presented in tables. The quantitative analysis also included examining the association between corpus literacy levels of EFL instructors and their teaching experience using Chi-Square analysis. Additionally, participants' perceptions were analyzed qualitatively through content analysis. The semi-structured interviews were transcribed verbatim. The researcher initially reviewed the data to gain a general understanding. Each transcription was then emailed to the participants for verification. The transcriptions were analyzed through iterative readings, with the researchers manually coding the raw data by highlighting relevant phrases or sentences. In vivo codes derived from participants' own speech were used.

Results

Corpus literacy levels of EFL instructors and its association with teaching experience

In an attempt to answer the first research question, which explores the corpus literacy level among EFL instructors, the quantitative data, gathered through the questionnaire, was analyzed on SPSS. The results of the descriptives analysis are presented in Table 3.

Table 3. Descriptives on the knowledge of corpora

Items	*N*	*M*	*STD*
1. Corpus software programs (e.g., Antconc, WordSmith Tools)	41	1.92	0.93
2. Online corpora (e.g., COCA, Sketch Engine, Lextutor)	41	2.46	0.95

As seen in Table 3, the participants have low awareness of corpus software programs such as Antconc, WordSmith, etc. (M = 1.92, SD = 0.93). On the other hand, it has been found that EFL instructors have a moderate-high familiarity with online corpora such as COCA, Sketch engine, Lextutor, etc. (M = 2.46, SD = 0.95). The participants were also surveyed on their knowledge of using corpus tools in various areas. Similarly, frequency analysis was run for mean scores. The findings are displayed in Table 4 below.

Table 4. Descriptives on the knowledge of the use of corpus tools

	Items	*N*	*M*	*STD*
1.	Using corpus tools directly with students (e.g., analyzing concordance lines)	41	2.12	1.02
2.	Using corpus tools to create corpus-informed classroom materials	41	2.19	0.98
3.	Using corpus tools to create vocabulary activities	41	2.12	0.92
4.	Using corpus tools to check students' vocabulary knowledge	41	2.19	0.98
5.	Using corpus tools to build my own language knowledge	41	2.39	1.09

As seen in Table 4; overall, the participants demonstrate low-moderate knowledge using corpus tools. The highest mean score belongs to item 5 (M = 2.39, SD = 1.09), indicating that EFL instructors use corpus tools to build their language knowledge the most among other purposes. Personal academic development purpose is followed by the creation of corpus-informed materials (M = 2.19, SD = 0.98) and checking students' vocabulary knowledge (M = 2.19 SD = 0.98) with the same mean score. The least resorted purpose of corpus use belongs to the direct use of corpus with students (M = 2.12, SD = 1.02) and the creation of vocabulary activities (M = 2.12, SD = 0.92). In the light of these findings, it can be concluded that EFL instructors tend to use corpus tools for self-improvement, but they seem to have little information on how to use corpus tools directly with students or how to create corpus-informed materials.

The EFL instructors' corpus literacy was also explored through open-ended questions, inquiring about the source of their corpus awareness. First, regarding the question about the educational source of corpus and corpus use, 17 participants indicated that they were informed on the use of corpora as part of BA, MA, or Ph.D. education. 11 out of 17 participants reported that they have learnt about the corpus and some corpus tools during their Ph.D. studies. While six participants mentioned MA courses as the source of their corpus knowledge, only two mentioned they were informed about corpus during their BA.

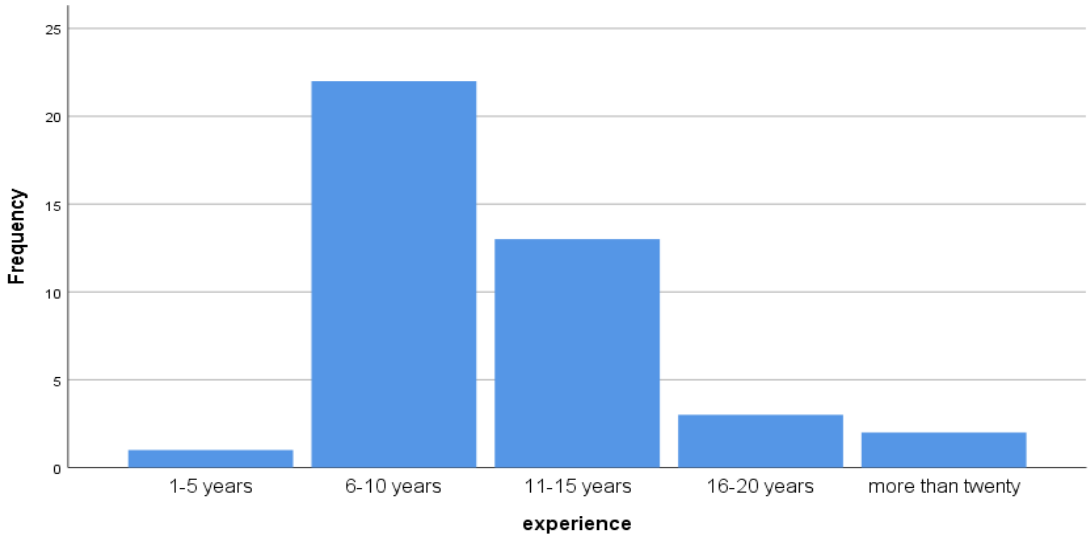
The participants were also asked whether they had received training in the use of corpora as part of a continuing education program (e.g., before or during training). It was found that only one female participant had received training on corpus and corpus use as part of her ICELT training. This finding is noteworthy in that the participants either had not received training or the use of corpora and corpus was not part of their training programs.

With respect to the question investigating other academic sources of corpus knowledge such as conferences, journals, and so on, six participants indicated that they read about corpus in journals and articles. In contrast, two instructors stated that they had been informed about corpus through conferences and one through online workshops. One participant also mentioned that his MA thesis was on the corpus, so he had studied it by himself. Another participant stated that she was informed about corpus when she attended her colleague's corpus training.

Lastly, the EFL instructors were asked which corpus tools they had used before. Only one-third of the participants (N = 14) reported using a corpus. COCA was the most frequently used corpus tool, with a frequency of 11, followed by BNC and Sketch Engine. Only one participant reported using the Antconc concordance as part of her MA thesis. As for the purpose, most participants who used corpus tools stated that they used them to teach vocabulary and collocations. Some also indicated that they used the corpus for writing; a minority of the participants mentioned that they used the corpus for grammar and linguistics. Only one participant reported the use of corpus to prepare course materials and exam questions.

To answer research question 2, which examines the association between corpus knowledge and teaching experience, the Chi-square test was calculated. First, descriptive information about the teaching experience of the EFL teachers was obtained, and the results are presented in Figure 2.

Figure 2. Teaching experience of the participants



As illustrated in Figure 2, the teaching experience of EFL instructors varies between 1-5 years and more than twenty years. However, the teaching experience of the majority of the participants ranges between 6 and 15 years. Instructors with 6-10 years of experience hold the highest percentage (53.7%, N = 22), followed by instructors with 11-15 years of experience (31.7%, N = 13) and 16-20 years of experience (7.3%, N = 3). Only two participants stated that they had more than twenty years of experience (4.9%), and one reported 1-5 years of experience (2.4%). Besides the descriptive analysis of teaching experience, its association with

corpus literacy was further explored with Chi-Square analysis, whose results are presented in Table 5.

Table 5. The Chi-Square test for the association between corpus literacy and teaching experience

Pearson chi-Square *Items*	Value	*df*	Asymp. Sig. (2-sided)	*Phi*
1. Knowledge of corpus software programs	5.99	12	.91	.38
2. Knowledge of online corpora	9.56	12	.65	.48
3. Using corpus tools directly with students (e.g., analysing concordance lines)	7.75	12	.84	.43
4. Using corpus tools to create corpus-informed classroom materials	9.35	12	.67	.47
5. Using corpus tools to create vocabulary activities	9.63	12	.64	.48
6. Using corpus tools to check students' vocabulary knowledge	7.93	12	.79	.44
7. Using corpus tools to build my own language knowledge	10.0	12	.61	.49

The Chi-square test for independence indicated no significant association between the knowledge of corpus and corpus tools and teaching experience. The non-significant difference was found in the knowledge of software programs $\chi2(12) = 5.99$, $p = .96$, $phi = .38$; knowledge of online corpora, $\chi2(12) = 9.56$, $p = .65$, $phi = -.48$; using corpus tools directly with students $\chi2(12) = 7.75$, $p = .84$, $phi = .43$, using corpus tools to create corpus informed classroom materials $\chi2(12) = 9.35$, $p = .67$, $phi = .47$, using a corpus to create vocabulary activities $\chi2(12) = 9.63$, $p = .64$, $phi = .48$, using corpus tools to check students' vocabulary knowledge $\chi2(12) = 7.93$, $p = .79$, $phi = .44$, and lastly, using corpus tools to build their own knowledge $\chi2(12) = 10$, $p = .61$, $phi = .49$. These findings indicate that EFL instructors' knowledge on corpus and corpus tools is not dependent on their teaching experience.

The findings of the qualitative data obtained through semi-structured interviews with six EFL instructors revealed that three participants had knowledge of corpus but never used them to teach vocabulary. On the other hand, two participants stated that they had to use corpora such as COCA and BNC in their Ph.D. assignments but never used them in their classrooms. They shared their ideas in the following words:

> *I know COCA. I took a course called Web-based language teaching, and we covered it, but not in detail. We can teach vocabulary via corpora, but I think native corpora are not appropriate for our students' language level. A classroom corpus might be used for them (Interviewee III).*

They also reported that textbooks, prescribed word lists, and collocation dictionaries could be more effective and user-friendly in teaching vocabulary. On the issue, Interviewee I and Interviewee II expressed their ideas as follows:

> *I do not find corpora user-friendly. Their interfaces are complex and should be improved. It is also not suitable for the level of my students. Textbooks have become standardized, and some publishers are very successful in this business. Corpora might be used while teaching English to immigrant students or while teaching English for*

academic purposes. I think collocation dictionaries or some other websites such as Ludwig are more useful and practical (Interviewee I).

I heard the term corpus but I have never used it in my classes. I think they are not user-friendly and they are for researchers and professionals. Their interfaces are not attractive and for me they are time consuming. Using online dictionaries, for example collocation dictionaries are more practical (Interviewee II).

On the other hand, Interviewee VI emphasized the importance of corpora in language learning, and she expressed that corpora provide authentic materials and they are beneficial for students to see the different structures and usage of a word, to learn collocations of words. She highlighted the importance of corpora as below:

I first heard the term "corpus" when I was a student. At that time, my lecturers were dealing with the subject of corpus. Then I did research and learned a lot. I love to use corpora. I developed a corpus for my master's thesis. I used both written and spoken corpora to teach vocabulary and speaking. I also use them for my studies and they are part of my life (Interviewee VI).

Discussion

This study was designed to investigate the corpus literacy of EFL instructors, their perceptions of the use of corpora, and the relationship between corpus literacy and teaching experience. A main finding of the study is that the level of corpus literacy among the participating EFL instructors was low to moderate. Most of them had little to some knowledge of corpora and corpus tools. The participants had some knowledge of online corpora but were less knowledgeable about corpus software and programs. These findings are in line with those of Aşık (2015) and Callies (2019), who reported that only a limited number of participants were familiar with corpora and frequently used them in their classes. The findings are also consistent with those of Belkhir (2013), who sought to determine the extent to which EFL teachers were familiar with the idea of computer-corpus data and to explore the views of EFL teachers on the use of computer-corpus analysis as a language source for EFL vocabulary selection and training. The results of that study showed that almost all of the participants were unfamiliar with computer-corpus data but had positive attitudes towards using computer-corpus data as a source for EFL vocabulary selection in general and for English teaching in particular. Even so, it is worth noting that in the current study, the instructors who were familiar with corpora and corpus tools tended to use them for self-improvement rather than for instructional purposes.

There are many studies in the literature which focused on the use of hands-on corpora with students and the development of instructional materials, and these studies have shown many of the benefits of using corpora in language pedagogy. However, as the results of the present study suggest, it seems that the corpus has not yet found a place for itself in language education.

Several factors may contribute to the limited incorporation of corpora, such as tight teaching schedules or the lack of readily available teaching materials. Considering these factors, the findings have implications for program and curriculum developers, as well as materials developers. Including corpus-informed materials and tools in the curriculum could provide

instructors with greater benefits in terms of planning and implementing corpus use. This approach can help instructors gain more knowledge about corpora and reduce time spent on course syllabi and pre-made materials.

Another obvious finding of the study is that there was no association between the level of corpus literacy and teaching experience, suggesting that familiarity with the corpus and corpus tools does not depend on teaching experience. The responses to the open-ended questions about the sources of corpus knowledge gave the rationale for the result and a more likely determinant. The responses of the instructors showed that the majority of them had learned about corpora and corpus tools during their Ph.D. and MA studies in ELT and linguistics, mainly through courses and articles. Experienced instructors without MA and Ph.D. degrees and with graduate degrees in various departments reported little or no familiarity with the corpus. This result suggests that corpus literacy may be more attributed to academic development than teaching experience. There are no studies which have compared the academic development of EFL instructors with their usage of corpora. The current study is, therefore, crucial in this regard.

The findings discussed above provide useful implications for BA, pre-service and in-service training programs as well. The fact that only EFL instructors who had studied for an MA or a Ph.D. in ELT and linguistics majors were familiar with the corpus and its use points out the necessity of including corpus literacy courses as part of BA curriculums. For other disciplines than ELT and linguistics, training could be provided through pre-service and in-service programs. Römer (2011), however, commented that developments in corpus research had had little impact on the practice of English-language instruction since comparably few teachers and students are aware of valuable resources and use corpora or corpus software.

Conclusion and Implications

This study has provided a deeper insight into the corpus literacy of EFL instructors and has contributed to our understanding of instructors' knowledge of corpus and corpus tools and their relationship to experience. In the light of the findings, it can be implied that the potential of the corpus is not well received by EFL instructors for a variety of reasons. Future studies could focus on improving the corpus literacy of EFL instructors, as well as training them in the use of corpus tools for pedagogical purposes. In addition, the results suggest that there may be a stronger association between academic development and corpus literacy. Further studies regarding the role of academic development in corpus literacy would be worthwhile. On the other hand, second language teacher education programs could revise their curriculum, and program developers could offer prospective teachers a course called "Corpus Literacy". Such a course could develop the TPACK (Technological Pedagogical Content Knowledge) of prospective teachers.

While the study provides useful insights, the present study is not without limitations. The data were collected from the participants at 17 different universities. However, the generalizability of the results is subject to certain limitations, such as the number of participants. In addition, due to time constraints and the reluctance of participants, semi-structured interviews could only be done with six participants. The interviews could be conducted with more participants. All in all, it is recommended that future research be conducted with a larger sample and a more diverse population.

References

Abdel Latif, M.M.M. (2020). Corpus literacy instruction in language teacher education: Investigating Arab EFL student teachers' immediate beliefs and long-term practices. *ReCALL*, *33*(1), 34-48. https://doi.org/10.1017/S0958344020000129

Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., & Korkmazgil, S. (2020). Digital literacy practices of Turkish pre-service EFL teachers. *Australasian Journal of Educational Technology, 36*(1), 85–97. https://doi.org/10.14742/ajet.4711

Aşık, A. (2015). The use of corpora in EFL classrooms: What do Turkish EFL teachers know and offer to promote pragmatic competence? *The Asian EFL Journal, 17*(4), 194-221.

Aşık, A. (2017). A sample corpus integration in language teacher education through coursebook evaluation. *Journal of Language and Linguistic Studies, 13*(2), 728-740.

Barabadi, E. & Khajavi, Y. (2017). The effect of data-driven approach to teaching vocabulary on Iranian students' learning of English vocabulary. *Cogent Education, 4*(1), 1-13. doi.org/10.1080/2331186X.2017.1283876

Belkhir, F. Z. (2013). A survey on teachers' awareness and attitudes on computer-corpus data: An assisted technology-based EFL vocabulary selection and instruction source. *Procedia- Social and Behavioral Sciences, 103*, 77-85.

Callies, M. (2019). Integrating corpus literacy into language teacher education. In Götz, Z. & Mukherjee, J. (Eds.), *Learner Corpora and Language Teaching*, (pp. 245 – 264). John Benjamins Publishing Company.

Conrad, S. (2000). Will corpus linguistics revolutionize grammar teaching in the 21st century? *TESOL Quarterly, 34*(3), 548 - 560.

Conrad, S. (2005). Corpus linguistics and L2 teaching. In E. Hinkel (Ed.), *Handbook of Research in Second Language Teaching and Learning* (pp. 393-409). Mahwah, NJ: Lawrence Erlbaum.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.)*. Thousand Oaks, CA: Sage.

Çalışkan, G., & Kuru Gönen, S. İ. (2018). Training teachers on corpus-based language pedagogy: Perceptions on vocabulary instruction. *Journal of Language and Linguistic Studies, 14*(4), 190-210.

Çalışkan, G. (2020). *An investigation into EFL university instructors' perspectives on the use of corpora in language teaching*. [Master's thesis, Anadolu University]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Çilak, E. (2017). *The effects of using corpus-based materials in vocabulary instruction.* [Master's thesis, Ufuk University]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Farhadi, S. & Öztürk, G. (2023). Technological pedagogical content knowledge (TPACK) level and needs of pre-service English as a foreign language (EFL) Teachers: Evidence from Turkey. *Revista Educación, 47*(1). http://doi.org/10.15517/revedu.v47i1.51920

Frankenberg-Garcia, A. (2012). Raising teachers' awareness of corpora. *Language Teaching, 45*, 475-489. doi:10.1017/S0261444810000480

Gonzalez-Martinez, A. & Gandon-Chapela, E. (2021). Boosting English vocabulary knowledge through corpus-aided word formation practice. *RAEL, 20* (1), 49-70.

Heather, J. & Helt, M. (2012). Evaluating corpus literacy training for pre-service language teachers: Six case studies. *Journal of Technology and Teacher Education, 20*(4), 415- 440.

Hirata, Y. & Hirata, Y. (2019). Applying "Sketch Engine for language learning" in the Japanese English classroom. *Journal of Computing in Higher Education, 1*, 233-248. https://doi.org/10.1007/s12528-019-09208-z

Kazaz, İ. (2015). *Corpus-aided language pedagogy: The use of concordance lines in vocabulary instruction.* [Master's thesis, Bilkent University]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Koçak, A. (2020). EFL students' perceptions of using COCA to develop their vocabulary. *Journal of Language Research, 4*(1), 12-26.

Lee, S. (2011). Challenges of using corpora in language teaching and learning. *Linguistic Research, 28*(1), 159–178.

Lewis, M. (1993). *The lexical approach: The state of ELT and a way forward*. Hove, UK: Language Teaching Publications.

Oțăt, D. (2016). Corpus linguistics outcomes and applications in the digital era. In Dejica, D., Hansen, G., Sandrini, P. & Para, I. (Eds.), *Language in the Digital Era. Challenges and Perspectives*, (pp. 37-47). De Gruyter Open Poland. https://doi.org/10.1515/9783110472059-006

Poole, R. (2020): "Corpus can be tricky": Revisiting teacher attitudes towards corpus-aided language learning and teaching. *Computer Assisted Language Learning,* 1-22. https://doi.org/10.1080/09588221.2020.1825095

Römer, U. (2011). Corpus research applications in second language teaching. *Annual Review of Applied Linguistics, 31*, 205-225.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics, 11* (2), 129–158.

Schmidt, R. (1993). Awareness and second language acquisition*. Annual Review of Applied Linguistics 13*, 206–226.

Schmitt, N. (2008). Review article: Instructed second language vocabulary learning. *Language teaching research, 12*(3), 329-363.

Sinha, T. S. (2021). EFL learners' perception of and attitude to corpus as a vocabulary learning tool. *The Reading Matrix: An International Online Journal*, *(21)*2.

Solak, E. & Recep, Ç. (2014). Examining preservice EFL teachers' TPACK competencies in Turkey. *Journal of Educators Online, (11)*12.

Şimşek, T. (2020). *Corpora in foreign language teacher education: Introducing a corpus literacy course to ELT pre-service teachers.* [Doctoral dissertation, Çukurova University]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences.* Sage, London.

Tosun, S. (2017). *Data- driven language learning: The use of concordance lines in vocabulary learning*. [Master's thesis, Çukurova University]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Vyatkina, N., & Boulton, A. (2017). Corpora in language learning and teaching. *Language Learning & Technology, 21*(3), 1–8.

Xodabande, I. & Nazari, M. (2022). Impacts of a corpus linguistics course on in-service EFL teachers' corpus literacy. *Computer Assisted Language Learning Electronic Journal, 23*(1), 318-346.

Language Teaching and Educational Research

e-ISSN 2636-8102

Volume 6, Issue 2 | 2023

Experiencing Flow with Technology in Foreign Language Classrooms

Halil Rıfat Çelik
Asuman Aşık

To cite this article:

Çelik, H. R., & Aşık, A. (2023). Experiencing flow with technology in foreign language classrooms. *Language Teaching and Educational Research (LATER), 6*(2), 124-142. https://doi.org/10.35207/later.1307395

LATER
http://dergipark.org.tr/later
Language Teaching and Educational Research
e-ISSN: 2636-8102 *LATER*, 2023: 6(2), 124-142
Turkish JournalPark ACADEMIC

Research Article

Experiencing flow with technology in foreign language classrooms*

Halil Rıfat ÇELİK** ORCID
Instructor, School of Foreign Languages, Ankara Yıldırım Beyazıt University, TURKIYE
Asuman AŞIK ORCID
Associate Professor, Department of English Language Teaching, Gazi Faculty of Education, Gazi University, TURKIYE

Abstract
Information and communication technologies (ICT) used in education, particularly Web 2.0 tools, have become vital for today's language teaching environment. Learners and instructors employ these tools to enhance engagement and motivation in the classroom. Optimal experience and heightened focus associated with Web 2.0 tools align with the flow theory. This study explores the flow experience of English as a Foreign Language (EFL) learners and instructors while utilizing Web 2.0 tools and the factors influencing this experience. The Flow Short Scale and semi-structured interviews were employed for data collection. The findings indicate that EFL learners and instructors experienced flow while using Web 2.0 tools, and their perspectives on using these tools were revealed. Furthermore, the study emphasizes effectively integrating Web 2.0 tools into language lessons to enhance in-class flow experience and learning performance.

Received
30 May 2023
Accepted
25 June 2023

Keywords
Flow experience
Web 2.0 tools
ICT
Motivation

Suggested APA citation: Çelik, H. R., & Aşık, A. (2023). Experiencing flow with technology in foreign language classrooms. *Language Teaching and Educational Research (LATER), 6*(2), 124-142. https://doi.org/10.35207/later.1307395

*This article is derived and compiled from the master's thesis completed by the first author under the supervision of the second author.
**Corresponding author

Author(s)' statements on ethics and conflict of interest
Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. Approval that there is no ethical inconvenience in the study was obtained from Gazi University Ethics Committee, with the decision dated 21.12.2021 and numbered 2021/1164.
Statement of interest: We have no conflict of interest to declare.
Funding: None
Acknowledgements: None

Introduction

Educational psychology is a separate branch that involves the principles of psychology and education and combines them to enhance the education process (Walberg & Haertel, 1992). It helps educators understand students' learning processes and find ways to raise classroom motivation. Understanding the learning process allows educators to design the lesson according to the students' needs, and raising motivation increases the students' involvement and performance in classrooms (Duchesne & McMaugh, 2016). This motivation can be experienced when the learners appreciate the activity and participate only to be involved (Ryan & Deci, 2000). In this regard, enjoyment and concentration can be experienced through flow.

The Flow Theory is described as the experience when people are so involved with the activity that they can ignore anything; they complete the activity only for pleasure or enjoyment, so they may even endure any possible hardship just for the sake of the movement (Csikszentmihalyi, 1997). The theory has been researched in many different fields, such as sports (Huang et al., 2018; Jackson, 1996; Kim & Ko, 2019), computer science (Trevino & Webster, 1992; Webster & Martocchio, 1993), advertisement (Smith & Sivakumar, 2004) and art and science (Csikszentmihalyi, 1996). In addition to those studies, in language education, Egbert (2004) found out that flow happens in language classrooms, and the activities and language tasks may be designed to create flow. The following language teaching studies also show classroom flow experience and aim to create better lessons for promoting this experience (Aubrey, 2017; Azizi & Ghonsooly, 2015; Guan, 2013; Kirchhoff, 2013). To get learners' attention and motivate them, the content and learning environment should be exciting and motivating (Csikszentmihalyi, 1997).

The term flow describes an intense concentration state while performing a task (Csikszentmihalyi, 1990). Flow experience shares some common characteristics. To name the concentration state as the flow, one should experience highly intense concentration on the task by losing the sense of self, feeling of controlling one's actions, losing the sense of time, and feeling of intrinsic motivation for the task (Csikszentmihalyi & Nakamura, 2014). To make flow emerge in a task, some preconditions should be provided. These preconditions can be summarized as (a) the balance between challenge and skills in a task, (b) participants' attention is focused on the task, (c) the participant thinks the task is exciting or authentic, and (d) the participants have a sense of control (Csikszentmihalyi, 1975; Csikszentmihalyi & LeFevre, 1989).

Flow and language teaching

Several studies have investigated the relationship between flow and language learning (Abbott, 2000; Egbert, 2004; Larson, 1988; Schmidt & Savage, 1992; Tardy & Snyder, 2004). The motivational nature of flow was found effective in language learning. Some researchers assert that extrinsic motivational elements (e.g., grades) reduce the positive effects of learners' intrinsic motivations (Schmidt & Savage, 1992; Dörnyei, 1994). In this regard, studies on flow focus on motivational elements of flow and its relationship between tasks while learning different language skills (Egbert, 2004).

In addition, some studies explored educators' perceptions of experiencing flow (e.g., Belce, 2019). As Egbert (2004) states, flow can be experienced in language classrooms, providing an exciting and helpful guide for creating and adapting learning activities. It could benefit educators to understand flow theory and benefit from it while preparing for their language

classes. To foster flow in language classrooms, Egbert (2004) suggests that (a) the goals of the tasks should be clear, (b) the level of challenge should meet the learners' skills, (c) tasks should be related to learners' interests, (d) there should be enough activity time and immediate feedback, (e) learners should have a sense of control over the given tasks, and (f) learners should be entirely concentrated on the tasks without any interruptions.

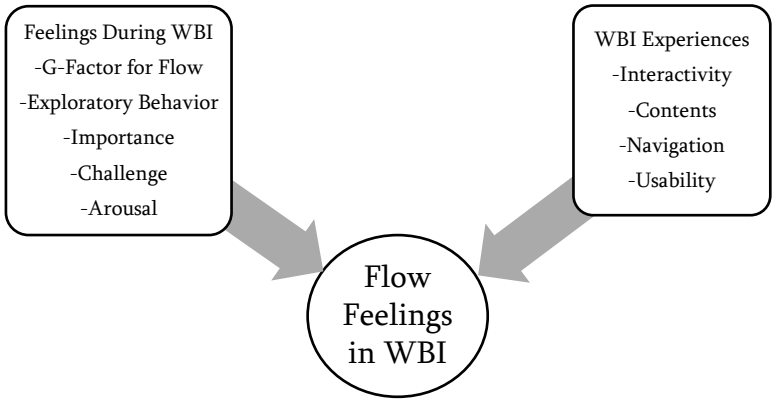
Flow and Web 2.0 tools

Web 2.0 tools have been widely used in learning environments to create a challenging, competitive, and collaborative classroom environment (Al-Kadi, 2018). Studies show that educators value the importance of ICT in teaching and have positive perspectives on using Web 2.0 tools (Al-Kadi, 2018; Başer Gülsoy, 2011; Öztürk, 2017). Moreover, these tools allow users to create their own system to practice the language subjects, design activities according to their levels, and boost motivation (Albayrak & Kıyıcı, 2017; Aşıksoy, 2018; Şahin Kızıl, 2015). Web 2.0 tools are among the essential components of this information age by meeting the needs of creating and sharing information with others in a fast way, visualizing and evaluating the data, and increasing motivation; educators in the 21st century have given importance to implementing these tools in their classes (Ajjan & Hartshorne, 2008; Grosseck, 2009; Kutlutürk & Akbayrak, 2013). Also, the recent developments in artificial intelligence (AI), machine learning (ML), and natural language processing (N.L.P.) have boosted the impact of Web 2.0 tools in language education, especially after the release of ChatGPT.

In second/foreign language teaching contexts, most language learners generally aim to (a) develop their listening skills by using Web 2.0 tools (Aşıksoy, 2018), (b) get familiar with the different accents of the target language (Duffy, 2009; Watkins & Wilkins, 2011) and (c) listen to the pronunciation of the vocabulary items. Studies indicate that these tools positively impact language learners by increasing their motivation and speeding up the learning process (Crook, 2008; Grant, 2016; Şahin Kızıl, 2015), creating an entertaining environment (Karaman et al., 2008; Thompson, 2007), turning the learning into a game-like experience for the learners (Çıldır & Koçak, 2022).

The relationship between flow and technology has been studied for decades. In one of the earliest studies, Rotto (1994) reviewed research articles to explore the relationship between curiosity, motivation, and flow in computer-based instruction (CBI). The studies state that developing a well-designed CBI lesson would improve learners' motivation, engagement, and flow experiences (Jones, 1998; Rotto, 1994). Although most of the studies were conducted under different majors, such as business, computer science, and marketing (Chen et al., 2000; Novak & Hoffman, 1997; Novak et al., 1999), they shed light on the relationship between flow and the Web by providing insights to explore flow more in the education field. Rha et al. (2005) showed the factors affecting learners' flow feelings in web-based instruction (WBI) environments and their relationship with WBI elements that the learners experience (Figure 1).

Figure 1. Optimal flow experience in web-based instruction (Rha et al., 2005)



With the abovementioned studies and arguments, there is a need to investigate the relationship between flow experience and Web 2.0 tools in a foreign language teaching context. To this end, this study aims to explore the flow experience of both instructors and learners in Web 2.0-based EFL classes in Türkiye. This allows the researcher to compare each side's experience regarding flow and Web 2.0 use in the same context. This study specifically explores the relationship between Web 2.0 tools and flow experiences in EFL classes at a state university in Türkiye from the perspectives of language learners and instructors.

1. To what extent do the instructors and learners use Web 2.0 tools in their EFL classrooms?
2. To what extent do the learners' and instructors' experience flow in Web 2.0-based EFL classes?
3. Is there any difference among learners in terms of the flow experience of students in EFL classrooms related to their English grades (a), daily use of the Internet (b), types of Web 2.0 tools (c), and anxiety levels (d)?

Methodology

Model of the research

The sequential explanatory research design was employed to describe the relationship between the use of Web 2.0 tools and the flow experiences of language learners and instructors in EFL classrooms in Türkiye. This type of research design requires initially collecting the quantitative data and then collecting the qualitative data to elaborate the results of the qualitative data (Creswell & Plano Clark, 2011).

Population and sample

The data were collected at a state university in Türkiye during the first term of the 2021-2022 academic year. To answer the research questions, the probability sampling method was used to select the participants. The total population of EFL learners at the state university is 860 from 27 classes. Nine EFL instructors and 140 EFL learners from a state university in Türkiye participated in the study (Table 1).

Table 1. Demographic information about the EFL learner participants

		Frequency	Percent
Age	19	1	,7
	20	70	50,0
	21	51	36,4
	22	17	12,1
	23	1	,7
	Total	140	100,0
Gender	Male	133	95,0
	Female	7	5,0
	Total	140	100,0

EFL learners had 4 hours of general English lessons with the same curriculum for each section. For their English classes, the students were allowed to use their laptops, and they could connect to the Internet via the Wi-Fi service provided by the institution. All the students had the same curriculum for the English lesson; the EFL instructors were selected from 9 sections to see the relation between students' flow experiences and the instructors' experiences in the same class. Most instructors were female and had 1-5 years of experience. Only one male instructor participated in the study, and he had ten years of experience in teaching. They were actively using the MOODLE-based platform of the institution. Besides this system, the instructors in this study also stated that they were implementing additional Web 2.0 tools in the language classes.

Data collection

Data collection procedures were carried out through both quantitative and qualitative methodology. The data collection process for each research question is summarized below in Table 2.

Table 2. Data collection process

Research Question	Data Collection Tool	Participants
Q1. Use of Web 2.0 Tools in EFL classes.	a. Semi-structured questions of the questionnaire b. Interview Questions	EFL instructors EFL learners
Q2. Flow and Web 2.0 Tools	Flow Short Scale Semi-structured open-ended questions	EFL learners EFL instructors
Q3. Factors Affecting Flow Experience of EFL Learners	Questionnaire	EFL learners

Instruments

Data were collected using a Flow Short Scale and semi-structured interview questions in two steps. The application to the Ethics Committee had been completed before starting the process. After getting permission from the Ethics Committee, the researchers began to collect data with the online version of the Flow Short Scale via the university's Moodle website.

For the quantitative data collection, the version of Flow Short Scale in Turkish (İşigüzel & Çam, 2014) was adapted to get more accurate and reliable data from the participants. Two different versions of the survey were implemented. Semi-structured open-ended questions were asked to participants to give more details on the quantitative data and better understand the participants' opinions about flow experiences with Web 2.0 tools in English language classes. The interview in this study is an adapted version of the one designed by Tardy and Snyder (2004). The participants completed the interview in Turkish to prevent any stress or anxiety resulting from the language barrier.

In this study, member checking and auditing were used to increase the credibility of the qualitative data analysis. One learner and instructor were asked to review the transcriptions and themes to improve accuracy. In this analysis, the inter-rater reliability was .90, which reflected that the raters agreed on the transcriptions' coding process (Gwet, 2014). The research advisor closely analyzed the qualitative data, transcriptions, coding, themes, and translations for this study. The interpretations were completed with the guidance of this analysis.

Data analysis

In this study, the quantitative data was first collected and analyzed, followed by qualitative data collection and analysis. The data was collected in two steps. For each stage, a consent form was collected from the participants. First, the questionnaire was applied to both participants via the Moodle platform. As it is suggested for the experience sampling method, the questionnaires were conducted immediately after using a Web 2.0 tool. The mean, minimum, maximum, and standard deviation scores for flow and anxiety factors in the scale were examined in terms of the descriptive side of the analysis. The researcher cleaned the missing data. The Cronbach's Alpha levels for flow-related items were .89, and for anxiety-related items, were .72, which indicates the things were reliable. Further analysis on SPSS showed that the data were distributed normally ($p > .05$). For the questions related to the flow experiences of the instructors and the students, inferential statistics (independent t-test and one-way ANOVA) were applied.

The interviews were done in face-to-face sessions and recorded. The whole data collection process took four weeks to complete. In the analysis of the interviews, a bottom-up frame was followed. In this 5-step frame, the data was collected, prepared for analysis, read thoroughly, and categorized under codes. Finally, the codes were used to discover the themes (Creswell, 2012). In this study, the researcher transcribed the interviews in this step. As the participants completed the interviews in Turkish as their preference, the related parts in the transcription were translated into English. Finally, after finishing the quantitative and qualitative data analysis, the results were compared to discover whether the results support or contradict each other. As Creswell (2012) suggests, this procedure provides more reliable data by using the strong sides of each research type. It results in a better understanding of the flow experiences of the participants.

Findings

RQ1. To what extent do the instructors and learners use Web 2.0 tools in their EFL classrooms?

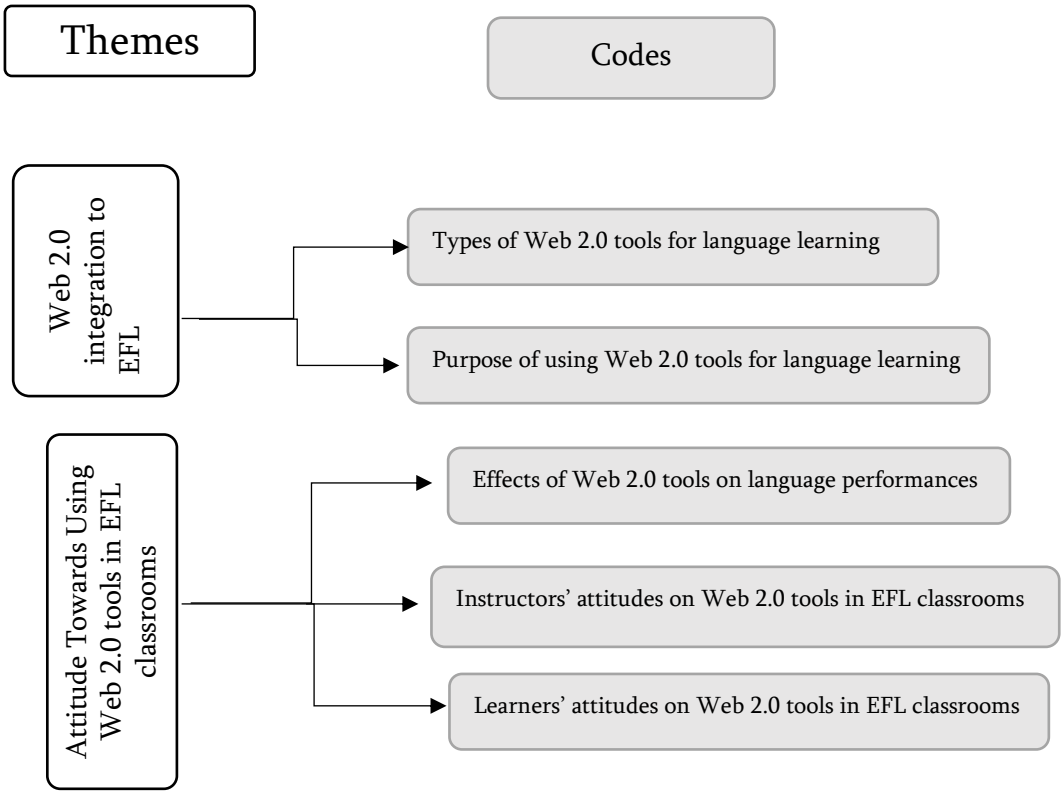
Semi-structured questions in the questionnaire showed that all EFL instructors participating in this study use at least one Web 2.0 tool while teaching English and the following table (Table 3). summarizes the types of tools and their purposes.

Table 3. The use of Web 2.0 tools by the instructors

Participant	Whether using any Web 2.0 tools (a)	Which Web 2.0 tools used in the classroom (b)	For which purposes are the Web 2.0 tools used (c)
INS 1	Yes	Blogs and assessment tools	To increase interaction
INS 2	Yes	Assessment tools	To increase motivation
INS 3	Yes	Assessment tools	To assess students' knowledge
INS 4	Yes	Assessment tools	To evaluate students' knowledge and classroom management
INS 5	Yes	Assessment tools	To assess students' knowledge and for entertainment
INS 6	Yes	Assessment tools	To evaluate students' knowledge
INS 7	Yes	Assessment tools	To increase interaction and visualization, the subject
INS 8	Yes	Interactive tools	To increase interaction
INS 9	Yes	Assessment tools	To assess students' knowledge and to increase interaction

The qualitative data was analyzed to better comprehend the extent of Web 2.0 tools in EFL classrooms. Therefore, the interviews of instructors and learners were coded. The following figure shows the codes and themes of this analysis procedure.

Figure 2. Themes and codes on Web 2.0 use of EFL learners and instructors



Integration of Web 2.0 tools to EFL classrooms

To begin with, all of the instructors stated that they were integrating at least one Web 2.0 tool in their EFL lessons. The most common Web 2.0 tools were video-sharing platforms (i.e., YouTube, Voscreen), online assessment tools (i.e., Quizizz, Kahoot), and brainstorming websites (i.e., Padlet, Mentimeter). Similarly, each EFL learner said they used at least one Web 2.0 tool for language learning. The tools were mostly related to video-sharing websites, streaming platforms (i.e., Netflix), online dictionaries, and language learning platforms (i.e., Duolingo, Cambly).

For the EFL instructors in this study, these tools were used for various reasons, commonly related to raising learners' motivation, increasing interaction, assessing knowledge, teaching different language skills, and brainstorming. Ins1 explained why they were integrating Web 2.0 tools in the EFL classrooms:

> *"Although one of the reasons for using Web 2.0 tools is enhancing the learning process, I think the first purpose is to break the monotonous pace of the lesson, to bring fresh air to the classroom."*

The EFL learners also stated that they were using Web 2.0 tools to raise their motivation by watching English movies and playing language games. They believe these tools help them raise their attention toward the lesson. L1 explained the tools as follows:

> *"Using technology is one of the things I believe the most. Especially, YouTube and applications such as 'Quizizz' get learners' attention".*

To elaborate on the motivational effect of the tools on the learners, L5 stated:

"I am using 'Duolingo' while learning English. For speaking practices, I am using 'Cambly' and watching videos on YouTube and Netflix. With these tools, learning becomes more fun".

The instructors use them to get learners' attention by using different tools to break the monotony during the lesson, sometimes only for fun. Similarly, the learners believe these tools help them focus on the lesson and enjoy learning through educational tools and watching movies on video streaming platforms.

Attitude toward using Web 2.0 tools in EFL classrooms

All of the instructors claimed that the tools positively affect the EFL classroom. The general belief on the effects was related to the motivation of the learners and the instructors. On this subject, Ins1 and Ins4 explained their ideas as follows:

"When I use them (Web 2.0 tools), I see the students' eagerness to participate in the lesson, increasing their motivation. I can see that. In this situation, I also enjoy the lesson. In general, they (Web 2.0 tools) present the students a different experience and bring fresh air into the classroom." Ins1
"The tools increase motivation. With them, the students become more alert to the activity. It (Web 2.0 tool) increases interaction in the classroom. I enjoy using especially the competitive and collaborative tools." Ins4

The instructors also mentioned that these tools allowed them to control the activity and the students better. Ins2 explained this control feeling: "It (Web 2.0 tool) helps me get attention and feel more control over the lesson". Similarly, Ins3 said, "*The tools create a chance for me to observe the classroom while they are working on the activity*."

In addition to teacher training on integrating the tools into the lesson, Ins5 also mentioned teacher training on learning the solutions for possible technical problems and choosing the appropriate content for the lesson. The following citations from the interviews may explain this subject better.

"Firstly, there may be technical problems while using the tools. When I have technical problems while using the tools, I just stop using them not to waste time. Secondly, there are millions of materials on these tools. We need to know how to choose the appropriate one for our class." Ins5
"I think that I do not have enough knowledge on how to use these tools in the classroom. Therefore, I have to prepare more before the lesson. When I am not ready, I feel more anxious. So, I think that teachers should get trained on how to use these tools in the classroom." Ins1

Like the instructors, all learners also stated that Web 2.0 tools positively affected the language learning process. The most common response to the effects was the convenience of the Web 2.0 tools. The learners claimed that the tools had limitless resources in the target language and were practical to reach.

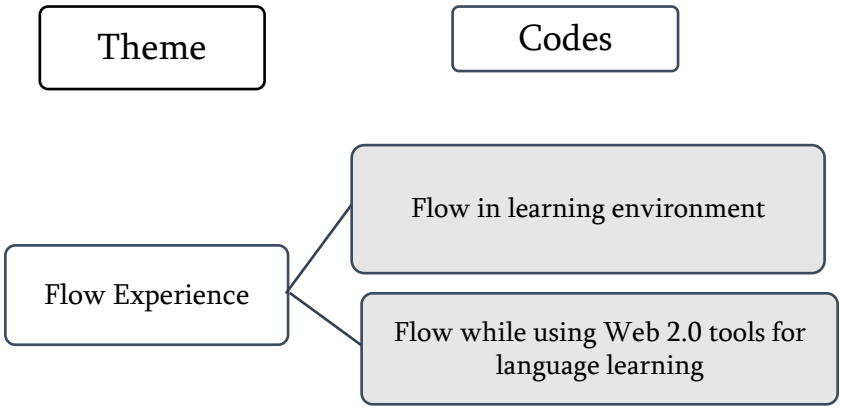
"They are really useful tools. For example, Quizizz helps us evaluate our knowledge. We can see our strengths and weaknesses on the subject. With videos on YouTube, we can learn the pronunciation." L3

"It (Web 2.0 tool) should be used in the classroom as it provides visual and auditory materials for the subject. In this way, we can learn better. These tools help us learn step by step." L5

RQ2. To what extent do EFL learners and instructors experience flow in Web 2.0-based EFL classes?

The interviews were also analyzed to understand better the relationship between learners' flow experiences and Web 2.0 tool-based language lessons. With the analysis of the learners' interviews in line with this research question, the following theme and codes emerged (Figure 3)

Figure 3. Theme and codes on flow experience of EFL learners



EFL learners pointed out that they experienced classroom flow for different reasons. The most common theme for this experience is related to learning new and vital subjects. Regarding using Web 2.0 tools and flow experience in language classrooms, the learners seemed more hesitant to present a direct relationship between these two factors. Most of them stated that they experienced flow while watching videos online via different platforms. Another factor for the experience with Web 2.0 tools was related to the instructors' aptitude for technology. L1 believes that if the instructors are good at adapting technology to the lesson, he can enjoy the lesson and feel motivated.

The interviews with the instructors gave a deeper understanding of their flow experiences. For the flow experience in classrooms, all instructors stated that they experienced it. The conditions for flow experience vary individually, but the most common stimulant for flow experience was interaction in the classroom. For the instructors experiencing flow with Web 2.0 tools, the most common factor was changing the role of the teacher into a facilitator or observer and making the lesson more student-centered.

"Of course, I experience flow with Web 2.0 tools because the students and I enjoy them, especially the interactive ones. However, the students should have the necessary equipment with them. I think this is the only condition." Ins4

Most teachers state that they and their students enjoy using Web 2.0 tools in language classrooms. They feel motivated and participate in the activity. Moreover, the tools allow them to observe the students closely and be facilitators. As for the opposite idea, one instructor stated that the flow experience is mainly related to the class interaction and the students' reactions instead of Web 2.0 tools. However, these tools create more chances to foster student interaction and lead to highly motivated learners.

To understand the flow experiences of the EFL instructors, the items in the flow short scale (FSS) were analyzed via SPSS. The mean value for the flow items in the scale was 5.0 out of a seven-point Likert scale. For the instructors experiencing flow with Web 2.0 tools, the most common factor was changing the role of the teacher into a facilitator or observer and making the lesson more student-centered. The conditions for flow experience vary individually, but it can be seen that the most common stimulant for flow experience was interaction in the classroom.

> *"I definitely have similar experiences to this. Sometimes, my students warn me about the time. I also heard them saying they did not understand how the lesson finished. So, I can say that my students and I sometimes experience flow. Generally, I experience it when there is an interaction in the classroom between my students and me." Ins1*
> *"When I prepare materials and activities before the lesson, I feel highly motivated and eager to do them in the class." Ins3*
> *"When I teach grammar, I have this experience because it is just giving the content, asking some questions, and showing the structure. I do not understand how time passes in these lessons. I also have experience when I grade students' papers. However, the learners' language skills must be above a certain level." Ins4*
> *"Of course, I experience flow with Web 2.0 tools because the students and I enjoy them, especially the interactive ones. However, the students should have the necessary equipment with them. I think this is the only condition." Ins4*

On the contrary, one instructor states that the flow experience is mainly related to the class interaction and the students' reactions instead of Web 2.0 tools.

RQ3. Are there any differences among EFL learners in terms of the flow experience of students in EFL classrooms related to EFL learners' English grades (a), learners' daily use of the Internet (b), the types of Web 2.0 tools that the learners use (c), and anxiety levels (d)?

The questionnaires for both the learners and the instructors include open-ended questions. The learners' questionnaires aimed to find out whether there is a statistical difference between their flow experiences and their English grades from the previous academic year: (a) their daily use of the Internet per day, (b) the types of Web 2.0 tools they use, and (c). The data were transferred into the SPSS program and analyzed.

EFL learners' English grades and flow Experience relation

Initially, the results were categorized according to the learners' success in the target lesson. This was decided by considering the university's grading system in which the data was

collected. Concerning this, the participants were categorized under three headings: 70 and less (1), between 71 and 79 (2), and 80 and above (3). As 70 is the lowest score for an academically accepted grade to be successful in the lesson, it was chosen to determine one of the groups. The number of participants in each group and their flow mean scores are presented in Table 4 below.

Table 4. The flow mean scores according to the academic success of the EFL learners

English Scores	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
70 and less	33	3,6091	1,22203	,21273	1,30	5,70
71-79	40	3,8225	1,05332	,16654	1,70	6,20
80 and above	67	4,3149	1,29149	,15778	1,70	6,80
Total	140	4,0079	1,24103	,10489	1,30	6,80

The results of ANOVA revealed a statistically meaningful difference between the groups (F=4.41, df=2.147, p=0.01). Therefore, Tukey's post hoc test analysis was applied to understand which groups differed (Table 5).

Table 5. Multiple Comparisons
Tukey HSD

(I) INGNOTKTG3	(J) INGNOTKTG3	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
70 and less	71-79	-,21341	,28495	,735	-,8886	,4618
	80 and above	-,70583*	,25769	,019	-1,3164	-,0952
71-79	70 and less	,21341	,28495	,735	-,4618	,8886
	80 and above	-,49243	,24211	,108	-1,0661	,0812
80 and above	70 and less	,70583*	,25769	,019	,0952	1,3164
	71-79	,49243	,24211	,108	-,0812	1,0661

*. The mean difference is significant at the 0.05 level.

Tukey's test revealed a significant difference between groups 1 (70 and less) and 3 (80 and above), with flow mean scores of 3.6 and 4.3.

The types of Web 2.0 tools that the learners use

The EFL learners in this research study stated that they were using various Web 2.0 tools for language learning as they found the tools beneficial for their progress in English. After coding the answers for the types of Web 2.0 tools, namely "educational web tools, social media, online dictionaries, and others," the relation between flow experience and the types of tools was analyzed with a one-way ANOVA test. The number of learners and the mean scores according to the Web 2.0 tools were illustrated in the table (Table 6).

Table 6. Frequencies of the types of Web 2.0 tools used by EFL learners

Types of Web 2.0 Tools	Responses N	Responses Percent	Percent of Cases
Educational Web Tools	33	21,2%	27,5%
Social Media	79	50,6%	65,8%
Online Dictionary	15	9,6%	12,5%
Others	29	18,6%	24,2%
Total	156	100,0%	130,0%

a. Group

A one-way ANOVA test was applied to see whether there was a statistical difference between the types of Web 2.0 tools and the flow experience of the participants. The results showed no significant difference between the Web 2.0 tools types and flow experiences (F=.546, df=3, p=.652).

Anxiety levels of EFL learners

The last three items of the Flow Short Scale were used to measure the participants' anxiety levels. To understand whether there is a statistically meaningful difference between these two factors, a one-sample T-test was run on the 140 EFL learners' data. The flow mean score for the EFL learners was 4.0, and the anxiety mean score was 3.64. Moreover, the test showed a meaningful statistical difference ($p < .05$).

Discussion

This study found that the EFL instructors were aware of the importance of ICT tools in language education and used Web 2.0 tools in their language classrooms as a part of the language teaching process. As in Albion's study (2008), language teachers care about ICT and try to adapt Web 2.0 tools to their language lessons. It is clear that the language instructors, including the ones who participate in this study, believe that Web 2.0 tools create more interaction in the classroom by helping the learners create a product, which results in high motivation and information (Huffman, 2017; Lu et al., 2010). For the instructors, it can be understood that the most common factor of flow experience is losing track of time. The interviews show that the instructors feel more concentrated and motivated when they are teaching a subject that they are highly familiar with. This causes another flow factor, the sense of control, leading to better classroom management and monitoring of the learners' performances.

Moreover, flow is experienced primarily during teacher-student interaction in the classroom. In addition to these purposes, 11% of the EFL instructors used Web 2.0 tools for classroom management, visualizing the materials, and only entertainment elements. Like the learners, language instructors find lessons based on these tools more entertaining than conventional lessons (Karaman et al., 2008; Thompson, 2007).

Parallel to the related studies in the literature, it can be stated that EFL instructors use Web 2.0 tools in their language classrooms for motivation boosts, increase interest in the subject, and practice activities on language skills (Barrot, 2016; Grant, 2016; Ke & Cahyani, 2014). Like

Kumar and Vigil's (2011) statement, teachers were eager to implement Web 2.0 technologies in their classrooms. Moreover, the tools are used to teach and practice different language skills in the lesson by creating a more communicative classroom environment (Kavaliauskienė & Anusienė, 2009; Özel, 2013). Raising the motivation in the classroom was the most common reason for the instructors. This result parallels the idea that the game elements in these tools create more flow in learners and improve their performances (Admiraal et al., 2011). This finding matches with the literature as it shows that learners use the tools to access information easily (Rahimi et al., 2015) and shape their learning methods with them (Cochrane, 2014). As Shishkovskaya and Sokolava (2015) stated, learners believe that these tools provide a variety of resources in the target language and can benefit from them to improve their communication skills.

Instructors emphasized the importance of Web 2.0 training. This corresponds with the previous studies, which state the importance of being competent in integrating the tools in the classroom effectively (Smith & Dobson, 2011). As the previous studies show (Alayyar, 2011; Koehler & Mishra, 2005), with enough training, instructors believe that they become more confident about finding the correct tool for their classes to use productively. Moreover, two instructors (Ins1 and Ins5) stated that they would feel more anxious when they did not know enough about the Web 2.0 tools they used. These findings match the previous studies regarding teachers' lack of confidence in implementing the tools to the lesson (Göktaş et al., 2009).

Similarly, EFL learners have positive attitudes towards Web 2.0 tools in language learning. As mentioned above, they believe these tools have constructive effects on their language-learning process. As Aşıksoy (2018) revealed, language learners mostly use tools to develop their listening skills. YouTube and social media are among the most popular Web 2.0 tools in this subject (50.6%), and with it, learners can watch videos in different accents of the target language (Duffy, 2009; Watkins & Wilkins, 2011). While watching a movie or TV series in the target language, the learners seem highly motivated and lose themselves in the activity. In entertaining language activities, the learners feel a sense of control and tend to interact with them (Amini et al., 2016). This may be interpreted as the importance of the lesson design on learners' motivation. Enjoyment and intrinsic motivation lead to flow experience and high performance (Csikszentmihalyi, 1990, 1997). They are using different tools for this process. Among the learners in this study, 21.2% of them are using educational tools such as Quizizz or Kahoot; 50.6% use Social Media tools (i.e., Instagram); 9.6% use online dictionaries, and 18.6% of them use different tools such as Netflix, YouTube, and Grammarly.

For the EFL instructors' flow experience, the mean value for the flow items in the scale was 5.0. This can be interpreted as the EFL instructors feeling flow while implementing Web 2.0 tools in EFL classrooms. This finding supports the previous studies regarding flow experience in language classrooms (Egbert, 2004; Tardy & Snyder, 2004). In addition, this result also supports the idea that flow and Web 2.0 tools have a positive correlation. Similar to the marketing studies proving the relationship between Web use and flow experience (Chen et al., 2000), the amusing features of the tools may lead to flow in language classrooms. As the previous studies stated, a high motivation level helps learners participate more in language activities (Deci & Ryan, 1985; Sternberg, 2002). It can be understood that they felt motivated and concentrated on integrating the tools. Jones (1998) stated that a computer-based learning environment may lead to higher motivation and participation in the classroom and flow experience.

The learners with higher academic scores experienced more flow (4.3 mean score) than those with low grades (3.6 mean score) in English. This can be linked to the students' levels in English and the demands of the language task they were assigned. Egbert (2004) explained that for the flow experience in language classrooms, the tasks should have clear goals, and the level of challenge should be appropriate for the learners' language skills. Thus, the challenge and the skills balance were provided for the high achievers in the classroom. Moreover, from the T-test, it can be understood that there was a statistically meaningful difference between anxiety levels and flow experiences of the EFL learners in correlation to their English scores (F=.535, df=98, p=.01). This can be interpreted as EFL learners who had higher English scores may feel less anxious about the lessons.

In contrast, the less successful learners felt more anxious. Furthermore, it is the same for their flow experiences. More successful learners in English had more flow experience, while the less successful ones had less. As Allison and Duncan (1988) revealed, flow experience and anxiety are inversely related, and to increase learners' performance, anxiety should be reduced (Dörner et al., 2016). Therefore, teachers must balance the task's demands and learners' language skills to provide a classroom flow experience (Shernoff et al., 2014).

Conclusion

The main objective of this study was to find out the relationship between flow experience and using Web 2.0 tools in university EFL language classrooms. Web 2.0 tools have been widely implemented in language courses, especially in the last decade. The effects of using these tools have been examined in various aspects. This study reveals a positive correlation between using Web 2.0 tools in language classrooms and the flow experiences of EFL language learners and instructors in a university. It is clear that university EFL learners are aware of these Web 2.0 tools and use them for different purposes in language learning. This study reveals that these tools increase the learners' intrinsic motivation toward practicing the language. As Egbert (2004) suggests, designing the language tasks to promote a flow experience in the classroom would increase the learners' participation and their language performances. Therefore, it may be helpful for educators to adapt these tools to their language lessons to increase the flow experience of the learners and the interaction in the classroom. These flow experiences of learners are not affected by time spent on daily internet use or the type of Web 2.0 tools; however, learners' academic success may affect their flow experiences. This may relate to the anxiety level of the students. More successful students tend to experience more flow, while others feel anxiety and less flow in the classroom. Language instructors are familiar with the tools used for language teaching, and they implement them in their language classrooms. They believe that these tools help motivate the students and increase the interaction in the classroom. Nevertheless, training educators on how to use Web 2.0 tools effectively in the classroom may be essential. From this study, training on designing a Web 2.0-based language lesson for EFL instructors would be beneficial for increasing both instructors' and learners' performances in the classroom.

This study investigated the relationship between Web 2.0 tools and the flow experiences of university EFL learners and instructors. The study was limited to a particular context and participants with similar demographic backgrounds. Further research is needed to discover the differences among more diversified learner groups, younger learners, and language teachers. In

addition, the flow experience can be linked to other language skills and components for further investigation.

References

Abbott, J. A. (2000). "Blinking out" and "having the touch": Two fifth-grade boys talk about flow experiences in writing. *Written Communication*, *17*(1), 53–92. https://doi.org/10.1177/0741088300017001003

Admiraal, W., Huizenga, J., Akkerman, S., & Dam, G. T. (2011). The concept of flow in collaborative game-based learning. *Computers in Human Behavior*, *27*(3), 1185-1194.

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, *11*(2), 71-80.

Alayyar, G. M. (2011). *Developing preservice teacher competencies for ICT integration through design teams* [Doctoral dissertation, University of Twente]. https://doi.org/10.3990/1.9789036532341

Albayrak, E., & Kıyıcı, M. (2017). Bilgisayar ve öğretim teknolojileri eğitimi bölümü öğrencilerinin kişilik tiplerine göre web 2.0 araçlarını kullanım durumları. *Turkish Journal of Computer and Mathematics Education* (TURCOMAT), *8*(3), 481-512. [The use of web 2.0 tools according to the personality types of the students of the department of computer and instructional technology education]

Albion, P. R. (2008). Web 2.0 in teacher education: Two imperatives for action. *Computers in the Schools*, *25*(3-4), 181-198.

Al-Kadi, A. (2018). A review of technology integration in ELT: From CALL to MALL. *Language Teaching and Educational Research (LATER)*, *1*(1), 1–12.

Allison, M. T., & Duncan, M. C. (1988). Women, work, and flow. In M. Csikszentmihalyi & I. S.Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 118–137). Cambridge University Press.

Aşıksoy, G. (2018). Elt students' attitudes and awareness towards the use of Web 2.0 technologies for language learning. *Journal of Language and Linguistic Studies*, *14*(2), 240-251.

Aubrey, S. (2017). Inter-cultural contact and flow in a task-based Japanese EFL classroom. *Language Teaching Research*, *21*(6), 717–734.

Azizi, Z., & Ghonsooly, B. (2015). Exploring flow theory in TOEFL texts: Expository and argumentative genre. *Journal of Language Teaching and Research*, *6*(1), 210–215.

Barrot, J. (2016). Using Facebook-based e-portfolio in ESL writing classrooms: impact and challenges. *Language, Culture and Curriculum*, *29*(3), 286–301.

Başer, G. (2011). *Elementary teachers' perceptions towards ICT integration in teaching and learning process: an explanatory mixed method*. [Unpublished doctoral dissertation]. Middle East Technical University

Belce, Ö. (2019). *Flow experiences of EFL instructors in Turkey*. [Doctoral dissertation, Bilkent University]. Council of Higher Education Thesis Center.

Chen, H., Wigand, R. T., & Nilan, M. (2000). Exploring web users' optimal flow experiences. *Information Technology & People. 13*(4), 263–281.

Çıldır, M., & Koçak, M. (2022). Web 2.0 araçlarinin ikinci yabanci dil almanca dersinde kullanilmasina yönelik öğrenci görüşleri. *Alman Dili ve Kültürü Araştırmaları Dergisi, 4*(7) , 52-88. https://doi.org/10.55143/alkad.1033123 [Student opinions on the use of Web 2.0 tools in the second foreign language German lesson] [German Language and Culture Research Journal]

Cochrane, T. D. (2014). Critical success factors for transforming pedagogy with mobile Web 2.0. British *Journal of Educational Technology*, *45*(1), 65-82. https://doi.org/10.1111/j.1467-8535.2012.01384.x

Creswell, J. W. (2012). *Educational research: planning, conducting, and evaluating quantitative and qualitative research.* Pearson.

Creswell, J. W., & Plano Clark, V. L. (2011). Designing and conducting mixed methods research (2nd ed.). Sage.

Crook, C. (2008). Web 2.0 technologies for learning: the current landscape opportunities, challenges, and tensions, Coventry, Becta.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety.* Jossey-Bass Publishers.

Csikszentmihalyi, M. (1996). *Flow and the psychology of discovery and invention*. HarperPerennial.

Csikszentmihalyi, M. (1997). Flow and education. *NAMTA Journal*, *22*(2), 2-35.

Csikszentmihalyi, M., & LeFevre, J. (1989). Optimal experience in work and leisure. *Journal of Personality and Social Psychology*, *56*(5), 815-822.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1992). *Optimal experience: Psychological studies of flow in consciousness.* Cambridge University Press.

Csikszentmihalyi, M., & Nakamura, J.(2014). The concept of flow. In *Flow and the foundations of positive psychology* (pp. 239-263). Springer.

Deci, E. L., & Ryan, R. (1985). Toward an organismic integration theory: motivation and development. *Intrinsic motivation and self-determination in human behavior*, 113-148.

Dörner, R., Göbel, S., Effelsberg, W., & Wiemeyer, J. (Eds.). (2016). *Serious games: Foundations, concepts and practice.* Springer International Publishing. https://doi.org/10.1007/978-3-319-40612-1

Dörnyei, Z. (1994). Motivation and motivation in the foreign language classroom. *The Modern Language Journal*, *78*(3), 273–284.

Duchesne, S., & McMaugh, A. (2016). *Educational psychology for learning and teaching.* Cengage AU.

Duffy, P. (2009). Engaging the YouTube Google-eyed generation: strategies for using web 2.0 in teaching and learning. *Electronic Journal of e-Learning*, *2*(6), 119–129.

Egbert, J. (2004). A study of flow theory in the foreign language classroom. *The Modern Language Journal*, *pp. 87*, 499–518.

Göktaş, Y., Yildirim, Z., & Yildirim, S. (2009). Main barriers and possible enablers of its integration into preservice teacher education programs. *Educational Technology & Society, 12*(1), 193–204. https://eric.ed.gov/?id=EJ833426

Grant, S. (2016). Peer review process completion rates and subsequent student perceptions within completely online versus blended study modes. *System*, *62*(1), 93–101.

Grosseck, G. (2009). To use or not to use Web 2.0 in higher education?. *Procedia-Social and Behavioral Sciences, 1*(1), 478-482.

Guan, X. (2013). A study on flow theory and translation teaching in China's EFL class. *Journal of Language Teaching & Research*, *4*(4), 785-790.

Gwet, K. L. (2014). Handbook of inter-rater reliability: The definitive guide to measuring the extent of agreement among raters. *Advanced Analytics*, LLC.

Huang, H. C., Pham, T. T. L., Wong, M. K., Chiu, H. Y., Yang, Y. H., & Teng, C. I. (2018). How to create flow experience in exergames? Perspective of flow theory. *Telematics and Informatics, 35*(5), 1288-1296.

Huffman, K. (2017). Web 2.0: Beyond the concept, practical ways to implement RSS, podcasts, and Wikis. *Education Libraries*, *29*(1), 12-19.

İşigüzel, B., & Çam, S. (2014). The adaptation of Flow Short Scale to Turkish: A validity and reliability study, *Journal of Human Sciences*, *11*(2), 788-801.

Jackson, S. A. (1996). Toward a conceptual understanding of the flow experience in elite athletes. *Research Quarterly for Exercise and Sport*, *67*(1), 76-90.

Jones, M. G. (1998, February). *Creating electronic learning environments: games, flow, and the user interface* [Paper presentation]. Association for Educational Communications and Technology, St. Louis, MO.

Karaman, S., Yıldırım, S., & Kaban, A. (2008). *Öğrenme 2.0 yaygınlaşıyor: Web 2.0 uygulamalarının eğitimde kullanımına ilişkin araştırmalar ve sonuçları* [Paper presentation]. III. Türkiye'de İnternet Konferansı Bildirileri 22-23 Aralık 2008 Orta Doğu Teknik Üniversitesi, Ankara. [Learning 2.0 is becoming widespread: Research and results on the use of Web 2 0 applications in education] [The third Internet Conference of Turkey Papers December 22nd-23rd 2008 Middle East Technical University]

Kavaliauskienė, G., & Anusienė, L. (2009). English for specific purposes: Podcasts for listening skills. *Santalka. Filologija. Edukologija, 17*(2) 28-37. https://doi.org/10.3846/1822-430X.2009.17.2.28-37

Ke, I. C., & Cahyani, H. (2014). Learning to become users of English as a Lingua Franca (ELF): How ELF online communication affects Taiwanese learners' beliefs of English. *System*, *46*, 28-38.

Kim, D., & Ko, Y. J. (2019). The impact of virtual reality (VR) technology on sport spectators' flow experience and satisfaction. *Computers in Human Behavior*, *93*, 346-356.

Kirchhoff, C. (2013). L2 extensive reading and flow: Clarifying the relationship. *Reading in a Foreign Language*, *25*(2), 192-212.

Koehler, M. J., & Mishra, P. (2005). What happens when teachers design educational technology? The development of technological pedagogical content knowledge. *Journal of Educational Computing Research, 32*(2), 131-152.

Kumar, S., & Vigil, K. (2011). The net generation as preservice teachers. *Journal of Digital Learning in Teacher Education*, *27*(4), 144-153. https://doi.org/10.1080/21532974.2011.10784671

Kutlutürk, L., & Akbayrak, E. H. (2013, September). *Akademik araştırmalarda Web 2.0 etkisi* [Paper presentation]. ÜNAK 2013 Conference, İstanbul, Türkiye [The Web 2.0 effect on acamedic research]

Larson, R. (1988). Flow and writing. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness* (pp. 150–171). Cambridge University Press.

Lu, J., Lai, M., & Law, N. (2010). Knowledge Building in Society 2.0: Challenges and Opportunities. In: Khine M., Saleh I. (eds) *New Science of Learning*. Springer, New York, NY

Novak, T. P., & Hoffman, D. L. (1997). Measuring the flow experience among web users. *Interval Research Corporation*, *31*(1), 1-35.

Novak, T. P., Hoffman, D. L., & Yung, Y. F. (1999). Measuring the flow construct in online environments: A structural modeling approach. Wp, Vanderbilt University http://www2000. ogsm. vanderbilt. edu, 1-48.

Özel, A. G. (2013). *The use of the Internet and Web 2.0 tools among EFL instructors* (Publication No. 354625) [Master's thesis, Akdeniz University]. Council of Higher Education Thesis Center.

Öztürk, Ö. (2017). *An investigation of English lecturers' attitudes toward information and communication technologies (ICT) and their use of technology* (Publication No. 501518) [Master's thesis, Uludağ University]. Council of Higher Education Thesis Center.

Rahimi, E., Van den Berg, J., & Veen, W. (2015). Facilitating student-driven construction of learning environments using Web 2.0 personal learning environments. *Computers & Education*, *81*, 235-246. https://doi.org/10.1016/j.compedu.2014.10.012

Rha, I., Williams, M. D., & Heo, G. (2005). Optimal flow experience in web-based instruction. *Asia Pacific Education Review*, *6*(1), 50-58.

Rotto, L. I. (1994, February). *Curiosity, motivation, and "flow" in computer-based instruction* [Paper presentation]. Association for Educational Communications and Technology, Nashville, TN.

Ryan, R. M., & Deci, E.L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, *25*, 54-67.

Schmidt, R., & Savage, W. (1992). Challenge, skill, and motivation. PASAA, *2*(2), 14–28.

Shernoff, D. J., Tonks, S., & Anderson, B. G. (2014). The impact of the learning environment on student engagement in high school classrooms. *National Society for the Study of Education*, *113*(1), 166–177.

Shishkovskaya, J. V., & Sokolava, E. Y. (2015). Integration of Web 2.0 technologies into the process of students' self-directed English learning. *Mediterranean Journal of Social Sciences*, *6*(2), 541-545. https://doi.org/10.5901/mjss.2015.v6n2p541

Smith, D. N., & Sivakumar, K. (2004). Flow and Internet shopping behavior: A conceptual model and research propositions. *Journal of Business Research*, 57(10), 1199-1208.

Smith, J., & Dobson, E. (2011): Beyond the Book: Using Web 2.0 Tools to Develop 21st Century Literacies, *Computers in the Schools*, 28:4, 316-327

Sternberg, R. J. (2002). What does it mean to be smart? *California Journal of Science Education*, *2*(2), 99.

Şahin Kızıl, A. (2015). Investigating the impact of wikis on writing performance of EFL students. In H. Oz (Ed.), L*anguage and communication research around the globe*: *Exploring untested ideas*. 103–126

Tardy, C. M., & Snyder, B. (2004). 'That's why I do it': flow and EFL teachers' practices. *ELT Journal*, *58*(2), 118-128.

Thompson, J. (2007). Is Education 1.0 ready for Web 2.0 students? Innovate: *Journal of Online Education*, *3*(4), 1-6.

Trevino, L., & Webster, J. (1992). Flow in computer-mediated communication: Electronic mail and voice mail evaluation and impacts. *Communication Research*, *19*, 539-573.

Walberg, H. J., & Haertel, G. D. (1992). Educational psychology's first century. *Journal of Educational Psychology*, *84*(1), 6.

Watkins, J., & Wilkins, M. (2011). Using YouTube in the EFL classroom. *Language Education in Asia*, *2*(1), 113-119. https://doi.org/10.5746/LEiA/11/V2/I1/A09/Watkins_Wilkins

Webster, J., & Martocchio, J. J. (1993). Turning work into play: Implications for microcomputer software training. *Journal of Management*, *19*(1), 127-146

Language Teaching and Educational Research

e-ISSN 2636-8102

Volume 6, Issue 2 | 2023

Determining the Strategies Used by Teachers Working with Students with Intellectual Disabilities in Teaching Reading Comprehension

Yasin Günlü
Çağla Özgür Yılmaz

To cite this article:

Günlü, Y., & Özgür-Yılmaz, C. (2023). Determining the strategies used by teachers working with students with intellectual disabilities in teaching reading comprehension. *Language Teaching and Educational Research (LATER), 6*(2), 143-159. https://doi.org/10.35207/later.1309351

LATER
http://dergipark.org.tr/later
Language Teaching and Educational Research
e-ISSN: 2636-8102 *LATER*, 2023: 6(2), 143-159
Turkish JournalPark ACADEMIC

Research Article

Determining the strategies used by teachers working with students with intellectual disabilities in teaching reading comprehension

Yasin Günlü ORCID
Dr., Research Assistant, Special Education Department, Faculty of Education, Aksaray University, TURKIYE
Çağla Özgür-Yılmaz* ORCID
Dr., Research Assistant, Special Education Department, Faculty of Education, Aksaray University, TURKIYE

Abstract

The general purpose of this study was to define the strategies used by teachers working with students with intellectual disabilities in teaching them reading comprehension. In line with this general purpose, the study sought to find out which cognitive and metacognitive strategies these teachers working used before, during and after reading in reading comprehension activities in the classroom. The study used semi-structured interviews, one of the data collections techniques employed in qualitative studies. Interviews were conducted with 13 special education teachers working with students with mild intellectual disabilities. These students are educated at a special education and practice school high school. The data obtained from the teachers were analyzed using descriptive analysis. The findings obtained as a result of this analysis showed that special education teachers used a limited number of strategies in teaching reading comprehension.

Received
3 June 2023

Accepted
28 August 2023

Keywords
Special education
Intellectual disability
Reading comprehension
Strategy usage

Suggested APA citation: Günlü, Y., & Özgür-Yılmaz, C. (2023). Determining the strategies used by teachers working with students with intellectual disabilities in teaching reading comprehension. *Language Teaching and Educational Research (LATER), 6*(2), 143-159. https://doi.org/10.35207/later.1309351

Note(s) from the author(s)
» *Corresponding author

Author(s)' statements on ethics and conflict of interest
Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.
Statement of interest: We have no conflict of interest to declare.
Funding: None
Acknowledgements: None

Introduction

As an interactive process involving both the reader and the text (Alyousef 2005), reading is considered a prerequisite for academic skills. The skill of reading consists of the processes of first decoding and then understanding or comprehension (Ozmen & Vayiç, 2007; Solis, M., Kulesz, P., & Williams, K. (2022); Fälth, L., Selenius, H., & Egerhag, H. (2023). "Decoding" can be defined as the transformation of written symbols into sounds (Guldenoglu, Kargin, & Ergül, 2016; Hoover & Gough 1990). As individuals become able to decode a text automatically, which is the first stage in being able to read, understanding the text is the next step. "Reading comprehension", which is the ultimate goal of reading, refers to the situation in which new ideas are ultimately transmitted to the reader through connecting their past knowledge with the information communicated in the text (Lipson & Wixson, 2009).

Reading comprehension is thus a complex process that involves advanced skills, including the ability to anticipate or predict what will be found in the text, to locate the main idea or theme, to ask questions, to establish relationships between units of information and to summarize and organize this information, and it thus requires the simultaneous use of cognitive and metacognitive strategies (Alexander & Jetton, 2000; Baker & Brown, 2002; Gersten, Fuchs, Williams, & Baker, 2001; Westby, 2004).

There are a number of strategies that competent readers use before, during and after reading in order to succesfully understand a text (Doganay-Bilgi & Ozmen, 2014). Strategies that can be applied for effective comprehension include (a) skimming the text before reading, thereby identifying the aim, structure, length and level of difficulty of the text, (b) rereading a sentence or paragraph that has not been immediately understood, slowing down the pace of reading, going back, identifying unknown words, taking notes, underlining important information, narrating and summarizing the text to themselves and others, and (c) cognitive and metacognitive strategies such as reviewing the text, rereading the parts that were not understood, asking questions about the text, and self-evaluation after reading (Bishop, Reyes, & Pflaum, 2006; Johnson, Graham, & Harris, 1997; Pressley & Gaskins, 2006). Within this framework, cognitive and metacognitive strategies are often addressed together in teaching reading comprehension strategies before, during and after reading (Pressley & Hilden, 2002).

Studies have indicated that students with normal development are able learn these strategies more easily, while students with special needs often do not know what these strategies are, and even if they do, they do not know how to use them (Gersten et al., 2001). The inability of students with special needs to use these strategies causes their reading comprehension to be at a lower level than that of their peers (Gersten et al., 2001).

One of the groups of students with special needs who have problems in reading comprehension skills is students with intellectual disabilities (Ozmen, 2011). It is a known fact that students with intellectual disabilities have problems in identifying important information in the texts they read and making connections between pieces of information (Guzel, 1999; Eripek, 2005). A study conducted by Eripek (1987) with students with intellectual disabilities found that these students had learned to read in the first and second grades, but it was concluded that they needed support in terms of reading comprehension skills. There are two important factors to consider when teaching reading comprehension skills to students with intellectual disabilities. One is that these students may not have full reading comprehension skills, and the

other is that these students may not have been taught effective ways of comprehending texts before (Guler, 2008).

Teachers are the most important element in helping students acquire effective reading comprehension skills. Teachers working with students with intellectual disabilities are expected to teach reading comprehension individually or in small groups by using evidence-based interventions in the classroom. An examination of the literature reveals that techniques such as teaching and reinforcing skills, text reinforcers, questioning strategies, text structure-based strategies, and multi-item strategies or instructional packages are all used in reading comprehension instruction (Mastropieri & Scruggs, 1997).

Studies have shown that when children with intellectual disabilities are taught cognitive and metacognitive strategies for reading comprehension, they can use these skills in their reading (Doganay-Bilgi & Ozmen, 2014; Guler, 2008; Guldenoglu & Kargin, 2012; Swanson & Trahan, 1996; Yucesoy & Cure, 2018). In this respect, it is important for teachers working with students with intellectual disabilities to teach specific cognitive and metacognitive strategies using the right methods and approaches. A literature review shows that only a limited number of studies has been conducted on teaching reading comprehension to students with intellectual disabilities. In these studies, story map teaching (Duman, 2006; Ozmen, 2011; Işıkdoğan & Kargin, 2010), multi-item cognitive strategy teaching (Doganay-Bilgi, 2010; Guldenoglu, 2008), direct instruction (Flores & Ganz, 2007; Guzel, 1998) and strategy teaching (Guler, 2008) were used to teach reading comprehension skills to students with intellectual disabilities.

The use of these methods, which have proven to be effective in helping students acquire reading comprehension skills, by teachers in classroom settings has always been a subject of academic discussion. As many researchers have emphasized, the question of how effective interventions prepared on scientific grounds acutally are in real-world environments is still open. This study thus aimed to define strategies used by teachers working with students with intellectual disabilities on reading comprehension. The study will reveal which strategies teachers use while teaching reading comprehension to students with intellectual disabilities and how they use them. Therefore, we believe that the findings of this study will help in the design of in-service training on reading comprehension skills for teachers working with students with intellectual disabilities. In line with this general purpose, the study sought to establish which cognitive and metacognitive strategies teachers working with students with intellectual disabilities used before, during and after reading exercises in the classroom. The study had three sub-objectives. The first was to determine the pre-reading cognitive and metacognitive strategies used by teachers working with students with intellectual disabilities in reading comprehension activities in the classroom. The second sub-objective was to determine the reading order cognitive and metacognitive strategies used in this context. The third sub-objective was to determine the post-reading cognitive and metacognitive strategies used.

Methodology

Model of the study

This study utilized the interview technique, one of the data collection techniques used in qualitative studies. The interview technique, which is based on data collection through verbal communication, can be conducted in three ways – structured, unstructured or semi-structured –

according to the strictness of the rules being followed (Karasar, 2012). This study was conducted using semi-structured interviews.

Population and sample

The participant group of the study consisted of 13 special education teachers working with students with mild intellectual disabilities at the third level of a special education and practice school. The teachers agreed to participate in the study voluntarily. Descriptive statistics about the characteristics of the teachers are presented in Table 1.

Table 1. Descriptive statistics for teachers' characteristics

Teacher	Gender	Age (Yr.)	Professional experience (Yr.)	Graduating institution	Department
A.	Female	50	21	Cumhuriyet University	Elementary Teaching
B.	Male	27	3	Necmettin Erbakan University	Special Education
C.	Female	47	16	Ankara University	Elementary Teaching
D.	Female	34	2	Necmettin Erbakan University	Special Education
E.	Female	32	10	Ondokuz Mayis University	Special Education
F.	Male	42	20	Abant izzet Baysal University	Special Education
G.	Male	27	2	Necmettin Erbakan University	Special Education
H.	Female	39	18	Anadolu University	Special Education
İ.	Female	38	12	Balikesir University	Elementary Teaching
J.	Female	46	8	Anadolu University	Special Education
K.	Female	27	6	Sakarya University	Special Education
L.	Female	32	10	Gazi University	Special Education
M.	Female	40	9	Agrı University	Elementary Teaching

As seen in Table 1, three of the teachers participating in the study were male and 10 were female. The age of the teachers ranged between 32 and 50 years, and their professional experience ranged between two and 21 years. Nine of the teachers participating in the study had graduated from Special Education undergraduate programs. Four of the teachers were graduates in Elementary School Teaching. They were included in the study because they had completed the Special Education Certificate Program at Gazi University.

Data collection tool

Two data collection tools, namely a "personal information form" and a "semi-structured interview form" were used in the study. Semi-structured interviews were used to determine the cognitive and metacognitive strategies used by the teachers before, during and after reading, and to obtain in-depth information. The Personal Information Form, included questions about the participants' gender, age, university graduated from, department and professional experience. The semi-structured interview form, which was developed by the researchers, consisted of 11 open-ended questions to determine the reading comprehension strategies used before, during and after reading. The semi-structured interview form was prepared in the following stages:

a) *Preparation of the question pool*: The researchers conducted a literature review and examined studies on reading comprehension skills and prepared a question pool consisting of 15 questions.

b) *Obtaining expert opinions*: An expert opinion form was prepared stating the purpose of the study and including the question pool. The first part of the form consisted of three columns, with the question in the left column, a space for "yes" and "no" answers in the middle column, and a space for "explanations" in the right column. The questions were emailed to three experts, two of whom had completed their doctorate in special education and one of whom completed their doctorate in measurement and evaluation in education. They were asked to examine the questions one by one and give their opinions.

c) *Organization of the semi-structured interview form.* The researchers examined the feedback from the experts and the necessary amendments were made. The form, which consisted of 12 questions in total, was then pilot-tested with a teacher who worked with students with intellectual disabilities but was not included in the participant group.

d) *Pilot implementation.* The first author posed the questions to the abovementioned teacher and asked her to evaluate the comprehensibility of each question. During the interview the teacher said that one of the questions was not understandable, so it was re-examined and it was found that there would be no problem removing it from the form, so this question was deleted.

e) *Final semi-structured interview form.* The semi-structured interview form consisting of 11 questions was finalized after the expert opinion and the pilot interview.

The questions in the semi-structured interview form are given below:

1. What kind of activities do you use when teaching reading comprehension to your students?
2. What activities do you do for reading comprehension before reading?
3. What activities do you do for reading comprehension during reading?
4. What activities do you do for reading comprehension after reading?
5. How often do you include teaching reading comprehension strategies in these reading comprehension activities?
6. What cognitive strategies for reading comprehension do you include in your reading comprehension activities?
7. What metacognitive strategies for reading comprehension do you include in your reading comprehension activities?
8. What methods and approaches do you prefer to use when teaching cognitive and metacognitive strategies for reading comprehension? What do you put most focus on in teaching?
9. What kind of adaptations and adjustments do you make in teaching cognitive and metacognitive strategies for reading comprehension?
10. What do you need in teaching cognitive and metacognitive strategies for reading comprehension?
11. How would you evaluate yourself in terms of teaching cognitive and metacognitive strategies for reading comprehension?

Data collection

Ethical approval and permission to implement the study were obtained from the Ministry of National Education before it began. After these had been received, the administrators and teachers working at the school where the study would be conducted were informed about its nature and purpose, and then teachers who were interested in participating were identified. Fifteen teachers volunteered to participate in the study. An interview schedule was prepared with these teachers. The data collection process was conducted on five different days. Two of the teachers withdrew from the study during the data collection process, and thus interviews were conducted with 13 teachers.

The teachers, who had provided their contact information, were reminded of the day and time determined the day before the data collection process. All interviews with teachers, including the pilot study, were conducted by the first author. The interviews were conducted in the "parent interview room", which had been allocated by the school principal. During the interview, the researcher and the teacher sat across from each other, the researcher explained the purpose of the study again, and when the teacher was ready, the researcher asked the questions one by one. All interviews were recorded on an audio recorder after obtaining permission from the teachers. These face-to-face interviews lasted between 18 and 33 minutes. After interviews had been conducted with all the teachers, the data collection process was finalized. The specific data obtained from the individual participants were filed separately.

Data analysis

The audio recordings of the interviews were first transcribed using the Microsoft Office program and then evaluated using descriptive analysis techniques. In descriptive analysis, direct quotations are included in order to give the explicit opinions of the people involved, and, at the same time, the results are examined in terms of cause-and-effect relationships (Yıldırım & Şimşek, 2003). In this context, the views of the special education teachers were evaluated descriptively and direct quotations from the participants were presented as codes and themes.

Validity and reliability

In order to ensure the internal validity of the study, expert opinions were obtained regarding the interview questions, while the participants provided their informed consent and are directly quoted below.. To ensure the external validity, the stages and the processes of data collection and data analysis have been explained in detail. In qualitative studies, inter-coder reliability is expected to be within the 90% confidence interval (Miles & Huberman, 1994). In this study, a 95% consensus was obtained in the calculation made using the formula "Reliability = Consensus/(Total Consensus + Total Disagreement)".

Findings

The data obtained from the teachers were divided into main themes and then into sub-themes. The main themes obtained are presented in Table 2.

Table 2. Main themes obtained from descriptive analysis

	Main Themes
1.	Activities performed before reading

2.	Activities performed during reading
3.	Activities performed after reading
4.	Cognitive and metacognitive strategies used in teaching reading comprehension
5.	Methods, approaches and adaptations used in teaching reading comprehension
6.	Topics teachers had problems with
7.	Teachers' professional needs

As can be seen in Table 2, seven main themes were obtained as a result of the analysis of the teachers' answers to the interview questions. Each of the main themes is discussed in detail below.

1. Activities performed before reading

The first finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the activities that teachers performed before reading. The teachers' responses to this main theme were categorized into nine sub-themes. The sub-themes and their frequencies are presented in Table 3.

Table 3. Subthemes related to the activities performed before reading

	Sub-theme	Frequency
1.	Text selection	4
2.	Talking about visuals related to the text	4
3.	Watching a video about the text	3
4.	Drawing a picture related to the subject of the text	1
5.	Silent reading	4
6.	Reading aloud	3
7.	Talking about the text	11
8.	Modeling	4
9.	Drama	1

As seen in Table 3, four of the teachers stated that they talked about the visuals related to the text before reading and three of them stated that they watched a video about the text. One of the teachers stated that she assigned roles to her students about the text and did a role-playing activity before reading. Eleven of the teachers stated that they gave a short, spoken introduction to the text before starting reading. Teachers A, L and M stated that they provided information about the subject of the text and gave instructions to the students about what to do before starting the text, while Teachers C, D, E, I and K stated that they did question-answer activities about the text before starting the text. Teacher E also stated that they carried out activities to predict what the text was about. Teacher L said: Before reading, if there is a message we [the teachers] want to give about the text, that is, if there is a point we want to emphasize, we chat about it. We try to attract the children's attention. Since they find it a little harder to focus, we first gain their attention and arouse their curiosity. (Teacher L) Teacher J said: “Before reading, I provide some brief information about the text, a story about the main idea, a joke. Then I read the text.” Four of the teachers discussed the criteria they pay attention to in selecting texts before starting reading activities. Accordingly, Teacher A paid attention to choosing texts about current issues, while Teacher C stated that she tried to choose texts consisting of at most two paragraphs with concrete concepts. While Teacher E chose texts consisting of short and simple sentences, Teacher

I stated that she chose texts that included daily life skills. Teacher F stated that she had her students draw pictures based on the subject of the text she had chosen before starting reading activities.

2. Activities performed before reading

The second finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the activities that the teachers performed during reading. The teachers' responses related to this main theme were grouped into five sub-themes. The sub-themes and their frequencies are presented in Table 4.

Table 4. Sub-themes obtained regarding the activities during reading

	Sub-theme	Frequency
1.	Question and answer	7
2.	Working on unknown words	2
3.	Reading aloud from part to whole (sentence, paragraph, text)	3
4.	Correcting reading errors	1
5.	Prosodic reading and reading repetition	3

As seen in Table 4, seven of the teachers included question-answer activities during reading. For example, Teacher A stated that the activities she performed during reading were as follows: "I do question-answer activities to get direct feedback". Teacher H said: During reading, for example, we give them sentences. We can do it in the form of 5N1K activities such as asking 'Where?', 'When?', or we try to describe the red house by asking questions such as 'What kind of house is the red house?' (Teacher H)

Teachers B and I stated that they found unknown words during reading and explained their meanings. Teacher I also stated that she asked the students to find the meanings of the words from the dictionary. She expressed this as follows: "Sometimes while we continue to read the passage, we ask questions about the places that have been mentioned, we find words that they know the meaning of from the dictionary, we talk and make associations". Teachers C, D and E stated that they read the texts aloud, moving from parts of the text to the whole text (first reading and talking about sentences, then reading and talking about a paragraph, and finally reading and talking about the whole text). Teacher G stated that she gave immediate feedback when her students made reading, while Teachers G, J and M stated that they read the text several times and paid attention to prosodic reading.

3. Activities performed after reading

Another finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the activities that teachers performed after reading. The teachers' responses related to this main theme were grouped into eight sub-themes. The sub-themes and their frequencies are presented in Table 5.

Table 5. Sub-themes Obtained Regarding Activities Performed After Reading

	Sub-theme	Frequency
1.	Summarizing	3
2.	Question and answer	12

3.	Teacher explaining the text	1
4.	Drama	1
5.	Finding a title for the text	1
6.	Using newly learned words in sentences	1
7.	Drawing a picture related to the text	1
8.	Providing examples from the students' lives	1

As seen in Table 5, three of the teachers asked students to summarize the text briefly after reading. Teacher A expressed this activity as follows: After the reading, I first ask the students to summarize what they have remembered in order to learn what they have understood. It doesn't matter how much they say - it can be in a sentence or one word, because this is special education and it depends on the level of the children. (Teacher A)

After reading, 12 of the teachers asked their students to answer both the reading comprehension questions under the text and questions they had generated themselves. Teacher F stated that after reading, she gave roles to her students and asked them to act out the text. Teacher L, on the other hand, stated the activities she did after reading were as follows:

We try and find a title for the text. If there are words they don't understand, if there are words they don't know, we talk about them, we use them in a new sentence. Afterwards, they can draw a picture related to the text or we do associative activities with another activity. (Teacher L)

Teacher M, on the other hand, stated that after reading, she tried to associate the information in the text with the students' own lives and tried to provide examples from the student's personal environment and experience.

4. Cognitive and metacognitive strategies used in teaching reading comprehension

Another finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the cognitive and metacognitive strategies that teachers included in their reading comprehension activities. The teachers' responses related to this main theme were grouped into six sub-themes. The sub-themes and their frequencies are presented in Table 6.

Table 6. Sub-themes related to cognitive and metacognitive strategies

	Sub-theme	Frequency
1.	Summarization	5
2.	Reminder (verbal cue, picture)	4
3.	Associating new knowledge with old knowledge	1
4.	Written statement	1
5.	Visualization	2
6.	Brainstorming	1

As seen in Table 6, five teachers (A, B, D, H and L) stated that they asked their students to verbally summarize as much of the text as they remembered. Teachers A, B and E stated that they used verbal prompts, and Teacher C stated that she tried to associate the information in the text with the pictures. Teacher A stated that she tried to associate new information with old information: When I explain a text about Atatürk, I try to remind them what they already know,

and tell them what they will know, what they need to know. For example, after studying a text, I specifically ask them to write it down. (Teacher A)

Teachers C and M stated that they tried to get the students to visualize the text in their minds, while Teacher J stated that they brainstormed about the text. However, Teachers F, G, I and K stated that they had no idea about cognitive and metacognitive strategies. In addition, for example, Teacher L said: We can't do much right now. I mean, there is not much extra we can do. In my previous studies, we were doing these kinds of things in reading comprehension. We give them short texts again. I mean, we can't do it with many books because the children's attention is distracted, but we have them summarize or something. (Teacher L)

5. Methods, approaches and adaptations used in teaching reading comprehension

Another finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the methods, approaches and adaptations that teachers used. The teachers' responses related to this main theme were grouped into six sub-themes. The sub-themes and their frequencies are presented in Table 7.

Table 7. Sub-themes related to the methods, approaches and adaptations used

	Sub-themes used	Frequency
1.	Modeling	6
2.	Peer teaching	1
3.	Explicit instruction	2
4.	Drama	1
5.	Making adaptations to the text and questions	2
6.	Prompt fading	1

As seen in Table 7, six teachers (A, B, C, D, H and F) stated that they acted as “models” for their students. Teacher C stated that she used peer instruction. Teachers D and J stated that they used explicit instruction, while Teacher E stated that she gradually faded the prompts she used. Regarding this, Teacher E said: We do not apply different techniques because the levels of the children are different. We try to summarize, but we don't use too many strategies. It can work like this: I give hints at the beginning and continue to help, but then I stop giving hints, I only give them instructions. (Teacher E)

Teachers K and L stated that they had no specific thoughts about the subject. Teachers C and G stated that they shortened or changed the text and reading comprehension questions by taking into account the individual characteristics of their students.

6. Topics teachers had problems with

Another finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was the issues that teachers had problems with. In this regard, Teacher B stated that the classes were overcrowded at the high-school level and the time allocated for Turkish lessons was limited. This teacher said the following: It works something like this in vocational special education: The courses are mostly workshop courses and the classes are overcrowded compared to other special education schools. In this case, the classroom is like an ocean. There are 10 students. All 10 of them are in a different world. Now I have to explain 10 different topics to 10 different students in a two-hour lesson. This limits the use of these

strategies in my opinion…In this case, we use techniques such as demonstration and lecture more because these techniques save time and leave time for other students. (Teacher B)

Teachers C, H and L also stated that they had problems in teaching reading comprehension due to insufficient resources. For example, Teacher C expressed her thoughts as follows: There are no resource books for students. I mean, I have been in special education for 15-16 years. We always have the same reading comprehension books. Our texts are the same. I have to, I mean, I try to used primary-school 1st, 2nd and 3rd grade Turkish books or I find texts online myself. If there were reading comprehension books for these children, there would be a variety. There are some on the internet but they are very expensive. It is hard for the children to access them. But it would be very good if 'The Ministry of National Education' would print them. (Teacher C)

7. Teachers' needs

The last finding obtained from the teachers as a result of the semi-structured interviews conducted within the scope of the study was what teachers believe they need to teach reading comprehension. The teachers' responses related to this main theme were grouped into two sub-themes. The sub-themes and their frequencies are presented in Table 8.

Table 8. Sub-themes related to teachers' needs

	Sub-theme	Frequency
1.	Resources	6
2.	Training for professional development	6

As seen in Table 8, six teachers (A, C, D, E, H and L) stated that they needed different materials, including books and technological aids when teaching reading comprehension. In addition, Teachers A, B, C, D, E and L stated that topics related to reading comprehension needed to be included in in-service training organized by the Ministry of National Education.

Discussion and Conclusion

This study aimed to identify the strategies used by teachers working with students with intellectual disabilities in teaching reading comprehension. For this purpose, semi-structured interviews were conducted with 13 teachers working with students with mild intellectual disabilities in a special education vocational high school and information was obtained about the strategies, methods and approaches they used in this regard. The findings were grouped into seven main themes, and the sub-themes and ideas related to each main theme were discussed in detail. In this section, these findings are discussed in the light of the literature.

The findings showed that the teachers used a limited number of strategies before, during and after reading. In this respect, this finding is consistent with those of other studies in the literature (Aktas & Bayram, 2018; Anmarkrud & Braten, 2012; Barron et al., 2018; Baydik, 2011; Epcatan, 2009; İnce & Duran, 2013; Jakobson, K., Soodla, P., & Aro, M. 2022). In a study by Jakobson et al. (2022) it was found that special education teachers had only a partial knowledge of reading comprehension strategies. In similar studies, it was also determined, through classroom observation studies, that teachers had limited knowledge of such strategies (Anmarkrud & Braten, 2012; Barron et al., 2018). The present study found that the majority of the teachers only had a short discussion with their students about the topic of the text before

reading and provided instructions on what the students would have to do during the lesson. Although the content of these discussions included information about the texts, such as their titles, the subjects covered etc., the literature emphasizes the use of strategies such as skimming the text, and determining its structure, length and level of difficulty before reading for effective and purposeful reading (Bishop et al., 2006; Johson et al., 1997; Lipson & Wixson, 2009; Pressley & Gaskins, 2006). It is necessary to teach these strategies before reading, especially to children with intellectual disabilities whose ability to use such techniques may be limited. However, the information obtained from the teachers in this study showed that some of the teachers stated that they paid attention to the difficulty level of a text in the preparation phase. But, it was determined that the teachers did not give any information to the students about the structure of the text. Skimming a text before reading it is very important in terms of getting an idea about the text and the purpose of reading it (Johson et al., 1997; Lipson & Wixson, 2009; Pressley & Gaskins, 2006). In this respect, the fact that most of the teachers interviewed began with silent reading or reading aloud showed that this techniques was not emphasized.

The teachers' answers showed that they made the students read the text in small sections to help them understand the text during reading, summarized the text, and then provided continuous feedback to the students using the question-answer technique. Considering the students' type of disability, this practice is supported by the literature (Dimino, Gersten, Carnine, Blake, 1990; Johnson et al., 1997). The study revealed that teachers talked about unknown words during reading, albeit to a limited extent, and asked students to look up the meanings of these words in a dictionary. The literature suggests that cognitive and metacognitive strategies such as finding and underlining unknown words during reading, guessing the meanings of words by using context clues in the text, or finding the meanings of words from a dictionary should be used simultaneously (Gersten et al., 2001). In this respect, the fact that teachers included the strategies of finding unknown words and looking them up in the dictionary during reading is supported by the findings of other studies in the literature (Baydik, 2011; İnce & Duran, 2013). Baydık (2011) also found that 89.7% of the teachers participating in her study included practices to find the meaning of unknown words in the text. As a result,it was seen that the teachers did not do any work on predicting the meanings of unknown words using context clues in the text. However, studies in the literature have shown that utilizing context clues has significant effects on reading comprehension (Perfetti & Adlof, 2012). Other strategies that should be used during reading are rereading a sentence or paragraph that has not been understood, slowing down the reading speed, going back, taking notes, and underlining important information (Bishop et al., 2006; Lipson & Wixson, 2009). The information obtained from the teachers showed that they did not include these strategies during reading.

Another finding was the reading comprehension activities the teachers used after reading. It was found that the majority of the teachers asked reading comprehension questions after reading. In addition, the study determined that they also asked students to summarize what they had read and used drama activities, although not very often. A review of the literature emphasizes that cognitive and metacognitive strategies such as reviewing the text after reading, rereading the parts that have not been understood, asking questions about the text, and self-evaluation should be used simultaneously and these strategies should be taught to students (Mastropieri, Scruggs, & Graetz, 2003). In this respect, it is noticeable that the teachers predominantly concentrated on question-answer activities after reading. However, studies have

shown that being able to answer reading comprehension questions correctly after reading is related to the simultaneous use of different strategies (Johson et al., 1997; Pressley & Gaskins, 2006).

Another significant finding of the study involved the level of teachers' use of cognitive and metacognitive strategies in teaching reading comprehension. In the interviews, it emerged that the teachers mostly used summarizing, while some teachers only tried to associate the information in the text with the pictures from the reminders. One of the two teachers tried to associate new information with old information and the other one tried to remind their students of previously acquired knowledge through brainstorming. Some teachers reported that they had no knowledge of these strategies. These findings are noteworthy. However, in the literature, it is frequently stated that cognitive strategies and metacognitive strategies, including self-regulation strategies, should be used simultaneously before, during and after reading (Berkeley & Larson, 2018; Nelson & Manset-Williamson, 2006). In addition, reading comprehension interventions with children with intellectual disabilities reveal that these children are able use cognitive and metacognitive strategies when taught with the right methods and techniques (Doganay-Bilgi & Ozmen, 2014). Doganay-Bilgi and Ozmen (2014) introduced metacognitive strategies used in reading comprehension to students with mild intellectual disabilities through adapted multi-item cognitive strategy instruction, and their findings revealed that these students were able to use metacognitive strategies and there was a significant increase in their reading comprehension.

Another important finding was the methods used to teach reading comprehension and the adaptations and adjustments the teachers made to them. The information obtained in this regard shows that teachers mostly preferred to use modeling or explicit instruction. The literature review, on the other hand, revealed that different methods and techniques, including direct teaching, reciprocal teaching, and the use of story maps are effective in improving the reading skills of children with intellectual disabilities (Duman, 2006; Işikdoğan, 2008; Ozmen, 1999; Lundberg & Reichenberg, 2013).

Reading comprehension strategies are very important in ensuring that reading activities have successful outcomes. These strategies should be taught to students with intellectual disabilities through both direct instruction and explicit teaching methods. For these reasons, it is important that special education teachers working with students with intellectual disabilities have sufficient knowledge about these strategies and how to use them. In this respect, it is thought that the findings of this study will make important contributions to the literature and studies about reading comprehension. In addition, it is thought that the present study provides findings that can be used in practical studies of how reading comprehension is taught in undergraduate teacher training programs. The findings obtained here from special education teachers working with students with mild intellectual disabilities showed that they included cognitive and metacognitive strategies, which are frequently mentioned in the literature, before, during and after teaching reading, but that they did not focus specifically on the principles of teaching strategies. In addition, the study revealed that the number of teachers who applied specific strategies was quite low, and some teachers did not include strategy teaching at all in their practices. The findings of the present study provide important information about the educational services provided to students with special needs. Considering the effectiveness of reading comprehension strategies on reading skills, it is thought that the findings of this study

make an important contribution to the literature and to practice and provide a guide for future studies. Suggestions regarding the research results are as follows:

1. The literature shows that teaching reading comprehension strategies has a positive effect on reading comprehension skills. In this respect, we recommend that teachers should include reading comprehension strategies before, during and after reading in their Turkish lessons.
2. The literature states that successful teaching of reading comprehension strategies should be planned using direct and explicit teaching methods and following the principles for teaching these strategies. In this respect, we recommend that teachers plan their reading comprehension activities in line with these methods and principles.
3. Considering the effectiveness of teaching reading comprehension strategies, it is important to inform teachers and school administrators about the importance, effectiveness, content and evaluation of such teaching. In this respect, we recommend that in-service training programs organized by the Ministry of National Education include seminars on these issues.
4. Considering the limitations of teachers regarding strategy instruction, it is necessary to inform teachers about reading comprehension strategies and how to teach and integrate these strategies into lessons. Mentor support should also be provided to teachers. These topics should thus be included in online or face-to-face training organized by experts in the field.
5. Future research could be conducted with teachers working with students affected by different types of disabilities.
6. Future research could be planned as an intervention study, in which teachers are given training in these areas.

References

Aktaş, E., & Bayram, B. (2018). Türkçe öğretiminde okuduğunu anlama stratejilerinin kullanımı üzerine bir inceleme. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *22*(3), 1401-1414. [An Analysis on the use of Reading Comprehension Strategies in Turkish Education] https://dergipark.org.tr/en/download/article-file/553622

Alexander, P. A., & Jetton, T. L. (2000). *Learning from text: A multidimensional and developmental perspective*. In M. Kamil, P.B. Mosenthal, P.D. Pearson, and R. Barr (Eds.), Handbook of reading research, Vol. III (pp. 285 – 310). Mahwah, N.J: Erlbaum.

Alyousef, H. S. (2005). Teaching reading comprehensıon to ESL/EFL learners. *The Reading Matrix, 5*(2), 143-154. https://www.readingmatrix.com/articles/alyousef/article.pdf

Anmarkrud, O., & Braten, I. (2012). Naturally-occurring comprehension strategies instruction in 9th-grade language arts classrooms. *Scandinavian Journal of Educational Research, 56*(6), 591–623. https://doi.org/10.1080/00313831.2011.621134

Baker. L., & Brown, A.L. (2002). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of reading research* (pp. 353-395). Lawrence Erlbaum Associates. https://doi.org/10.4324/9781315200651

Barron, E. R., Rupley, W. H., Paige, D., Nichols, W. D., Nichols, J., & Lumbreras, R. (2018). Middle school teachers' knowledge and use of comprehension strategies in discipline instruction. *International Journal of Learning, Teaching and Educational Research, 17*(10), 1–17.

DOI: 10.26803/ijlter.17.10.1

Baydık, B. (2011). Okuma güçlüğü olan öğrencilerin üstbilişsel okuma stratejilerini kullanımı ve öğretmenlerinin okuduğunu anlama öğretim uygulamalarının incelenmesi. *Eğitim ve Bilim*, *36*(162), 301-319. [Examining the Use of Metacognitive Reading Strategies of Students with Reading Difficulties and their Teachers' Reading Comprehension Instruction Practices]

Berkeley, S., & Larsen, A. (2018). Fostering self-regulation of students with learning disabilities: Insights from 30 years of reading comprehension intervention study. *Learning Disabilities Research & Practice*, *33*(2), 75-86.
https://doi.org/10.1111/ldrp.12165

Bishop, P. A., Reyes, C., & Pflaum, S. W. (2006). Read smarter, not harder: Global reading comprehension strategies. *The Reading Teacher*, *60*(1), 66-69.
https://doi.org/10.1598/RT.60.1.7

Doganay Bilgi, A., & Ozmen, E. R. (2014). The impact of modified multi-component cognitive strategy instruction in the acquisition of metacognitive strategy knowledge in the text comprehension process of students with intellectual retardation. *Educational Sciences: Theory and Practice*, *14*(2), 707-714.
DOI: 10.12738/estp.2014.2.1629

Duman, N. (2006). *Hikâye haritası yönteminin eğitilebilir zihinsel engelli öğrencilerin okuduğunu anlama becerileri üzerindeki etkisi*. Yayımlanmamış Yüksek Lisans Tezi. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu. [The effect of story mapping method on educable mentally retarded students' reading comprehension skills.Unpublished Master Thesis]

Eripek, S. (1987). Alt özel sınıf öğrencilerinin ilkokullar sınıfları düzeyinde sesli okuma basarılarının değerlendirilmesi. *Eğitim Fakültesi Dergisi*, *2*, 125-140. [Evaluation of a self-contained classroom in the achievement of students reading aloud at the elementary level]

Eripek, S. (2005). Özel gereksinimi olan çocuklar ve özel eğitim. *Standart, Ekonomik ve Teknik Dergisi*. *44*(52), 14-19. [Children with special needs and special education]

Fälth, L., Selenius, H., & Egerhag, H. (2023). A cross-sectional study on reading among young L1 and L2 students in Sweden. *European Journal of Special Needs Education*, 38(2), 233-244.
https://doi.org/10.1080/08856257.2022.2050973

Flores, M. M., & Ganz, J. B. (2007). Effectiveness of direct instruction for teaching statement inference, use of facts, and analogies to students with developmental disabilities and reading delays. *Focus on Autism and Other Developmental disabilities*, *22*(4), 244-251.
https://doi.org/10.1177/10883576070220040601

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of study. *Review of Educational Study*, *71*(2), 279-320.
https://doi.org/10.3102/00346543071002279

Guldenoglu, B., & Kargin, T. (2012). Karşılıklı öğretim tekniğinin hafif derecede zihinsel engelli öğrencilerin okuduğunu anlama becerileri üzerindeki etkililiğinin incelenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, *13*(01), 17-34. [The Effectiveness of Reciprocal Teaching Method on Teaching Reading Comprehension to Students with Mild Intellectual Disabilities]
https://doi.org/10.1501/Ozlegt_0000000164

Guldenoglu, B., Kargin, T., & Ergül, C. (2016). Sesbilgisel farkındalık becerilerinin okuma ve okuduğunu anlama üzerindeki etkisi: Boylamsal bir çalışma. *İlköğretim Online*, *15*(1), 251-272. [Effects of Phonological Awareness Skills on Reading and Reading Comprehension: A Longitudinal Study]
https://doi.org/10.17051/io.2016.25973

Guler, Ö. (2008). *Comparing the Effectivenes of Before, While and After Reading Techniques in Improving Story Comprehension of Students with Mental Retardation* (Publication No. 218469) [Master's thesis, Gazi University]. https://tez.yok.gov.tr/UlusalTezMerkezi/

Guzel, R. (1999). Doğrudan öğretim yönteminin öykü anlama becerisinin öğretiminde uygulanması. *Eğitim ve Bilim*, *23*(111), 31-41. [An Application of the Direct Method in Understanding Stories]

Ozmen, R. G. (2011). Comparison of two different presentations of graphic organizers in recalling information in expository texts with intellectually disabled students. *Educational Sciences: Theory and Practice*, *11*(2), 785-793.

Ozmen, R. G., & Vayiç, Ş. (2007). Oku-altını çiz-böl-birleştir stratejisinin zihinsel engelli öğrencilerin hece tanıma becerilerini kazanmalarında etkililiği. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, *8*(02), 1-18. [The Effectiveness of The Read-Underline-Segment-Blend Strategy on the Acquisition of Syllable Recognition Skills of Students with Mental Retardation] https://doi.org/10.1501/Ozlegt_0000000116

Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and Writing: An Interdisciplinary Journal*, *2*, 127–160.

Işıkdoğan, N., & Kargin, T. (2010). Hikaye haritası tekniğinin zihin engelli öğrencilerin okuduğunu anlama becerilerini kazanmalarındaki etkililiği. *Educational Sciences: Theory & Practice*, *10*(3), 1489-1531. [Investigation of the Effectiveness of the Story-Map Method on Reading Comprehension Skills among Students with Mental Retardation]

İnce, Y., & Duran, E. (2013). Sınıf öğretmenlerinin okuduğunu anlama stratejilerine yönelik görüşleri ve kullanma düzeyleri [Examination of the opinions elementary teachers on reading comprehension strategies and the use of such strategies]. *Okuma Yazma Eğitimi Araştırmaları*, *1*(1), 9-19.

Jakobson, K., Soodla, P., & Aro, M. (2022). General and special education teachers' knowledge about reading comprehension processes and instructional practices. *Reading and Writing*, 35(9), 2229-2256.

Johnson, L., Graham, S., & Harris, K. R. (1997). The effects of goal setting and self-instruction on learning a reading comprehension strategy: A study of students with learning disabilities. *Journal of learning disabilities*, *30*(1), 80-91. https://doi.org/10.1177/002221949703000107

Karasar, N. (2012). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayıncılık. [Scientific research methods]

Lipson M. Y., & Wixson, K. K. (2009). *Assessment and instructions of learning and writting difficulties: An interactive approach*. Boston: Pressley.

Lundberg, I., & Reichenberg, M. (2013). Developing reading comprehension among students with mild intellectual disabilities: An intervention study. *Scandinavian Journal of Educational Research*, *57*(1), 89-100. https://doi.org/10.1080/00313831.2011.623179

Mastropieri, M. A., & Scruggs, T. E. (1997). Best practices in promoting reading comprehension in students with learning disabilities 1976 to 1996. *Remedial and Special Education*, *18*(4), 198-213. https://doi.org/10.1177/074193259701800402

Mastropieri, M. A., Scruggs, T. E., & Graetz, J. E. (2003). Reading comprehension instruction for secondary students: Challenges for struggling students and teachers. *Learning Disability Quarterly*, *26*(2), 103-116. https://doi.org/10.2307/1593593

Miles, M. B. & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.).California: SAGE Publication Inc.

Nelson, J. M., & Manset-Williamson, G. (2006). The impact of explicit, self-regulatory reading comprehension strategy instruction on the reading-specific self-efficacy, attributions, and affect of students with reading disabilities. *Learning Disability Quarterly*, *29*(3), 213-230. https://doi.org/10.2307/1593593

Perfetti, C. & Adlof, S.M. (2012). *Reading comprehension: A conceptual framework from word meaning to text meaning.* In J. Sabatini, E. Albro & T. O'Reilly (Eds.), Measuring up: Advances in how we assess reading ability, (pp. 3–20). New York: Rowman & Littlefield Publishers, Inc.

Pressley, M., & Gaskins, I. W. (2006). Metacognitively competent reading comprehension is constructively responsive reading: How can such reading be developed in students? *Metacognition and Learning*, *1*(1), 99-113. https://doi.org/10.1007/s11881-022-00253-5

Pressley, M., & Hilden, K. (2002). *How can children be taught to comprehend text better?* In M.L. Kamil, J.B. Manning, & H. J. Walberg (Eds.), Successful reading instruction: Research in educational productivity (pp. 33-51). Greenwich, CT: Information Age.

Solis, M., Kulesz, P., & Williams, K. (2022). Response to intervention for high school students: examining baseline word reading skills and reading comprehension outcomes. *Annals of Dyslexia*, *72*(2), 324-340. https://doi.org/10.1007/s11881-022-00253-5

Swanson, H. L., & Trahan, M. (1996). Learning disabled and average readers' working memory and comprehension: does metacognition play a role?. *British Journal of Educational Psychology*, *66*(3), 333-355. https://doi.org/10.1111/j.2044-8279.1996.tb01201.x

Yıldırım, A., Şimşek, H. (2003). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri*. Ankara: Seçkin Yayınları [Social Sciences Qualitative Research Methods]

Yucesoy, Ş., & Cure, G. (2018). *Comparison of repeated reading and story-mapping strategies on improving reading comprehension skills of students with intellectual disabilities* (Publication No. 524941). [Master's thesis, Anadolu Üniversitesi]. https://tez.yok.gov.tr/UlusalTezMerkezi/

Westby, C. (2004). A language perspective on executive on functioning, metacognition, and self-regulation. In A. Stone, E. R. Silliman, B. J. Ehren, & K. Apel (Eds.) *Handbook of language and literacy* (pp. 398-427). New York: Guilford Press.

Language Teaching and Educational Research

e-ISSN 2636-8102

Volume 6, Issue 2 | 2023

Pre-Service EFL Teachers' Knowledge and Beliefs about Developmental Dyslexia: Implications for EFL Teacher Training

Cihat Atar
Alia Amir

To cite this article:

Atar, C., & Amir, A. (2023). Pre-Service EFL teachers' knowledge and beliefs about developmental dyslexia: Implications for EFL teacher training. *Language Teaching and Educational Research (LATER), 6*(2), 160-175. https://doi.org/10.35207/later.1296792

LATER
http://dergipark.org.tr/later
Language Teaching and Educational Research
e -ISSN: 2636-8102 *LATER*, 2023: 6(2), 160-175
Turkish JournalPark ACADEMIC

Research Article

Pre-service EFL teachers' knowledge and beliefs about developmental dyslexia: Implications for EFL teacher training

Cihat Atar * ORCID
Associate Professor, Foreign Languages Teaching Department, Faculty of Education, Sakarya University, TURKIYE
Alia Amir ORCID
Associate Professor, Department of Culture and Society, Linköping University, SWEDEN

Abstract

This study aims to analyse the misconceptions, knowledge, and knowledge gaps of 176 Turkish pre-service English as a foreign language teachers about dyslexia which is a prevalent developmental disorder. The data were collected at eight different universities in Türkiye and analysed by SPSS 25.0 via descriptive statistics and the Kruskal Wallis Test, considering the participants' scores on the Knowledge and Beliefs about Developmental Dyslexia scale. In addition to studying the knowledge base about dyslexia, the effect of the variables grade and gender was analysed. The results showed that most of the participants had flawed information about dyslexia, and lack of information was common. On the other hand, gender and grade did not have any significant effects. These findings indicate a need for wider awareness and formal education about dyslexia for pre-service English as foreign language teachers to create more inclusive classrooms.

Received
13 May 2023

Accepted
05 July 2023

Keywords
Developmental dyslexia
English language teaching
Teacher beliefs
Inclusive education

Suggested APA citation: Atar, C., & Amir, A. (2023). Pre-service EFL teachers' knowledge and beliefs about developmental dyslexia: Implications for EFL teacher training. *Language Teaching and Educational Research (LATER), 6*(2), 160-175. https://doi.org/10.35207/later.1296792

Note(s)
*Corresponding author

Author(s)' statements on ethics and conflict of interest
Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.
Statement of interest: We have no conflict of interest to declare.
Author contribution disclosure: Both authors contributed equally to this study.
Funding: None
Acknowledgements: We are also grateful to the anonymous reviewers and the editor for their valuable comments and suggestions.

Introduction

Dyslexia is identified as one of the most frequent learning difficulties (Echegaray-Bengoa et al., 2017). It can be defined as a neurodevelopmental disorder (Norton et al., 2015) of biological origin that is associated with not only learning difficulties but also problems in acquiring academic skills (e.g., writing, reading, or maths) which appear significantly below age level when manifested in early years school life. It is suggested that it is not attributable to intellectual disabilities, inadequate schooling, developmental disorders, and overall neurological or motor disorders (Ramus, 2014). The recent literature on reading disabilities indicates that the cognitive processes that are involved in reading rather than general intelligence are the criteria that indeed differentiate dyslexic individuals from poor readers (Bell et al., 2011). Furthermore, the accumulating research suggests that processing skills (e.g., rapid word naming, phonological awareness skills, and pseudoword decoding) are better at predicting success in reading in comparison to general intelligence (Vellutino et al., 2004). Phonological processing skills are seen as a major component of acquiring reading skills and are also considered a predictor of future success in reading (Bradley & Bryant, 1983; Snowling, 2000; Stanovich, 1988). The British Dyslexia Association uses the following definition (Rose, 2009, p.10):

> Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor co-ordination, mental calculation, concentration and personal organisation, but these are not, by themselves, markers of dyslexia. A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention.

Moreover, the British Dyslexia Association also acknowledges that some individuals might have visual and auditory processing difficulties, and dyslexic readers are prone to displaying a mixture of skills and obstacles, which may have an effect on the learning process. They may have strengths in other areas, including interactive, design, creative, problem-solving, and oral skills. On the other hand, dyslexia can affect the learning of languages. This is affected by problems in phonological processing, poor auditory discrimination, syntax-related problems, faulty auditory sequencing, automaticity, and difficulties with motor skills. Moreover, limited attention span, processing information at a slow rate, and difficulties in object naming with links to dyslexia have been well documented in research (see, e.g., Crombie, 1992; Miles, 1993). To sum up, phonological processing skills are seen as significant challenges for the dyslexic individual, and these are not dependent on general intelligence (Shaywitz et al., 2008).

Dyslexia and teachers' knowledge

Even though dyslexia is the most widespread learning disorder (European Dyslexia Association, 2023), which occurs universally in all cultures or languages and affects nearly 10% of the population (2-4% of the population is seriously affected), there are some gaps in the literature regarding understanding teachers' misconceptions, knowledge, and knowledge gaps about dyslexia. It is essential that language teachers have an accurate understanding of dyslexia (Johnston, 2019) to provide the best learning opportunities to dyslexic students. Findings from studies of teachers' knowledge indicate that teachers tend to lack sufficient knowledge to teach

learners who have difficulties. It is suggested that professional development programs can improve teachers' pedagogic knowledge, which, in turn, may have a positive impact on students' reading achievement. Moreover, a growing body of scholarship has pointed out that teachers do not have an understanding of many fundamental concepts related to teaching those who struggle with reading (e.g., Bos et al., 2001; Moats & Foorman, 2003; Washburn et al., 2011).

Dyslexia is not curable, as it is a lifelong condition; however, studies have shown that early recognition creates a greater chance of success for children with dyslexia (Torgesen, 2002; Torgesen et al., 1999). In addition, explicit instruction on print-sound mapping principles (Moats & Foorman, 2003) and being supported by teachers who play an integral role in the network of instruction and assessment have a positive effect on dyslexic people (Washburn et al., 2014). In this regard, research has also provided strong evidence for the potential of teachers to prevent learning failures via effective teaching practices (Moats, 1994; Snow et al., 2005; Taylor et al., 1999), and teachers' own linguistic awareness somehow improves reading achievement of students who struggle (Al Otaiba & Lake, 2007; Piasta et al., 2009). On the other hand, the term developmental dyslexia underlines that children with dyslexia have problems with language development that continue into school age and beyond. During the last few decades, several studies have focused on teachers' knowledge about developmental dyslexia and other learning difficulties, which have shown inadequate awareness of teachers' knowledge; for example, in the USA and the UK (e.g., Allington, 1982; Bell et al., 2011; Wadlington & Wadlington, 2005; Washburn et al., 2014), in China (Yin et al., 2020), in Spain (Soriano-Ferrer et al., 2016) and in Türkiye (Sümer Dodur & Altindağ Kumaş, 2021; Kaçar & Düzkantar, 2019). Hence, lack of understanding among teachers seems to be a universal problem.

To exemplify some of the studies on teachers' knowledge, a study conducted in the Greek context can be investigated. Chourmouziadou (2016) conducted a study with primary school teachers which indicated that teachers' understanding of dyslexia varies greatly, and there are gaps in their knowledge as well as common misconceptions about this topic. In addition, the results indicated a lack of awareness concerning strategies and a need for intervention programs for students that have dyslexia. In a study carried out by Bell et al. (2011) in England and Ireland, the researchers looked at how teachers and teaching assistants who were teaching primary school pupils with dyslexia described dyslexia and what influenced their conceptualization. The findings showed that, in Ireland, the teachers had a much better understanding of dyslexia than their counterparts in England. However, both in England and Ireland, a large proportion of the respondents appeared to conceptualize dyslexia as a behavioral problem. Research carried out in the Turkish context also confirms that teachers have poor knowledge of dyslexia (Balcı, 2019; Sümer Dodur & Altindağ Kumaş, 2021; Doğan, 2013). Moreover, there has been growing concern about teachers' lack of incorporation of research findings into their teachings. In this regard, Davidson (2013) conducted a crucial study about the extent to which Ontario elementary school teachers use research on reading disabilities. The results showed that students not receiving evidence-based teaching can have increased risks of developing reading disabilities.

Dyslexia and English as a second/foreign language teaching

In order to achieve reading competence in the first language, it is essential to acquire grapheme-phoneme (G-P) conversion rules first. However, this knowledge is not sufficient for reading fluency. Individuals also need orthographic representation (Suárez-Coalla et al., 2020). Cross-linguistic studies have reported that the reading performance of people with dyslexia

varies depending on the orthographic system (Suárez-Coalla et al., 2020). Moreover, it has also been noted that dyslexic reading problems are more prominent in languages with deep orthographies, e.g., English, whose spelling is opaque, compared to languages with shallow orthographies, such as Turkish, German, or Spanish (Suárez-Coalla et al., 2020; Wimmer & Goswami, 1994).

Returning to the focus of this study, English language teachers' knowledge of dyslexia, English is the most common language in the world, and many more primary school students are learning English as compared with students ten years ago (Johnstone, 2019). Dyslexia entails a complex situation for primary school children learning English as a second/foreign language, as it not only influences the development of oral and literacy skills in the children's first language but also has a great impact on the processes of L2 learning (Kormos, 2017; Simon, 2000).

Although this complex area of research cannot be covered here fully, a few studies are pertinent to mention to capture the complex relationship between English language teaching and dyslexia and the need to equip teachers with the necessary information and training. In studies in Norway (Helland & Kaasa, 2005) and Hungary (Kormos & Mikó, 2010), students with dyslexia had lower scores on a vocabulary test on English as a second language word reading in comparison to non-dyslexic participants. Hungarian students with dyslexia also had lower scores on a sentence comprehension test compared to their peers (Kormos & Mikó, 2010). In the Canadian context of English as an additional language, Geva et al.'s (1993) study obtained similar results. Besides challenges in L2 written language development, dyslexic children face challenges in understanding orally presented information as well. In conclusion, the literature suggests that dyslexia affects second or foreign language learning negatively.

Dyslexia and Turkiye

Dyslexia as a phenomenon has only recently been socially acknowledged in Türkiye, but it has already attracted the attention of researchers in the field (Sümer Dodur & Altindağ Kumaş, 2020). However, there is a lack of scientific research about dyslexia in the Turkish context, with only Balcı (2019) and Sümer Dodur & Altindağ Kumaş (2020) conducting systematic studies. In particular, there is a lack of scientific research that focuses on the prevalence of dyslexia among Turkish children. In addition, dyslexia was not given sufficient significance in the curriculum of departments in the faculties of education in Türkiye. To exemplify, according to the analysis of the higher education curriculum in English Language Teaching departments, Atar et al. (2021) found that there were not enough courses dedicated to teaching English to learners with special needs except for a general elective course named inclusive education. This course was by no means exhaustive, and dyslexia could only be a minor topic in the syllabus. Atar et al. (2021, p. 26) further suggested, "Some universities (e.g., Sakarya University) provide a special education course, but again, it mostly focuses on the characteristics of these students, and it provides implications for pedagogy in a general sense rather than specific implications for English language teaching.". Therefore, it may be concluded here that there are not enough courses about dyslexia (except for a few general courses in the curriculum and few other courses that are offered if there is a lecturer specialized in that topic) in English Language Teaching departments in Türkiye even though dyslexia is a common learning problem (Echegaray-Bengoa et al., 2017).

Considering the studies in the literature on Turkish of children/students, it was argued that there was not any individual research that focused on dyslexia considering the Turkish language, which has transparent orthography and is an agglutinative language (Sümer Dodur &

Altindağ Kumaş, 2020). The focus of this study is not on providing a comprehensive procedure of how common dyslexia is within Türkiye but on analyzing the knowledge level of a certain group in line with Sümer Dodur and Altindağ Kumaş (2020) and Seçkin-Yılmaz and Erim (2019). This study also seeks to understand and contribute to awareness about teachers' knowledge of dyslexia in order to help educational policymakers and teacher practitioners to create more inclusive and more effective classrooms for the future.

To illustrate the studies in the Turkish context, Balcı (2019) carried out a pioneering study of preschool teachers serving in Ankara to investigate the teachers' opinions about dyslexia to determine their training needs. The findings showed that the teachers were not knowledgeable about dyslexia, and they did not think their dyslexia training was adequate. While the current study was carried out at the university level, a pioneering study in the Turkish context using the same scale as the current one was carried out by Sümer Dodur and Altindağ Kumaş (2020), who conducted research with 260 primary school teachers and found that their results were consistent with the findings from the other studies (e.g., Wadlington & Wadlington, 2005). While the dyslexia research focusing on the Turkish language is scarce, Durgunoğlu and Öney (1999) carried out another study on the development of phonological awareness of Turkish and American kindergarten and first-grade students (n= 138). The study revealed that both American and Turkish first-grade children performed better than kindergarten children on phonological awareness tasks. The Turkish children; however, even in kindergarten, were able to manipulate syllables more accurately compared to the American children. This is because Turkish is a more agglutinative language, and it is easier for Turkish learners to manipulate the final phoneme as compared to English-speaking children (Durgunoğlu & Öney, 1999). Moreover, since Turkish has a shallow orthography, breaking it into syllables is easier than in English. Furthermore, this has been established in research that phonological awareness is important for alphabetic literacy development. The above-mentioned study was focused on Turkish children learning the Turkish language and American children learning English. This points toward the gap in research on understanding phonological awareness for Turkish children who are learning English as a second or foreign language.

Furthermore, to prepare the Turkish pre-service English as a foreign language (EFL) teachers to be able to identify and support dyslexic children, assessing their knowledge base is useful for pedagogy and lesson planning. Furthermore, the literature review demonstrates that there is a gap in research when it comes to understanding language teachers' knowledge and misconceptions about dyslexia, especially in the Turkish context. Moreover, second/foreign language contexts in relation to teachers' knowledge is an under-investigated area. Accordingly, this study aims to contribute to the gap in the literature by mapping pre-service EFL teachers' knowledge and beliefs about dyslexia and discussing the results with regard to the relationship between dyslexia and its potential effects on teacher training. To understand the above-mentioned aims, this study investigates the research questions presented below:

1. What are the misconceptions, knowledge levels, and knowledge gaps of Turkish pre-service EFL teachers about dyslexia?
2. Do some variables have any effects on the participants' level in KBDDS?
   2.a. Does gender have any effects on the participants' level in KBDDS?
   2.b. Does grade have any effects on the participants' level in KBDDS?

Methodology

Model of the research

This study is a quantitative and descriptive study that utilized a scale (Soriano-Ferrer & Echegaray-Bengoa, 2014). It was designed as a case study, which aimed to investigate pre-service EFL teachers' knowledge and beliefs about dyslexia.

Participants

The scale by Soriano-Ferrer and Echegaray-Bengoa (2014) was distributed to many relevant potential contributors who were EFL pre-service teachers studying at eight different universities in the western and central regions of Türkiye via convenience and snowball sampling. 176 pre-service teachers participated in the study. The details about the participants are presented below in Table 1.

Table 1. The participants.

Variables		F	Valid Percent	Cumulative Percent
Grade	1	14	8	8
	2	30	17	25
	3	64	36,4	61,4
	4	68	38,6	100
Gender	female	128	72,7	72,7
	male	48	27,3	100
Total		176	100	

Data collection instrument

The data collection tool in the current study is The Knowledge and Beliefs about Developmental Dyslexia Scale (KBDDS) which was created, developed, and tested by Soriano-Ferrer and Echegaray-Bengoa (2014) for the target group of teachers and instructors. The instrument consists of thirty-six items and three factors (General Information, Diagnosis, and Treatment), which allow researchers to collect a satisfactory amount of data about knowledge and beliefs about dyslexia. In addition to the thirty-six items, participants were asked to provide their gender and grade. Internal consistency coefficients were calculated as .87, .85, and .78 for the General Information (17 items), Diagnosis (10 items), and Treatment (9 items) factors, respectively. Hence, this is a reliable instrument for collecting data. The data collection tool provides three options for each item: Correct, False, and Do Not Know (see Appendix A for details).

Data collection and analysis procedures

The research data were collected between December 2020 and July 2021 using KBDDS. The scale was transferred to Google Forms, to which participants were invited to complete online on a voluntary basis. The participants of the study were provided with the information about the study. However, this information included only the procedures for the study. It did not provide any information about dyslexia, as the very goal of this study was to learn about the participants' knowledge level about dyslexia. Complete confidentiality and adherence to ethical guidelines were assured.

The pre-service EFL teachers in this study consisted of students from the 1st to 4th grade at the undergraduate level in English Language Teaching departments. The Turkish version of the scale was not created, and the original English version was used as the participants were pre-service EFL teachers with high proficiency in English. The data were analysed using SPSS 25.0. Firstly, skewness and kurtosis of the data were analysed as recommended in social sciences (Field, 2009), and they were found to be lower than p<.05. Hence, further analysis was undertaken. The frequency of each item in the KBDDS was calculated regarding the Correct, False, and Do Not Know options via descriptive statistics. Then, the results of the three factors were also checked to see whether there was variation depending on the variables via the Kruskal Wallis Test. Afterwards, in line with the second research question, whether the variables grade and gender had any effects was checked. Providing the three most common options from Correct, False, and Do Not Know was also used as a strategy to highlight the most common instances to elicit further insights, which increased the validity and reliability of the analysis.

Findings

As seen in Table 2 below, the findings suggest that pre-service EFL teachers' level of knowledge about dyslexia is low: they tended to answer the questions with either an incorrect answer or the Do Not Know option (See Appendix A for details). As shown below, for the KBDDS in general, the rate of correct answers is 52,1%. It is 49,5% for General Information, 56,9% for Diagnosis, and 51% for Treatment factors. This demonstrates that the participants chose incorrect answers or declared insufficient knowledge in around half of the items.

Table 2. Descriptive results of the KBDDS.

	Percentage of Correct Answers	Percentage of Wrong Answers	Percentage of Do Not Know
General Information	49,5	17,7	32,8
Diagnosis	56,9	20,2	22,9
Treatment	51	11,4	37,6
Total	52,1	16,8	31,1

The second research question aimed to find out whether the two variables (i.e., gender and grade) had any effect on the participants' level in KBDDS. Neither of the variables was found to have a significant correlation with the participants' level in KBDDS. The analysis in Table 3 showed that gender did not have a significant effect when all the factors were taken into account. The mean scores of males were slightly higher than those of females in each dimension; however, they were not found to be significant.

Table 3. Results according to gender.

	Gender	n	Mean	SD	df	t	p
f1	Male	48	1,9620	,34716	174	1,838	,068
	Female	128	1,8722	,26370			
f2	Male	48	1,7625	,43005	174	1,816	,071
	Female	128	1,6539	,32041			
f3	Male	48	2,0949	,47362	174	1,677	,095

Female	128	1,9922	,31059	

(f1: General Information, f2: Diagnosis, and f3: Treatment factors)

The analysis of grade via the Kruskal Wallis Test in Table 4 showed that grade did not have a significant effect, either. Considering the means from the 1st to the 4th grades, no patterns were observed. Hence, this shows that there was not a significant relationship between the participants' grade and their knowledge about dyslexia.

Table 4. Results according to grade.

		N	Mean	Std. Deviation	X^2	p	Significance
f1	1st grade	14	2,0084	,28150	2,702	,440	No
	2nd grade	30	1,9216	,35775			
	3rd grade	64	1,8732	,28419			
	4th grade	68	1,8849	,26511			
f2	1st grade	14	1,6786	,28603	7,213	,065	No
	2nd grade	30	1,7867	,45008			
	3rd grade	64	1,7156	,31128			
	4th grade	68	1,6088	,35270			
f3	1st grade	14	2,0079	,33323	,822	,844	No
	2nd grade	30	2,0667	,41327			
	3rd grade	64	2,0365	,38340			
	4th grade	68	1,9869	,33113			

(f1: General Information, f2: Diagnosis, and f3: Treatment factors of the scale)

Discussion

In relation to the first research question, the analysis of pre-service EFL teachers' knowledge and beliefs showed that only around half of the participants could answer the items correctly (Table 1 and Appendix 1). This indicated that the participants had a significant knowledge problem regarding dyslexia, which meant that their readiness for teaching dyslexic students was at stake, and thus it should be further investigated. A closer look at Table 1 also suggested that the declaration of insufficient knowledge (i.e., Do Not Know) was three times higher than incorrect answers. This showed that the participants were aware of their lack of knowledge and had relatively fewer misconceptions about dyslexia. The percentage was especially lower for the treatment factor. Hence, it may be argued that the participants had a significant lack of information regarding how to deal with dyslexia, which is likely to affect their teaching in classrooms in the future.

The analysis regarding the most common Correct, Incorrect, and Do Not Know answers can also offer many insights into the participants' knowledge and beliefs about dyslexia. The most common correct answers all came from the General Information factor. This suggested that although the participants had problems with some particular items, they had fewer issues regarding their general knowledge of dyslexia. The three most common incorrect answers, on the other hand, can provide valuable insights into the participants' misconceptions. From the analysis of the most common three incorrect answers, it can be concluded that the participants mistakenly believed that dyslexia was related to individuals' visual perception abilities (e.g.,

dyslexics read the letters in the wrong direction). The most common misconception was assuming that dyslexics read letters and words in the reverse direction. This is supported by Washburn et al. (2014), who found that teachers thought that dyslexia stemmed from visual processing problems rather than a phonological deficiency. Also, the results showed that the participants did not know that there was a correlation between dyslexia and intelligence tests. Considering the results, it may be argued that two of the biggest misconceptions came from the Diagnosis factor, which indicated that the participants had difficulties in the diagnosis of dyslexia. This can be a very significant problem in classrooms. Teachers are some of the people who spend time with children the most. Having the ability to diagnose dyslexia is critical in detecting it and addressing it as soon as possible. Hence, it may be argued that courses that introduce Dyslexia to pre-service EFL teachers must be provided (Bos et al., 2001; Hornstra et al., 2010).

Finally, the most common Do Not Know answers were Item 27 from General Information (i.e., Problems in establishing laterality (body schema) are the cause of dyslexia), Item 7 (Most studies indicate that about 5% of school-age students have dyslexia), and 19 (Multisensory instruction is not an effective training method at the moment). These findings indicated that the participants suffered from a dire lack of knowledge about even general information. They did know the prevalence of dyslexia, which is around 1 in 20 (5%). This is a very significant finding in that there must be one or two students with dyslexia in each class, assuming class sizes of 20-40. If teachers were knowledgeable of this fact, they would likely be more aware of the prevalence of dyslexic students. This lack of knowledge naturally has significant implications for English language teacher training. Moreover, most participants did not know that multisensory instruction could help dyslexic students. Finally, they lacked information about the underlying reasons for dyslexia, one of which is problems in establishing laterality. This was also supported by the most common incorrect answers, which suggested that participants mistakenly believed that dyslexia was a result of visual perception problems.

The second research question aimed to find out whether the two variables (i.e., gender and grade) had any effects on the participants' level in KBDDS. The analysis of gender and grade showed that gender did not have significance in any of the factors. This is in line with Acharya (2016), who also found that gender did not correlate with any significant difference in participants' awareness regarding dyslexia. The analysis of grade showed that there were not any significant effects either: participants' awareness regarding dyslexia did not change significantly from the 1st to the 4th grade. This demonstrated that the undergraduate English language teaching degree they studied did not help them in this aspect at all. This is, in fact, understandable, as English language teaching programs in Türkiye and in most other countries lack specific courses on special educational needs, let alone specifically for dyslexia. As stated by Atar et al. (2021) regarding an analysis of the higher education curriculum in Türkiye and also in many other countries, there were almost no courses on dyslexia except for electives which were only theoretical and usually focused on the characteristics of students with special needs in a general sense. Consequently, it may be argued that there is a significant lack of instruction in English language teacher training programs regarding special education. Such provision could help improve pre-service EFL teachers' knowledge about dyslexia throughout their undergraduate education, and as a result, they may be prepared more for teaching students with special needs such as dyslexia.

Our study confirmed the findings from former studies in that teachers' knowledge about dyslexia is quite limited (e.g., Aktan, 2020; Balcı, 2019; Bos et al., 1999; Esen & Çiftçi, 2000; Fırat & Koçak, 2018; Mather et al., 2001; Moats, 2009; Washburn et al., 2011; Washburn et al., 2014). Moreover, because of the problems in the diagnosis of dyslexia and misconceptions about it among teachers, as shown in the analysis, it is argued that every teacher education program should include courses on dyslexia (Bos et al., 2001; Hornstra et al., 2010), specifically programs for teachers of second/foreign languages. Prospective language teachers must be able to access courses, given the rate of dyslexia among students cannot be ignored. As for creating inclusive education opportunities for all, not only teachers but also the educational system should be prepared. Moreover, the teachers should be able to cater to students with all types of learning difficulties (e.g., Atar et al., 2021). This includes more awareness about the topic of dyslexia in the community for lifelong support of dyslexic individuals in society, as it is not a curable problem (although the condition may be improved).

It is clear that further research on teachers' knowledge about dyslexia in various contexts would feed into dyslexia research and second language teaching and, in particular, English language teaching. Moreover, since research into dyslexic difficulties was conducted predominantly among those whose first language is English (Miles, 2000, p. 193), further research on different aspects of languages and their apparent effect on dyslexics is crucial to widen our understanding of the nature of dyslexic difficulties (Miles, 2000, p. 200) and testing in multilingual contexts.

Conclusion

This study has suggested that dyslexia is not the same as poor reading, but it encompasses a range of symptoms that include problems with verbal labelling, arithmetic, verbal short-term memory, and subtle speech production which can impact English language learning. The current study has shown that pre-service EFL teachers have misconceptions and a lack of information about dyslexia, especially in diagnosing it. Therefore, it is pertinent to address how pre-service teacher training in non-Anglophone contexts can facilitate more inclusive environments for dyslexic English as second/foreign language learners.

Overall, this study has helped us better understand the base knowledge of pre-service EFL teachers in Türkiye. However, more evidence is required to study the challenges of pre-service EFL teachers and dyslexic children learning EFL in Türkiye, as well as the Turkish language. Hence, there is a dire need for research into support for bilingual dyslexic English language learners to feed into pre-service and in-service teacher training programs. Studies in this area can help researchers design ways to improve English language teaching and learning for learners suffering from dyslexia to ensure fairer and more equal opportunities in education.

References

Acharya, P. K. (2016). A study on the awareness of secondary school teachers towards language learning difficulties of students. *Scholarly research journal for interdisciplinary studies, 4*(26), 2889-2898.

Allington, R. L. (1982). The persistence of teacher beliefs in facets of the visual perceptual deficit hypothesis. *The Elementary School Journal, 82*(4), 351–359. https://doi.org/10.1086/461272

Al Otaiba, S., & Lake, V. E. (2007). Preparing special educators to teach reading and use curriculum-based assessments. *Reading and Writing, 20*(6), 591-617.

Aktan, O. (2020). Determination of educational needs of teachers regarding the education of inclusive students with learning disability. *International Journal of Contemporary Educational Research, 7*(1), 149-164. https://doi.org/10.33200/ijcer.638362

Atar, C., Aslan Bağcı, Ö., & Bağcı, H. (2021). Deaf individuals and English language teaching. *TOJET: The Turkish Online Journal of Educational Technology, 20*(4), 23-28.

Balcı, E. (2019). Teachers' opinions about dyslexia and the challenges they face. *Journal of Ege Education, 20*(1), 162–179. https://doi.org/10.12984/egeefd.453922.

Bell, S., McPhillips, T., & Doveston, M. (2011). How do teachers in Ireland and England conceptualise dyslexia?" *Journal of Research in Reading, 34*(2), 171–192. https://doi.org/10.1111/j.1467-9817.2009.01419.x.

Bos, C., Mather, N., Friedman Narr, R., & Babur, N. (1999). Interactive, collaborative professional development in early literacy instruction: Supporting the balancing act. *Learning Disabilities Research and Practice, 14*(4), 227-238.

Bos, C., Mather, N., Dickson, S., Podhajski, B., & Chard, D. (2001). Perceptions and knowledge of preservice and inservice educators about early reading instruction. *Annals of Dyslexia, 51*(1), 97-120. doi:10.1007/s11881-001-0007-0.

Bradley, L., & Bryant, P. E. (1983). Categorizing sounds and learning to read: A causal connection. *Nature, 301*, 419-421. https://doi.org/10.1038/301419a0

Chourmouziadou, C. M. (2016). *Primary school teachers' knowledge about dyslexia: The Greek case* [Unpublished doctoral dissertation]. University College, London, England.

Crombie, M. (1992). *Specific learning difficulties: Dyslexia—A teachers' guide*. University of Strathclyde.

Davidson, K. (2013). Teachers' reported utilization of reading disabilities research. *Alberta Journal of Educational Research, 59*(3), 487-502.

Doğan, B. (2013). Determining Turkish language and elementary classroom teachers' knowledge on dyslexia and their awareness of diagnosing students with dyslexia. *Research in Reading & Writing Instruction, 1*(1), 20–33.

Durgunoğlu, A. Y., & Öney, B. (1999). A cross-linguistic comparison of phonological awareness and word recognition. *Reading and Writing, 11*(4), 281-299.

Echegaray-Bengoa, J., Soriano-Ferrer, M., & Joshi, R. M. (2017). Knowledge and beliefs about developmental dyslexia: A comparison between pre-service and in-service Peruvian teachers. *Journal of Hispanic Higher Education, 16*(4), 375–389. https://doi.org/10.1177/1538192717697591

Esen, A., & Çiftçi, İ. (2000). Sınıf öğretmenlerinin öğrenme yetersizliği ile ilgili bilgilerinin belirlenmesi [Identifying the elementary school teachers' knowledge about the learning disabilities]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 8*(8), 85-90.

European Dyslexia Association. (2023, July 3). *No matter which country – No matter which language – Dyslexia is everywhere.* https://eda-info.eu/what-is-dyslexia/#:~:text=Dyslexia%20occurs%20worldwide%20regardless%20of,be%20seriously%20affected%20by%20it.

Field, A. (2009). *Discovering statistics using SPSS*. SAGE Publications.

Fırat, T., & Koçak, D. (2018). Sınıf öğretmenlerinin öğrenme güçlüğünün tanımına ilişkin görüşleri [Investigating the opinions of class teachers' on the concept of learning diffuculty]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 18*(2), 915-931.

Geva, E., Wade-Woolley, L., & Michal, S. (1993). The concurrent development of spelling and decoding in two different orthographies. *Journal of Reading behavior, 25*(4), 383-406.

Helland, T., & Kaasa, R. (2005). Dyslexia in English as a second language. *Dyslexia, 11*(1), 41-60.

Hornstra, L.,Denessen, E.,Bakker, J.,Van Den Bergh, L., & Voeten, M. (2010). Teacher attitudes toward dyslexia: Effects on teacher expectations and the academic achievement of students with dyslexia. *Journal of Learning Disabilities, 43*(6), 515-529.

Johnstone, R. (2009). An early start: What are the key conditions for generalized success? In J. Enever, J. Moon & U. Raman (Eds.), *Young learner English language policy and implementation: International perspectives* (pp. 31-41). Garnet Publishing.

Johnston, V. (2019). Dyslexia: What reading teachers need to know. *The Reading Teacher, 73*(3), 339–346. https://doi.org/10.1002/trtr.1830

Kaçar, E., & Düzkantar, A. (2019). Research on the knowledge levels of teachers about learning difficulties. *The Journal of International Social Research, 12*(65), 804-819.

Kormos, J. (2017). The effects of specific learning difficulties on processes of multilingual language development. *Annual Review of Applied Linguistics, 37,* 30-44.

Kormos, J., & Mikó, A. (2010). Diszlexia és az idegen-nyelvtanulás folyamata [Dyslexia and the process of second language acquisition]. In Kormos, J., Csizér, K. (Eds.), *Idegennyelv-elsajátítás és részképességzavarok*. [Foreign language acquisition and learning disabilities] (pp. 49–76). Eötvös Kiadó.

Mather, N., Bos, C., & Babur, N. (2001). Perceptions and knowledge of preservice and inservice teachers about early literacy instruction. *Journal of Learning Disabilities, 34*(5), 472-482. https://doi.org/10.1177%2F002221940103400508

Miles, T. R. (1993). *Dyslexia—The pattern of difficulties* (Second Edition). Whurr Publishers.

Miles, E. (2000). Dyslexia may show a different face in different languages. *Dyslexia, 6*(3), 193-201.

Moats, L. C. (1994). The missing foundation in teacher education: Knowledge of the structure of spoken and written language. *Annals of Dyslexia, 44*(1), 81-102.

Moats, L. C., & Foorman, B. R. (2003). Measuring teachers' content knowledge of language and reading. *Annals of Dyslexia, 53,* 23- 45. https://doi.org/10.1007/s11881-003-0003-7

Moats, L. (2009). Knowledge foundations for teaching reading and spelling. *Reading and Writing: An Interdisciplinary Journal, 22,* 379-399.

Norton, E. S., Beach, S. D., & Gabrieli, J. D. E. (2015). Neurobiology of dyslexia. *Current opinion in neurobiology, 30,* 73-78. https://doi.org/10.1016/j.conb.2014.09.007

Piasta, S. B., McDonald Connor, C., Fishman, B. J., & Morrison, F. J. (2009). Teachers' knowledge of literacy concepts, classroom practices, and student reading growth. *Scientific Studies of Reading, 13*(3), 224-248.

Ramus, F. (2014). Neuroimaging sheds new light on the phonological deficit in dyslexia. *Trends in Cognitive Sciences, 18*(6), 274–275. https://doi.org/10.1016/j.tics.2014.01.009

Rose, J. (2009, July 3). *Identifying and teaching children and young people with dyslexia and literacy difficulties*. https://dera.ioe.ac.uk/id/eprint/14790/7/00659-2009DOM-EN_Redacted.pdf

Seçkin-Yilmaz, Ş., & A. Erim. (2019). Examination adults' knowledge about dyslexia in Turkey. *Journal of Abant Izzet Baysal University Education Faculty, 19*(3), 1102–1114. https://doi.org/10.17240/aibuefd.2019.19.49440-583895.

Shaywitz, S. E., Morris, R., & Shaywitz, B. A. (2008). The education of dyslexic children from childhood to young adulthood. *Annual Review of Psychology*, *59*, 451–475. https://doi.org/10.1146/annurev.psych.59.103006.093633

Simon, C. S. (2000). Dyslexia and learning a foreign language: A personal experience. *Annals of Dyslexia, 50*, 155–187. https://doi-org.proxybib.miun.se/10.1007/s11881-000-0021-7

Snowling, M. J. (2000). *Dyslexia* (Second Edition). Blackwell.

Soriano-Ferrer, M., & Echegaray-Bengoa, J. A. (2014). A scale of knowledge and beliefs about developmental dyslexia: Scale development and validation. *Procedia - Social and Behavioral Sciences, 132*, 203-208.

Soriano-Ferrer, M., Echegaray-Bengoa, J., & Joshi. R. M. (2016). Knowledge and beliefs about developmental dyslexia in pre-service and in-service Spanish-speaking teachers. *Annals of Dyslexia, 66*(1), 91-110.

Stanovich, K. E. (1988). Explaining the differences between the dyslexic and the garden-variety poor reader: The phonological-core variable-difference model. *Journal of Learning Disabilities, 21*(10), 590–604. https://doi.org/10.1177/002221948802101003

Snow, C. E., Griffin, P., & Burns, M. S. (Eds.). (2005). *Knowledge to support the teaching of reading: Preparing teachers for a changing world*. Jossey-Bass/Wiley.

Suárez-Coalla, P., Martínez-García, C., & Carnota. A. (2020). Reading in English as a foreign language by Spanish children with dyslexia. *Frontiers in Psychology, 11*(19). https://doi.org/10.3389/fpsyg.2020.00019

Sümer Dodur, H. M., & Kumaş, A. Ö. (2021). Knowledge and beliefs of classroom teachers about dyslexia: The case of teachers in Turkey. *European Journal of Special Needs Education, 36*(4), 593-609.

Taylor, B. M., David Pearson, P., Kathleen F. C., & Walpole, S. (1999). Beating the odds in teaching all children to read (Report for Office of Educational Research and Improvement, No: CIERA-R-2-006). https://eric.ed.gov/?id=ED436723

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of school psychology, 40*(1), 7-26.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Rose, E., Lindamood, P., Lindamood, P., Conway, T., & Garvin, C. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology*, *91,* 579–593.

Vellutino, F. R., Fletcher, J. M., Snowling, M. J., & Scanlon, D. M. (2004). Specific reading disability (dyslexia): What have we learned in the past four decades? *Journal of Child Psychology and Psychiatry, 45*, 2-40. https://doi.org/10.1046/j.0021-9630.2003.00305.x

Wadlington, E. M., & Wadlington. P-L. (2005). What educators really believe about dyslexia. *Reading Improvement, 42*(1), 16-33.

Washburn, E. K., Binks-Cantrell, E. S., & Joshi, R. M. (2014). What do preservice teachers from the USA and the UK know about dyslexia? *Dyslexia, 20*(1), 1–18. https://doi.org/10.1002/dys.1459

Washburn, E. K., Joshi, R. M., & Binks-Cantrell, E. S. (2011). Are preservice teachers prepared to teach struggling readers? *Annals of Dyslexia*, *61*, 21–43.

Wimmer, H., & Goswami, U. (1994). The influence of orthographic consistency on reading development: word recognition in English and German children. *Cognition, 51*, 91–103. doi: 10.1016/0010-0277(94)90010-8

Yin, L., Joshi, R. M., & Yan, H. (2020). Knowledge about dyslexia among early literacy teachers in China. *Dyslexia, 26*(3), 247–265. https://doi.org/10.1002/dys.1635

Appendix A. Descriptive Results of KBDDS

			Correct		False		Do Not know		
	Item No	Items	N	%	N	%	N	%	Correct Answer
Gen. Info.	1	Dyslexia is the result of a neurologically based disorder.	136	77,3	11	6,3	29	16,5	True
	2	Dyslexia is caused by visual perception deficits, producing the reversal of letters and words.	141	80,1	13	7,4	22	12,5	False
	3	A child can be both dyslexic and gifted.	159	90,3	2	1,1	15	8,5	True
	4	Dyslexic children often have emotional and social disabilities.	81	46	53	30,1	42	23,9	True
	5	The brains of individuals with dyslexia are different from those of people without dyslexia.	78	44,3	24	13,6	74	42	True
	6	Dyslexia is hereditary.	42	23,9	51	29	83	47,2	True
	7	Most studies indicate that about 5% of school-age students have dyslexia.	51	29	1	,6	124	70,5	True
	8	Dyslexia has a greater occurrence in males than in females.	40	22,7	16	9,1	120	68,2	True
	16	All poor readers have dyslexia.	1	,6	168	95,5	7	4	False
	20	Students who have reading disabilities without an apparent cause are called dyslexic.	44	25	87	49,4	45	25,6	True
	21	People with dyslexia are not stupid or lazy. Knowing about the term helps children.	165	93,8	2	1,1	9	5,1	True
	25	I think dyslexia is a myth, a problem that does not exist.	2	1,1	168	95,5	6	3,4	False
	27	Problems in establishing laterality (body schema) are the cause of dyslexia.	22	12,5	27	15,3	127	72,2	True

	29	Dyslexia refers to a relatively chronic condition that is often not completely overcome.	59	33,5	49	27,8	68	38,6	True
	30	Many students with dyslexia continue to have reading problems as adults.	82	46,6	23	13,1	71	40,3	True
	31	Many students with dyslexia have low self-esteem.	93	52,8	31	17,6	52	29,5	True
	35	Dyslexia usually lasts for a long time.	87	49,4	9	5,1	80	45,5	True
Diagnosis	9	Children with dyslexia are more consistently impaired in phonemic awareness (i.e. ability to hear and manipulate sounds in language) than any other ability.	65	36,9	37	21	74	42	True
	11	People with dyslexia have below average intelligence.	8	4,5	148	84,1	20	11,4	False
	12	The reading of students with dyslexia is often characterised by inaccuracy and lack of fluency.	144	81,8	7	4	25	14,2	True
	13	Seeing letters and words backwards is a basic characteristic of dyslexia.	125	71	17	9,7	34	19,3	False
	14	Difficulty with the phonological processing of information is one of the most important deficits in dyslexia.	110	62,5	10	5,7	56	31,8	True
	15	Intelligence tests are useful in identifying dyslexia.	24	13,6	102	58	50	28,4	True
	32	Children with dyslexia have problems with decoding and spelling but not with listening comprehension.	112	63,6	15	8,5	49	27,8	True
	33	Applying an individual reading test is essential to diagnosing dyslexia.	118	67	14	8	44	25	True
	34	Dyslexic individuals tend to spell words wrong.	131	74,4	17	9,7	28	15,9	True
	36	Dyslexia is characterised by difficulty with learning to read fluently.	129	73,3	18	10,2	29	16,5	True
Treatment	10	Modelling fluent reading is often used as a teaching strategy.	80	45,5	22	12,5	74	42	True
	17	Children with dyslexia can be helped by using coloured lenses/coloured overlays.	35	19,9	52	29,5	89	50,6	False

	18	Physicians can prescribe medications to help students with dyslexia.	39	22,2	50	28,4	87	49,4	False
	19	Multisensory instruction is not an effective training method at the moment.	11	6,3	44	25	121	68,8	False
	22	Giving students with dyslexia accommodations, such as extra time on tests, shorter spelling lists, special seating, etc. is unfair to other students.	15	8,5	148	84,1	13	7,4	False
	23	Intervention programs that emphasise the phonological aspects of language with the visual support of letters are effective for students with dyslexia.	119	67,6	4	2,3	53	30,1	True
	24	Most teachers receive intensive training in working with dyslexic children.	33	18,8	78	44,3	65	36,9	False
	26	Repeated reading techniques are useful reading material to improve reading fluency.	116	65,9	10	5,7	50	28,4	True
	28	Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.	119	67,6	10	5,7	47	26,7	True

Language Teaching and Educational Research

e-ISSN 2636-8102

Volume 6, Issue 2 | 2023

A Review on Teachers' and Teacher Candidates' Intrinsic Motivation: Self-determination Theory Perspective

Derya Uysal

To cite this article:

Uysal, D. (2023). A review on teachers' and teacher candidates' intrinsic motivation: Self-determination theory perspective. *Language Teaching and Educational Research (LATER), 6*(2), 176-198. https://doi.org/10.35207/later.1331081

LATER
http://dergipark.org.tr/later

Language Teaching and Educational Research
e-ISSN: 2636-8102 *LATER*, 2023: 6(2), 176-198
Turkish JournalPark ACADEMIC

Review Article

A review on teachers' and teacher candidates' intrinsic motivation: Self-determination theory perspective

Derya Uysal ORCID
Assistant Prof. Dr., School of Foreign Languages, Alanya Alaaddin Keykubat University, TURKIYE

Abstract

Considering the results driven by two decades of empirical work on Self-determination Theory, it is claimed students benefit from intrinsic motivation. However, teachers need to be intrinsically motivated for the profession to fully support intrinsic motivation of students. This study aims to identify the variables in a positive relationship with intrinsic, or self-determined motivation of teachers and teacher candidates based on the existing studies. It is also aimed to make suggestions on how to increase their intrinsic motivation from the perspective of self-determination theory. In this review study, qualitative document analysis method was used. 48 existing studies fulfilling the pre-determined criteria were reviewed and their results sections were analyzed to answer the research questions. Concerning the results, teachers' and teacher candidates' intrinsic motivation has an effect on competence in teaching, job satisfaction and retention, students' motivation for learning, willingness to be involved in and sustain professional development, reduced teacher burnout, goal orientation, decrease in severity of reality shock, productive teaching style, and learning styles. Besides, in case three needs (for autonomy, relatedness and competence) are fulfilled, they are likely to become more intrinsically motivated towards the teaching profession. The results are significant in terms of presenting a frame for teachers' intrinsic motivation and shedding light on the possible directions for future studies.

Received
21 July 2023

Accepted
13 October 2023

Keywords
Intrinsic motivation
Teachers
Teacher candidates
Self-determination theory
Teaching profession

Suggested APA citation: Uysal, D. (2023). A review on teachers' and teacher candidates' intrinsic motivation: Self-determination theory perspective. *Language Teaching and Educational Research (LATER), 6*(2), 176-198. https://doi.org/10.35207/later.1331081

Author(s)' statements on ethics and conflict of interest
Ethics statement: I hereby declare that publication ethics and citing principles have been considered in all the stages of the study. I take full responsibility for the content of the paper in case of dispute.
Statement of interest: I have no conflict of interest to declare.
Author contribution disclosure: Single author
Funding: None
Acknowledgements: None

Introduction

The self-determination theory distinguishes between controlled and self-determined motivation as well as intrinsic and extrinsic types of motivation because people are assumed to have not only different kinds, but also different amounts of motivation. That is, the level (how much) and orientations (what type) of motivation people have are various. Orientation of motivation is concerned with underlying attitudes or goals that lead to actions. Based on the orientation of action, motivation is divided into two classes that are intrinsic or extrinsic. When people do something as it is interesting or joyful, they display intrinsic motivation. However, when they do something because it leads to a desirable outcome, they are extrinsically motivated. Even if an action is taken for external reasons at the beginning, it may turn into intrinsic motivation as a result of internalization (Ryan & Deci, 2000). Self-determination theory classifies behaviors as intentional or motivated unlike other motivational theories that distinguish behaviors in two classes that are intentional or unintentional (Deci et al., 1991).

Three psychological needs -for autonomy, competence, relatedness- direct goal pursuits of people, which in turn determines autonomous, or self-determined behavior. When these three needs are completely fulfilled, intrinsic motivation occurs. However, sometimes the internalization process might fail or succeed to different degrees. As a result, values and regulations remain external or partially internalized. As a result, unlike some other perspectives, self-determination theory claims extrinsic motivation is still autonomous, but to different degrees. Self-determination theory classifies extrinsic motivation into four types considering the degree to which it is autonomous (Deci & Ryan, 2000).

Figure 1. The self-determination continuum (Ryan & Deci, 2000)

Behavior	Non-self-determined					Self-determined
Type of motivation	Amotivation	Extrinsic motivation				Intrinsic motivation
Type of regulation	Non regulation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation
Locus of causality	Impersonal	External	Somewhat external	Somewhat internal	Internal	Internal

Figure 1 illustrates the self-regulatory, perceived locus of causality, and motivational bases of behaviors that vary in the degree to which they are self-determined. Amotivation is placed at the far left of the continuum as it refers to non-regulation and non-self-determination while intrinsic motivation is placed at the far right of the continuum as it refers to self-determined and internal regulation.

First, external regulation refers to the least self-determined form of external motivation. Obtaining a tangible reward or avoiding a threat control externally motivated behaviors. Second, partially internalized behaviors refer to introjection. Introjected behaviors have not been

harmonized with the self, so they are not self-determined. Specific others control introjected regulations. Self-worth (pride) or threats of guilt and shame are the prototypes of these types of behaviors. Third, identification occurs when people appreciate the value of an action. For example, when a student wants to learn English as he or she thinks it is important in professional work life, that is identified regulation. The action becomes part of identity; however, the behavior is still instrumental. Introjected motivation is not as autonomous as identified motivation. Fourth, integration is the most autonomous form of external motivation. Behavior has been completely internalized and people have fully harmonized it with their self. Last, amotivation refers to nonregulation and nonself-determination (Deci & Ryan, 2000; Ryan & Deci, 2000). Ryan and Deci (2000) have placed motivation types along a continuum considering their level of self-determination and control.

Concept of motivation is significant in terms of positive outcomes such as better learning, higher self-esteem, higher self-competence and higher self-efficacy, and higher quality learning, so awareness about motivation types and their roles are pivotal in academic contexts (Koludrović & Ercegovac, 2015). This explains why various motivation theories have been put forward and investigated in relation to the teaching profession so far. Unlike the earlier motivational theories that distinguish extrinsic and intrinsic motivation and find extrinsic motivation provoked by rewards or punishment superior to intrinsic motivation, contemporary theories emphasize that teachers should promote intrinsic motivation because it contributes more to positive outcomes in terms of teachers and students (Deci & Ryan, 2013; Deci et al., 1994; Ryan & Deci, 2019).

In this regard, a special attention needs to be paid to self-determination theory that puts an emphasis on the inherent curiosity of people and their love of learning. People want to internalize values and knowledge surrounding them. When educators prefer guiding learning processes through external controls such as rewards, reinforcements, or punishments rather than resources provoking joy, interest, and satisfaction; they replace positive feelings associated with learning with the negative ones such as anxiety, low-self-esteem, or boredom (Ryan & Brown, 2005).

Therefore, teachers should make every effort to develop intrinsic motivation that lead students to be interested in what is taught and allow real learning to occur in classrooms. In other words, students should desire to learn something as they find it enjoyable, not for instrumental reasons. Based on the results driven by two decades of empirical work, it could be claimed that students benefit from autonomous motivation in educational settings (Reeve, 2002; Reeve, 2006). However, teachers themselves need to be intrinsically motivated for the teaching profession to fully support intrinsic motivation of their students.

Similarly, a number of existing studies prove the significance of developing teachers' intrinsic motivation. One of these studies revealed that motivational constructs positively influence the professional development of teachers (Durksen et al., 2017). Also, intrinsically motivated teachers are more likely to internalize educational reforms, which help school reformers overcome the problem of predictable failure (Assor et al., 2009). Lastly, according to results of a meta-analysis study, autonomous motivation positively correlates to adaptive outcomes and negatively correlates to maladaptive outcomes (Vasconcellos et al., 2020). Taken together, it could be claimed that intrinsic motivation is in a positive relationship with positive outcomes in the teaching profession. However, results of the existing research show that teachers may not be intrinsically motivated for teaching.

For instance, according to Spittle et al. (2009), teaching is a profession with an attrition rate of 30% for early career teachers and the profession struggles to attract and maintain new graduates. Therefore, studies exploring motivation types of teachers and teacher candidates are useful in terms of designing curricula for training them. Defining academic motivation of teachers and teacher candidates is beneficial for teacher trainers and administrators to take necessary precautions to support intrinsic motivation. Similarly, exploring the relationship between intrinsic motivation and positive outcomes related to the teaching profession helps target community (teacher trainers, faculty members and administrators) get a perspective on reasons of creating a learning and work environment that support intrinsic motivation. Last, suggestions on how to support intrinsic motivation of teachers and candidate teachers present the techniques helpful in increasing intrinsic, or autonomous motivation. Briefly, findings of this study inform teacher recruitment and retention policies as well as the planning of effective teacher education programmes and wider education policy.

This review study aims to identify the variables that are in a positive relationship with intrinsic, or self-determined motivation of teachers and teacher candidates based on the existing studies. Also, the study aims to make suggestions on how to increase intrinsic motivation of the target group from the perspective of self-determination theory. Keeping these aims in mind, the researcher examined the results of the existing studies that demonstrated a positive relationship between intrinsic motivation of teachers and teacher candidates and some variables related to teaching profession. Answers were sought to the following questions:

- What type of academic motivation teachers and teacher candidates have for teaching profession according to the results of the existing studies?
- What are the variables in a positive relationship with intrinsic motivation of teachers and teacher candidates according to the results of the existing studies?
- How can intrinsic motivation of teachers and teacher candidates be promoted from the perspective of self-determination theory?

Methodology

This paper presents the results of a review study on teachers' and teacher candidates' intrinsic motivation from Self-Determination Theory perspective. A qualitative method, document analysis, was adopted in the study. Review process of the study was carried out from June, 2020 to March 2021 and 38 studies were included into the study. Between June 2022 and Jan, 2023, the pool of articles was updated and 10 more articles were added. As a result, 48 articles in total were reviewed for this study. The results of the studies in the initial pool were analyzed and reported from March, 2021 to August 2021. After updating the pool, the results of the analysis were updated accordingly.

Selection of the articles

Three steps were followed in review and analysis process. First, the studies investigating the predetermined topic were searched with these keywords in the databases: intrinsic motivation, self-determined motivation, self-determined behavior, autonomous motivation, autonomous behavior (and their Turkish equivalents: içsel motivasyon, içsel güdülenme, otonom güdülenme, otonom davranış, öz-belirleme teorisi). Target articles were searched in the web of science, ERIC, and TÜBİTAK ULAKBİM TR Dizin databases. As the scope of self-determination

theory was not restricted with education, more than five hundred studies were reached. However, only the ones in the field of education were saved in a folder. In the second step, these studies were examined and the ones fulfilling the following criteria were selected and saved in another folder.

- ✓ Studies investigating teachers' or teacher candidates' motivation in relation two different variables
- ✓ Studies that proved a positive relationship between intrinsic motivation of teachers or teacher candidates and positive outcomes related to the teaching profession
- ✓ Studies whose participants are teachers or teacher candidates
- ✓ Studies published in 2000 and after
- ✓ Studies indexed in Web of Science (ESCI and SSCI), ERIC, and TÜBİTAK ULAKBİM TR Dizin databases
- ✓ Studies exploring students' intrinsic motivation were excluded
- ✓ Meta-analysis, meta-synthesis, and scale development studies were excluded

As a result of the second step, 48 studies in total were determined and included in this study. (The study's articles were shared to the research community: https://osf.io/bx84t/) In the third step, the results of the studies were summarized in an excel file. In this excel file, following titles were used for coding the articles: title of the study, authors of the study, year of the study and results of the study.

Analysis of the data

Results section of all 48 articles were analyzed following the steps suggested by Bowen (2009). Document analysis involves skimming (superficial examination), reading (thorough examination), and interpretation. This iterative process combines elements of content analysis and thematic analysis. Content analysis is the process of organizing information into categories related to the central questions of the research (Bowen, 2009). In this process, first, a framework is created by using the categories in documents, observations, interviews, or literature. Second, the data is analyzed according to these categories (Yıldırım & Şimşek, 2003). Thematic analysis is useful in uncovering themes pertinent to the phenomenon explored. During this process, the reviewer takes a closer look at the selected data and performs coding and category construction. Predefined codes may be used during this process.

During the content analysis, three categories created in line with the three research questions were used as a framework and the data gathered were coded according to three shared categories. Three shared categories were 1- academic motivation types of teachers and teacher candidates, 2- positive outcomes in a positive relationship with intrinsic motivation of teachers and teacher candidates, 3- the suggestions on how to promote intrinsic motivation among the target group. After that, the thematic analysis was used to reveal the themes related to each of these three pre-defined codes. As a result of thematic analysis process, the themes pertinent to the phenomenon (intrinsic motivation of teachers and teacher candidates) were uncovered.

Credibility and verifiability

According to Patton (1999), for ensuring the credibility in qualitative research, the researcher has an obligation to be methodical in reporting sufficient details of data collection and the processes of analysis to permit others to judge the quality of the resulting products. Besides,

the researcher should gather high quality data. In this research the researcher limited the data with articles in Web of Science (ESCI and SSCI), ERIC, and TÜBİTAK ULAKBİM TR Dizin databases to reach high-quality data. Besides, the processes of research -review, analysis and reporting- were presented in a detailed way. For ensuring verifiability (Bowen, 2009), the list of the articles included into this study and the sources of results were shared with the community (https://osf.io/bx84t/), so it was ensured for respondents and informants to have access to the information reached and its sources.

Findings

The findings are presented considering the three research questions.

Research question 1

The first research question is "What type of academic motivation teachers and teacher candidates have for the teaching profession according to the results of the existing studies?". The results as to the first question are shown in Table 1.

Table 1. Academic motivation type

Study	Participant	Result	
Spittle et al., 2009 Spittle & Spittle, 2014	Teacher candidates	✓ ✓	high to moderate scores for extrinsic motivation for teaching despite quite low amotivation toward teaching, highest level of amotivation is in third year
Kaldi & Xafakos, 2017	Teacher candidates	✓ ✓	very high levels of intrinsic and identified motivation to teach medium levels of introjected regulation for teaching
Taylor et al., 2008	Teacher candidates	✓	low to moderate level of self-determined motivation
Koludrović & Ercegovac, 2015	Teacher candidates	✓ ✓	the highest level of motivation type is extrinsic identified motivation followed by external motivation and intrinsic motivation participants scored lowest on amotivation
Wang & Liu, 2008	Teachers	✓	high intrinsic and identified regulations towards NE (national education)
In de Wal et al., 2014	Teacher candidates	✓ ✓ ✓	48% of the teachers are moderately motivated (medium–high intrinsic motivation and identified regulation, and medium–low introjected and external regulation) 13% of the participants are externally motivated 39% of the participants are either highly autonomous or extremely autonomous
Yüce et al., 2013	Teacher candidates	✓	participants choose teaching professions for extrinsic (36.75%) and intrinsic (30.02%) motives
Tekin, 2016	Teacher candidates	✓	intrinsically motivated to teach, rather than being extrinsically motivated
Yıldız & Kılıç, 2021a	Teachers	✓	High level of identified regulation (6.06) and introjected motivation (5.89), moderate level of intrinsic motivation (4.79) and low level of amotivation (1.32)
Yüner, 2020	Teacher candidates	✓	Intrinsic and external academic motivations that are higher than the moderate level, low level of amotivation
Taşkesen, 2019	Teacher candidates	✓	A high level of intrinsic and extrinsic motivation and low level of amotivation

As illustrated in Table 1, intrinsic motivation of the target group (teachers and teacher candidates) varies in degree. However, considering the results, it could be claimed that teachers are extrinsically motivated as well as intrinsically motivated. Despite the scarcity of the studies

describing amotivation level of teachers, their amotivation level is quite low compared to other types of motivation. As the studies exploring the academic motivation of teachers are not high in number, it is hard to come to a valid conclusion, so there is a need for studies exploring the academic motivation of both in-service and pre-service teachers. The results of the existing studies reveal that number of teacher candidates with amotivation is quite low, which means that pre-service teachers consciously preferred the profession because of intentional -internal or external- reasons. The decision to become a teacher is not unintentional for most of the teacher candidates.

Research question 2

Second research question is "What are the variables in a positive relationship with intrinsic motivation of teachers and teacher candidates according to the results of the existing studies?". Existing studies prove that intrinsic motivation is in a positive relationship with a number of positive outcomes related to teaching profession (Table 2).

Table 2. Positive outcomes in a positive relationship with intrinsic motivation

Study	Participant	Positive outcomes
Kaldi & Xafakos, 2017	Teacher candidates	
Wang & Liu, 2008	Teachers	Competence in teaching
Taylor et al., 2008	Teacher candidates	
Perlman, 2013	Teacher candidates	
Yüner, 2020	Teacher candidates	
Bruinsma & Jansen, 2010	Teacher candidates	
Özder & Motorcan, 2013	Teacher candidates	
Yıldız & Kılıç, 2021b	Teachers	
Atik & Çelik, 2021	Teacher candidates	Job satisfaction and retention
Kırkağaç & Öz, 2017	Teacher candidates	
Zembat et al., 2018	Teacher candidates	
Taşkesen, 2019	Teacher candidates	
Topoğlu, 2022	Teacher candidates	
Roth et al., 2007	Teacher candidates	
Niemiec & Ryan, 2009	Teachers	
Assor et al., 2002	Teachers	
Bieg et al., 2011	Teachers	Students' motivation for learning
Reeve & Jang, 2006	Teacher candidates	
Reeve, 2002	Teachers	
Black & Deci, 2000	Teachers	
Reeve et al., 2004	Teachers	
Kaplan & Madjar, 2017	Teacher candidates	
Koestner & Losier, 2002	Teachers	Willingness to involve in and sustain
In de Wal et al., 2014	Teachers	professional development
Gorozidis & Papaioannou, 2014	Teachers	
Fernet et al., 2004	Teachers	Reducing teacher burnout
Fernet et al., 2012	Teachers	
Malmberg, 2006	Teacher candidates	Goal-orientation
Gorozidis & Papaioannou, 2016	Teachers	
Kim & Cho, 2014	Teacher candidates	Decrease in severity of reality shock
Hein et al., 2012	Teachers	Teaching styles of teachers
Uysal, 2022	Teacher candidates	Learning styles of pre-service teachers

As seen in Table 2, intrinsic motivation has an effect on a number of variables that influence teaching skills of teachers and teacher candidates as well as learning process of students. These variables are as follows:

Competence in teaching

Relationship between intrinsic motivation and competence in teaching was proved by a number of studies (Kaldi & Xafakos, 2017; Taylor et al., 2008; Wang & Liu, 2008; Yüner, 2020). A study conducted with primary school teacher candidates showed that intrinsic and integrated motivation along with support presented by teacher trainers in faculties of education positively influence teacher candidates' self-competence in teaching. Also, there is a correlation between their' introjected regulation and instructional competence, which most probably means that they feel responsible when they cannot successfully display elements of instructional competencies (Kaldi & Xafakos, 2017).

Similarly, a study exploring the motivation types of teachers teaching National Education lessons in Singapore showed that the more self-regulated the teachers are, the more competent they feel in teaching the lesson and the more satisfied they are with the national education program provided by teacher training courses (Wang & Liu, 2008). Results of another study proved that it is more likely that when teachers are highly autonomous, they tend to seek out ways leading to active engagement so they feel related to their students and colleagues, competent when teaching, and autonomous in deciding their actions (Taylor et al., 2008).

Although it did not directly examine the relationship between intrinsic motivation and competence, the results of some existing studies demonstrated that intrinsic motivation of teacher candidates support the variables that affect teaching competence positively. A study by Perlman (2013) proved a positive correlation between intrinsic motivation and professional commitment along with professional knowledge which indirectly affect teaching competence. In the study conducted with 68 undergraduate Physical and Health Education teacher candidates, it was found that highly self-determined teacher candidates outperformed others in terms of professional commitment and knowledge. This finding shows that a high level of self-determined motivation is an indicator of effective teaching practices because while professional knowledge, or understanding of subject specific content and teaching principals help teachers meet different needs of diverse students, commitment helps them adopt ideal teacher dispositions towards being a quality teacher (Perlman, 2013).

Job satisfaction and retention

Studies exploring the teacher training program's quality provide evidence on the relationship between teachers' retention as a result of job satisfaction and their intrinsic motivation. A study proving this relationship was conducted by Bruinsma and Jansen (2010) with teacher candidates. According to the results of the study, intrinsically motivated teacher candidates have more positive perceptions of learning experiences in faculties of education and quality of teacher training program, which is related to their decision to remain in the profession. On the other hand, extrinsic motivation indicates negative experiences during the training process and expectation about spending less time in the profession (Bruinsma & Jansen, 2010).

Likewise, according to the results of another study, high academic motivation results in high academic achievement. The more intrinsically motivated teacher candidates are, the more

they get pleasure from the activities presented during the teaching process, which is a significant factor in increasing their intrinsic motivation level for teaching profession (Atik & Çelik, 2021; Özder & Motorcan, 2013; Kırkağaç & Öz, 2017; Taşkesen, 2019; Zembat et al., 2018). Also, in a study conducted with teacher candidates, it was revealed that the candidates with high level of amotivation were more likely to fail the courses because of absenteeism while the ones that did not fail the course were more likely to have intrinsic motivation (Topoğlu, 2022). Last, concerning teachers, a positive relationship between job satisfaction and intrinsic motivation as well as a negative relationship between teacher burnout and intrinsic motivation was found (Yıldız & Kılıç, 2021b).

Students' motivation for learning

Intrinsic motivation of teachers is pivotal in terms of students' motivation for learning according to the results of many existing studies. Existing studies give evidence on the relationship between teachers' autonomous motivation and self-perceived competence in teaching, which affected students' motivation for learning (Niemiec & Ryan, 2009; Roth et al., 2007). Similarly, intrinsic motivation was found to be in a positive relation with such factors as sense of self-accomplishment and self-engagement (Kaplan & Madjar, 2017). The findings of the studies revealed that teachers' autonomous motivation for teaching promotes students' autonomous motivation for learning because students perceive teaching processes managed by autonomously motivated teachers as autonomy-supportive, which lead to autonomous motivation for learning among students (Niemiec & Ryan, 2009; Roth et al., 2007).

Similarly, this result was confirmed by a number of studies that sought an answer for the question whether teachers with higher levels of intrinsic motivation for teaching promote intrinsic motivation of students for learning (Assor et al., 2002; Roth et al., 2007). The intrinsic motivation of the students rises when they perceive their teacher as autonomy supportive and caring (Bieg et al., 2011; Reeve & Jang, 2006). Instructional behaviors that correlate positively with students' autonomy are as follows: creating time for independent work, listening, praising signs of improvement and mastery, allowing them to have their say, encouraging student's effort, being responsive to the student's questions, giving advice about how to progress when students feel stuck, and acknowledging their perspective and experiences.

An existing study by Black and Deci (2000) shed light on the effect of perceived leader autonomy on self-regulation for studying the subject of the course and student performance. According to the findings of the study, students' perceptions of leader autonomy increased autonomy of self-regulation for studying the subject. Also, their perceived competence and positive feelings increased while their negative feelings diminished. As a result, students performed better in the course when they perceived their leaders as more autonomy supportive. Specifically, students' performance was moderated by their initial level of autonomy along with the instructor's autonomy support. If they found instructor autonomy supportive, the students displaying a low level of autonomy at the beginning of the course performed better at the end of the course. Regarding the students with a high level of autonomy at the beginning of the course, their performance was not influenced by their perception of the instructor as autonomy supportive or not. It seems perceived leader autonomy is beneficial for students with a low level of autonomy.

Based on conclusions driven by these empirical studies, it could be claimed that when teachers are autonomy-supportive, students benefit. Autonomous motivation of teachers is significant in terms of quality of students' motivation, academic achievement, learning, and willingness to stay at school (Reeve, 2002; Reeve et al., 2004).

Willingness to involve in and sustain professional development

Results of some existing studies have proved the positive effect of intrinsic motivation on teachers' willingness to involve in and sustain professional development. The study that explored motivational profiles of Dutch secondary school teachers in relation to professional development indicated that extremely autonomous teachers have a very high level of identified regulation and intrinsic motivation and they are the first and foremost to engage in professional development activities as they find these activities valuable, interesting, enjoyable and important. Thus, they actively engage in the activities in the short-term and sustain these activities even if they don't think they are enjoyable (Koestner & Losier, 2002). On the contrary, externally regulated teachers have non-optimal motivation for professional development because they are less engaged in such activities, both in quality and frequency. Their participation in professional development activities are fed by encouragement of others (In de Wal et al., 2014).

Similarly, the study carried out with Greek teachers gave evidence on the positive correlation between teachers' intrinsic motivation and intentions to implement innovative subjects. As a result of the study by Gorozidis and Papaioannou (2014), it was found out that autonomous motivation had a positive impact upon teachers' willingness to implement innovative subjects. Compared to their externally motivated counterparts who preferred to participate in in-service training to get a certificate, autonomously motivated teachers sustained prolonged involvement in innovative professional learnings. To put it in another way, although both externally and autonomously motivated teachers showed enthusiasm for participation in training in case they were delivered certificates, only autonomously motivated teachers had intentions to future implement the innovative subjects despite the workload and absence of certification.

Reducing teacher burnout

The existing studies that explored the relationship between teacher burnout and self-determined motivation or intrinsic motivation proved that intrinsic motivation is significant in reducing emotional exhaustion that leads to burnout. Regarding the relationship between intrinsic motivation and job demands, a study by Fernet et al. (2004) revealed that when facing job demands, feeling of job control is important in reducing emotional exhaustion for the people with perceived self-competence and a high self-determined motivation. However, for the people with a low level of self-determined motivation, job control does not play a stress-reducing role when facing job demands. Similarly, findings of another existing study (Fernet et al., 2012) are in line with this result. In addition to the widely-recognized role of self-efficacy in reducing teacher burnout, self-determined motivation plays a key role in reducing stress and exhaustion. Compared to the highly motivated ones, teachers who perceive themselves as less autonomously motivated and efficacious in accomplishing tasks teaching profession requires are more likely to feel greater exhaustion at the end of the school year.

Goal-orientation

In a two-phase study carried out by Malmberg (2006), it was investigated if type of motivation constitutes a foundation for goal-orientation of teacher candidates and the results showed a relationship between intrinsic motivation and mastery goals as well as extrinsic motivation and avoidance goals. Indicators of mastery goals are positive behaviors related to teaching profession such as help seeking, deep learning strategies, and well-being while avoidance goals indicate maladaptive behaviors such as low graded performance, lack of help seeking, and self-handicapping. Likewise, the study conducted by Gorozidis and Papaioannou (2016) indicated that while performance avoidance goal orientation had an insignificant relationship with autonomous motivation, it positively correlated to controlled motivation. Teachers with controlled motivation participate in training or implement innovations as a result of external factors such as avoidance of unfavorable judgments. Thus, in the absence of these factors, they are more likely to give up making an effort for professional development.

Decrease in severity of reality shock

The evidence supporting the role of intrinsic motivation on decreasing severity of reality shock experienced in earlier times of the teaching profession comes from a single study by Kim and Cho (2014). According to the results of the study, when the perceived self-efficacy of a teacher candidate is high, high intrinsic motivation is effective in decreasing the severity of reality shock experienced during the first year of the profession. However, the same result is not observed when the perceived self-efficacy is low. Therefore, it could be claimed that intrinsic motivation is necessary, but it is insufficient, to develop a positive outlook on the future reality of teaching. As there is not sufficient evidence regarding the relationship between intrinsic motivation and severity of reality shock, further studies are needed in order to explore this potential relationship deeply.

Teaching styles of teachers

Teaching styles of teachers are affected by their motivation types. A study by Hein et al. (2012) investigated correlations between productive or reproductive teaching styles of teachers and their motivation type and the results proved that physical education teachers having intrinsic and introjected motivation adopted productive teaching styles more frequently. While productive teaching styles consist of student-centered techniques and they are more beneficial in terms of promoting lifelong physical education habits, reproductive teaching styles are more teacher-centered and appropriate for motor skill acquisition. Similar to the severity of reality shock, there exists only one study that explored the relationship between teaching styles and motivation types of teachers. Therefore, this relationship needs to be confirmed with further studies.

Learning styles of pre-service teachers

Results of a recent study by (Uysal, 2022) demonstrated the relationship between academic motivation types and learning styles of candidate EFL teachers. While candidate teachers with diverging learning style adopted externalized regulation, the ones with assimilating style preferred knowing motivation, and the ones with converging style adopted externalized regulation. Considering the nature of education offered in faculties of education,

pre-service training includes theoretical content rather than practical work. Assimilators are good at theoretical work. Thus, it is likely that teacher candidates with assimilating learning style felt more competent, autonomous, and related during their pre-service training and they are likely to develop intrinsic motivation toward teaching. The study's results are significant in terms of designing curriculums that address different learning styles.

Research question 3

The third question of the study is "How can we promote intrinsic motivation in teachers and teacher candidates from the perspective of self-determination theory?". In line with this question, the ways of increasing intrinsic motivation of teachers and teacher candidates are discussed.

Self-determination theory itself evidences that in order to increase self-determined motivation of teachers and teacher candidates, their three needs for relatedness, competence and autonomy should be met (Deci et al., 1991). Obviously, basic need for satisfaction of teachers could be enhanced in case schools and school leaders could make some changes to the work environments of target groups (Gorozidis & Papaioannou, 2014). First, the ways of how to enhance autonomous motivation among teacher candidates and teachers are explained in relation to three basic needs for relatedness, for competence, and for autonomy. Also, results of studies exploring the change in intrinsic motivation level of teachers after the implementation of an autonomy supportive training are presented in this section. The results as to the third research question are summarized in Table 3.

Table 3. Suggestions to increase intrinsic motivation

Study	Participants	Suggestions to increase the need for three basic needs
Kaldi & Xafakos, 2017	Teacher candidates	1-high levels of support from teacher trainers and other faculty members
Niemiec & Ryan, 2009	Teachers	2-school perceived strong in collegiality
Lam et al., 2010	Teachers	
Cece et al., 2022	Teachers	
Schellenbach-Zell & Gräsel, 2010	Teachers	3-educational projects supporting teachers' feeling of relatedness
Lam et al., 2010	Teachers	
Uysal, 2022	Teacher candidates	4-increase the amount of practical work during pre-service education
Koludrović & Ercegovac, 2015	Teacher candidates	
Niemiec & Ryan, 2009	Teachers	5-feedback as to effectiveness of the tasks and providing challenging tasks in the education process
Wang & Liu, 2008		6-decreasing pressure on and interference with teachers' practices
Ryan & Deci, 2019	Teachers	
Taylor et al., 2008	Teachers	
Pelletier et al., 2002	Teacher candidates	
Niemiec & Ryan, 2009	Teachers	
Martinek, 2019	Teachers	
Deci & Ryan, 2000	Teachers	7-school principals that encourage teachers to participate in major decisions about the school
Roth et al., 2007	Teachers	

Carson & Chase, 2009	Teachers	8-administrators encouraging teachers to take part in professional development activities
In de Wal et al., 2014	Teachers	
Power & Goodnough, 2019	Teachers	9-Organizing effective autonomy-supportive trainings for teachers
Reeve, 2002	Teachers	
Reeve, 2006	Teachers	
Reeve et al, 2004	Teachers	

A network of sources of support in faculties of education

Regarding the need for relatedness, results of the studies show that support from faculties of education affected intrinsic motivation of teacher candidates significantly. The study conducted by Kaldi and Xafakos (2017) proved that a network of sources of support and autonomous motivation are necessary in the process of becoming a teacher. Prospective teachers can increase their intrinsic motivation to teach when they receive high levels of support from teacher trainers and other faculty members. Both personal characteristics of teacher candidates and types of motivation should be acknowledged as an important part of the undergraduate studies.

School environment perceived strong in collegiality

A study examining the role of teacher motivation in implementing educational innovations suggested that contextual factors are pivotal in raising teacher motivation that initiate and persist an educational innovation. Teachers have higher motivation for implementation of innovations that demand extra effort and time in case they perceive their school as strong in collegiality and supportive of teacher autonomy and competence. In other words, school collegiality and support directly or indirectly influence teacher motivation (Cece et al., 2022; Lam et al., 2010). Similarly, the strategies proposed by Niemiec and Ryan (2009) to enhance relatedness at schools are conveying warmth, caring, and respect, which means creating a collaborative school environment is necessary to fulfill the need for relatedness.

Educational projects supporting teachers' feeling of relatedness

A study by Schellenbach-Zell and Gräsel (2010) indicated that the educational projects supporting teachers' feelings of self-competence and relatedness provoked their self-determined motivation to participate in a project. These findings are significant for educational authorities and policy-makers planning to initiate education reforms (Lam et al., 2010). Teachers' perspectives and experiences need to be appreciated in order to promote these feelings while determining educational reforms and innovations.

Increasing the amount of practical work during pre-service education

In order to fulfill teacher candidates' need for competence, it is necessary to increase the amount of practical work during pre-service education. According to results of a study, compared to graduate students, undergraduate students have significantly higher levels of internal regulation. This positive shift in motivation of the students probably stems from the content and the teaching methodology aspects of courses. Students are expected to realize some obligations such as observations in lessons, conducting action research, and instructing in educational

institutions in the final year of the undergraduate level teacher education and in graduate level. Thus, it may be assumed that practical rather than theoretical teaching processes contribute to the intrinsic motivation of students (Koludrović & Ercegovac, 2015; Uysal, 2022). To consider the self-determination theory aspect, practical teaching processes might fulfill self-competence of candidate teachers, which in turn increases intrinsic motivation.

Providing feedback and challenging tasks

The strategies proposed by Niemiec and Ryan (2009) to enhance competence include adopting feedback as to effectiveness of the tasks and providing challenging tasks in the training process. This finding is significant in terms of designing the curriculum used in faculties of education and presenting feedback for teacher trainers.

Decreasing pressure on and interference with teachers' practices

According to the existing studies, decreasing pressure on and interference with teachers' practices is the initial condition to satisfy the need for autonomy. The more teachers' needs are satisfied and the more self-determined they become, the better they understand their students. As a result, they become more enthusiastic about providing them with necessary help. While collaboration between administration and teachers evokes satisfaction among teachers, performance evaluation, pressures from the school authorities, and time constraints undermine their self-autonomy.

According to the study by Taylor et al. (2008) perceived job pressure impacts upon teachers' psychological need for satisfaction negatively. Likewise, according to the results of the study by Pelletier et al. (2002), the less teachers perceive pressure at work (pressure to comply with a curriculum, with performance standards, or with colleagues) and the more they perceive students to be self-determined toward school, the more they become self-determined toward their work. In turn, they become more autonomy supportive with their students. Therefore, teacher educators or administrators need to minimize pressure and control, provide a flexible learning or work environment, and acknowledge feelings in the learning or working environment in order to enhance autonomy (Martinek, 2019; Niemiec & Ryan, 2009). Lastly, local and national policies of education strongly affect teachers' autonomous motivation for teaching. For instance, evaluating teachers' performance based on scores students get from central exams diminish autonomous motivation among teachers (Pelletier et al., 2002).

Additionally, a suggestion on how to support self-determined motivation of teachers through fulfilling their need for competence comes from the self-determination theory itself. Cognitive evaluation theory, a mini-theory within self-determination theory, states that conditions of the social environment positively impact upon intrinsic motivation (Ryan & Deci, 2019). One of the prepositions in this sense is the significance of the external events perceived by the actors. The actors may perceive these events as either informational, amotivating, or controlling. The events providing feedback about one's competence are informational events and they enhance intrinsic motivation. While controlling events apply pressure to think or act in a certain way, amotivating events don't carry any feedback about autonomy or competence. In case actors perceive an external event as amotivating or controlling, their intrinsic motivation will be diminished (Wang & Liu, 2008). Therefore, the administrators providing flexibility in

working place of teachers are more likely to meet the need for competence compared to their counterparts that adopt a controlling approach.

School principals that encourage teachers to participate in major decisions about the school

Self-determination theory (Deci & Ryan, 2000) states that when individuals feel the support of other people in a social context, they are likely to be autonomously motivated. To provide autonomy support, feelings of people should be acknowledged and respected, they should be presented with choices and their relevance should be fostered. When school principals encourage teachers to participate in major decisions about the school and devote an effort to understand the needs of teachers, they could promote autonomous motivation for teaching and autonomous motivation for learning. The study by Roth et al. (2007) showed that the meetings held to discuss innovations and school reform led feelings of safety, care and growth among teachers and consequently increased their sense of autonomy.

Administrators encouraging teachers to take part in professional development activities

Regarding teachers, Carson and Chase (2009) state that administrators encouraging teachers to take part in professional development activities play a supportive role in promotion of self-determined motivation. Similarly, In de Wal et al. (2014) suggest providing flexibility in daily timetables of training in order to enhance autonomy. If teachers decide on the content, timing and kind of the professional development activities they need, their need for autonomy and competence will be fulfilled.

Organizing effective autonomy-supportive trainings for teachers

Results of some existing studies show that in-service training designed in line with principles of self-determination theory is possible to be highly effective in supporting self-determined motivation of teachers. In a study that explored the effect of professional learning programs on primary/elementary teachers in a large-scale professional learning program, it was found out that the program succeeded in increasing autonomous motivation of the participant teachers. The program accommodated teachers' need for relatedness, autonomy and competence by providing constructive feedback and encouragement with the participants. Also, teachers were given ample time, a number of instructional resources and opportunities to showcase their skills. Lastly, the teachers could collaborate and interact with their colleges during the training, which contributed to their need for relatedness (Power & Goodnough, 2019).

In order to find out if autonomous motivation is teachable, Reeve (2002) initially defined characteristic features of autonomously motivated teachers and then created a booklet to teach these behaviors to a group of teachers. According to the researcher, autonomy supportive teacher behaviors are as follows (Reeve, 2002; Reeve, 2006):

- They minimize time for holding instructional materials while maximizing time for listening
- They spare time for individual work of students
- They provide clues instead of solutions to the problems students encounter
- They avoid criticism and directives while praising mastery
- They appreciate student-generated questions

- Contrary to controlling teachers who feel responsible for the teaching process, expect single and right answers, and motivate them through external incidences; autonomy-supportive teachers are less controlling, demanding or pressuring, which promotes intrinsic motivation.

After determining these behaviors, Reeve (2002) conducted a study to explore if these behaviors were teachable. He delivered a group of teachers an informational booklet about self-determination and autonomy support. On the other hand, another group received booklets about various instructional strategies. The results of the study proved that teachers could learn how to be autonomy supportive with their students in case their prior beliefs about motivation were in agreement with autonomy support. Contrary to the control-oriented teachers who found the autonomy supportive style to be inferior, the ones who found autonomy supportive style superior to their existing style were more willing to display autonomy supportive behaviors. Similarly, in another study by Reeve et al. (2004) the teachers trained on how to support students' autonomy through a training consistent with Self-determination Theory displayed significantly more autonomy-supportive behaviors than did non-trained teachers.

Discussion and Suggestions

Considering the relationship between benefits of intrinsic motivation for students, teachers need to be intrinsically motivated towards the teaching profession. This study aims to identify the variables in a positive relationship with intrinsic, or self-determined motivation of teachers and teacher candidates based on the existing studies. It is also aimed to make suggestions on how to increase their intrinsic motivation from the perspective of self-determination theory. In this review study, qualitative data analysis method was used. 48 existing studies fulfilling the pre-determined criteria were reviewed to answer three three research questions.

Regarding the first research question - academic motivation types of teachers and teacher candidates-, it is hard to define the motivation level of teachers for the teaching profession, as there is a scarce body of literature. There seems to be a need for studies exploring this topic. In particular, the studies describing motivation types of teachers are needed because most of the studies describing academic motivation types in this study were conducted with teacher candidates. Regarding the amotivation, compared to intrinsic and extrinsic regulations, number of teacher candidates with amotivation is quite low, which means that they consciously preferred the profession because of intentional -internal or external- reasons. The decision to become a teacher is not unintentional for most of the teacher candidates.

Results of a study (Heinz, 2015) that was conducted to explore the motivation of candidate teachers in 23 different countries to choose the profession revealed that intrinsic factors are enjoyment of teaching, job satisfaction, creativity, and an interest in teaching subject(s) and these factors were most influential on the decision to remain in the profession. Extrinsic factors that motivated teachers to remain in the profession are job security, hours, pay, and status (Heinz, 2015; Akar, 2012). These findings prove that extrinsic or intrinsic reasons lead students to choose the profession, so they adopt extrinsic as well as intrinsic motivation rather than amotivation.

In line with the second question - Why do we need intrinsically motivated teachers and teacher candidates? -, the results of the existing studies were analysed considering the relationship between intrinsic motivation and positive outcomes. The results showed that teachers' intrinsic motivation positively correlates to competence in teaching, job satisfaction

and retention, students' motivation for learning, willingness to be involved in and sustain professional development, reduced teacher burnout, goal orientation, decrease in severity of reality shock, productive teaching style of teachers, and learning styles of pre-service teachers. The relationship between the intrinsic motivation and some positive outcomes needs to be confirmed by further empirical studies. Student motivation, competence in teaching, job satisfaction and retention, and willingness to involve in and sustain professional development are the topics that were frequently searched; however, findings about the relationship between intrinsic motivation and productive teaching styles, decrease in severity of reality shock, and learning styles should be confirmed by further studies. Last, there is a scarce body of literature about the relationship between teacher burnout, and goal-orientation, so further empirical studies are needed in order to confirm these potential relationships.

With regard to the relationship between intrinsic motivation of teacher and student involvement, a prior study revealed that level of student involvement early career teachers create for students in their classes is influential on their decision to remain in the profession, because involving students in lessons supports feelings of personal fulfilment and professional challenge that are significant in terms of job satisfaction of teachers (Burke et al., 2013). Similarly, another study's (Javornik Krečič & Ivanuš Grmek, 2015) results demonstrated that candidate teachers in a faculty of education chose the profession because of self-realization reasons such as setting a good model for students and a chance of using abilities such as singing, painting or dancing. The first self-realization reason is related to students' motivation for learning while use of abilities is related to competence in teaching. Therefore, the prior studies' (Burke et al., 2013; Javornik Krečič & Ivanuš Grmek, 2015) results demonstrate that the feeling of self-competence and developing teacher student rapport are the factors that support intrinsic motivation of teacher candidates.

Additionally, supportive work environment for teachers and learning environment for candidate teachers was found to be significant in terms of intrinsic motivation. This finding was confirmed by the results of the prior studies. For example, in an existing study, it was concluded that teachers that perceive work environment (school principals and colleagues) more supportive and less pressing were more autonomous in attending professional development activities (Zhang et al., 2021; Zhang et al., 2022). Similarly, the study conducted by Burke et al. (2013) evidenced that beginning teachers valued collegial support that they received in their school environments. In a similar vein, candidate teachers valued the supportive learning environments in faculties of education. According to the results of an existing study (Cherian, 2007), the students appreciated opportunities to question teaching practices. Besides, they preferred co-planning and co-teaching with associates because such techniques encouraged them to self-reflect on in-class applications and educational philosophies. On the other hand, overpressure that come from mentors and provincial standardized curriculum reforms prevented teacher candidates from exploring social justice, constructivist, and inquiry-oriented pedagogies. In conclusion, while supportive work environment or learning environment play a productive role on increasing intrinsic motivation, pressure plays a counterproductive role.

Considering the results about the third research question - How can we promote intrinsic motivation in teachers and teacher candidates? -some further studies might be useful in increasing intrinsic motivation of teachers and teacher candidates. Besides these suggestions, future research on specific topics will be useful for defining academic motivation types of

teachers and teacher candidates. Exploration of teachers' professional identity and vision formation are the ways to enhance autonomy for teaching. Similarly, the studies investigating values, dreams, or hopes of teacher candidates or the ones that have just started the profession are significant in terms of vision formation and professional identity. Besides, the studies exploring the way teachers perceive the schools are significant in terms of taking necessary precautions and seeking out solutions to encourage safe and supportive school environments. Similarly, the studies that investigate the way teacher candidates perceive education faculties are crucial to present a supportive learning environment during the pre-service training. Such studies are also crucial in terms of re-designing the curriculums used in faculties of education. Last, the studies exploring leadership type of school principals might be useful in revealing the leadership types that support intrinsic motivation of teachers. Furthermore, it is necessary to carry out curriculum development studies that aim to design in-service training curriculums on autonomy-supportive leadership for school principals. It is also necessary to evaluate them and report the results.

The results related to suggestions on how to increase intrinsic motivation of teachers and teacher candidates provides valuable clues about developing curricula for education faculties. Curricula used in faculties of education in Turkey include theory-oriented instruction and limited in-class applications at schools. In an existing study, it was reported that the rate of branch theory is 50-60 percent and the rate of professional teaching theory is 25-30 percent in the curriculum used in education faculties. Additionally, pre-service teachers have to spend 28 weeks at school in 7th and 8th semesters. During the 7th semester, they are required to observe lessons and they start to teach during the 8th semester, so they are not provided ample opportunity to teach during their pre-service training (Çakıroğlu & Çakıroğlu, 2003; Öztürk, & Aydın, 2019). However, results of the existing studies (Koludrović & Ercegovac, 2015; Uysal, 2022) demonstrate that in order to support intrinsic motivation of teacher candidates, amount of practical work needs to be increased. Practical teaching processes fulfill self-competence of candidate teachers, which in turn increases intrinsic motivation.

Professional development is another factor that support intrinsic motivation of teachers. The study by Javornik Krečič and Ivanuš Grmek (2015) demonstrated that professional guidance deep into teachers' ecological environment is useful in constructing ideal teaching processes. As a result of teaching practice on a deep level, teachers alter or reconstruct their values of professional development and make the teaching work much more meaningful, which is significant in facilitating teachers' positive feelings about the teaching process (Liu et al., 2019). In conclusion although professional development opportunities are significant in terms of reflecting on in-class practices, professional development activities push teachers to reconstruct their values and teaching practices in case they are on deep level.

Additionally, according to the results, school environment perceived strong in collegiality is a factor supporting intrinsic motivation of teachers. Similarly, in an existing study it was evidenced that beginning teachers valued collegial support that they received in their school environments as well as the opportunities for collaboration (Burke et al., 2013). The findings related to collegiality and collaboration are significant for school administrators and mentoring programs.

Last but not least, findings of some existing studies (Power & Goodnough, 2019; Reeve, 2002; Reeve, 2006) gave evidence that autonomy supportive training is effective in increasing

autonomous motivation of in-service teachers. However, no study has been conducted to explore the effect of such interventions on pre-service teachers, so further work is necessary to shed light on the effect of autonomy-supportive interventions on pre-service teachers.

Conclusion

This study aims to identify the variables that are in a positive relationship with intrinsic, or self-determined motivation of teachers and teacher candidates based on the existing studies. Also, the study aims to make some suggestions on how to increase intrinsic motivation of the teachers and teacher candidates from the perspective of self-determination theory. Keeping the aim in mind, the researcher utilized the results of 48 existing studies that explored teachers' intrinsic motivation in relation to different parameters and she sought answers to three research questions.

Initially, the study's results revealed that it is significant to integrate courses and practices into in-service and pre-service trainings. Because results of the past studies indicated that intrinsic motivation is pivotal in terms of positive teacher behaviors and students' academic success and autonomy. Besides, the results of the study presented a theoretical frame as to teachers' intrinsic motivation and shed light on the possible directions for future studies. The theoretical frame demonstrates the proper teacher behaviors affected by their intrinsic motivation level. However, some topics need to be explored more deeply, so further research is necessary. Teaching styles and learning styles are the examples of topics that need to be proved via further research. Therefore, the results of the current study are significant in terms of filling in the gaps in the related body of literature.

References

Akar, E. O. (2012). Motivations of Turkish pre-service teachers to choose teaching as a career. *Australian Journal of Teacher Education (Online)*, *37*(10), 67-84. http://ro.ecu.edu.au/ajte/vol37/iss10/5

Assor, A., Kaplan, H., Feinberg, O., & Tal, K. (2009). A learning and implementation structure promoting teachers' internalization of practices based on self-determination theory. *Theory and Research in Education*, *7*(2), 234-243. https://doi.org/10.1177/1477878509104328

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Burke, P. F., Schuck, S., Aubusson, P., Buchanan, J., Louviere, J. J., & Prescott, A. (2013). Why do early career teachers choose to remain in the profession? The use of best–worst scaling to quantify key factors. *International Journal of Educational Research*, *62*, 259-268. https://doi.org/10.1016/j.ijer.2013.05.001

Cherian, F. (2007). Learning to teach: Teacher candidates reflect on the relational, conceptual, and contextual influences of responsive mentorship. *Canadian Journal of Education/Revue Canadienne de L'éducation*, 25-46.

Çakıroğlu, E., & Çakıroğlu, J. (2003). Reflections on teacher education in Turkey. *European Journal of Teacher Education*, *26*(2), 253-264. https://doi.org/10.1080/0261976032000088774

Deci, E. L., & Ryan, R. M. (2013). *Intrinsic motivation and self-determination in human behavior.* Springer Science & Business Media. http://dx.doi.org/10.1007/978-1-4899-2271-7

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist, 26*(3-4), 325-346. https://doi.org/10.1080/00461520.1991.9653137

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, *62*(1), 119-142. https://doi.org/10.1111/j.1467-6494.1994.tb00797.x

Durksen, T. L., Klassen, R. M., & Daniels, L. M. (2017). Motivation and collaboration: The keys to a developmental framework for teachers' professional learning. *Teaching and Teacher Education*, *67*, 53-66. https://doi.org/10.1016/j.tate.2017.05.011

Heinz, M. (2015) Why choose teaching? An international review of empirical studies exploring student teachers' career motivations and levels of commitment to teaching, *Educational Research and Evaluation, 21*(3), 258-297, https://doi.org/10.1080/13803611.2015.1018278

Javornik Krečič, M., & Ivanuš Grmek, M. (2005). The reasons students choose teaching professions. *Educational Studies*, *31*(3), 265-274. https://doi.org/10.1080/03055690500236449

Liu, W. S., Li, X. W., & Zou, Y. M. (2019). The formation of teachers' intrinsic motivation in professional development. *Integrative Psychological and Behavioral Science*, *53*, 418-430.

Öztürk, G, Aydın, B. (2019). English language teacher education in Turkey: Why do we fail and what policy reforms are needed?. *Anadolu Journal of Educational Sciences International (AJESI), 9*(1), 181-213. https://doi.org/10.18039/ajesi.520842

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, *34*(5 Pt 2), 1189.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67. https://doi.org/10.1006/ceps.1999.1020

Ryan, R. M., & Brown, K.W. (2005). Legislating competence: High-stakes testing policies and their relations with psychological theories and research, A.J. Elliot and C.S. Dweck (Eds), In *Handbook of Competence and Motivation*, (pp. 354–72). Guilford Publications.

Vasconcellos, D., Parker, P. D., Hilland, T., Cinelli, R., Owen, K. B., Kapsal, N., & Lonsdale, C. (2020). Self-determination theory applied to physical education: A systematic review and meta-analysis. *Journal of Educational Psychology*, *112*(7), 1444. https://psycnet.apa.org/doi/10.1037/edu0000420

Yıldırım, A. & Şimşek, H. (2003). *Sosyal bilimlerde nitel araştırma yöntemleri*. Seçkin yayıncılık. [Qualitative Research Methods in Social Sciences]

Zhang, X., Admiraal, W., & Saab, N. (2022). Teacher autonomous motivation for continuous professional development: the relationship with perceived workplace conditions. *Teachers and Teaching*, *28*(8), 909-924. https://www.tandfonline.com/doi/epdf/10.1080/13540602.2022.2137128?needAccess=true#:~:text=https%3A//doi.org,way.

Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching*, *47*(5), 714-731.

References of the articles included in the study

1. Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, *72*, 261–278. https://doi.org/10.1348/000709902158883
2. Atik, S., & Çelik, O. T. (2021). Analysis of the relationships between academic motivation, engagement, burnout and academic achievement with structural equation modelling. *International Journal of Contemporary Educational Research, 8,* 118-130.

3. Bieg, S., Backes, S., & Mittag, W. (2011). The role of intrinsic motivation for teaching, teachers' care and autonomy support in students' self-determined motivation. *Journal for Educational Research Online*, *3*(1), 122-140. https://doi.org/10.25656/01:4685
4. Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*(6), 740-756. https://doi.org/10.1002/1098-237X(200011)84:6%3C740::AID-SCE4%3E3.0.CO;2-3
5. Bruinsma, M., & Jansen, E. P. (2010). Is the motivation to become a teacher related to pre-service teachers' intentions to remain in the profession?. *European Journal of Teacher Education, 33*(2), 185-200. https://doi.org/10.1080/02619760903512927
6. Carson, R. L., & Chase, M. A. (2009). An examination of physical education teacher motivation from a self-determination theoretical framework. *Physical Education and Sport Pedagogy, 14*(4), 335-353. https://doi.org/10.1080/17408980802301866
7. Cece, V., Martinent, G., Guillet-Descas, E., & Lentillon-Kaestner, V. (2022). The predictive role of perceived support from principals and professional identity on teachers' motivation and well-being: A longitudinal study. *International Journal of Environmental Research and Public Health*, *19*(11), 6674. https://doi.org/10.3390/ijerph19116674
8. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11(*4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01
9. Fernet, C., Guay, F., & Senécal, C. (2004). Adjusting to job demands: The role of work self-determination and job control in predicting burnout. *Journal of Vocational Behavior, 65*(1), 39-56. https://doi.org/10.1016/S0001-8791(03)00098-8
10. Fernet, C., Guay, F., Senécal, C., & Austin, S. (2012). Predicting intra-individual changes in teacher burnout: The role of perceived school environment and motivational factors. *Teaching and Teacher Education, 28*(4), 514-525. https://doi.org/10.1016/j.tate.2011.11.013
11. Gorozidis, G. S., & Papaioannou, A. G. (2016). Teachers' achievement goals and self-determination to engage in work tasks promoting educational innovations. *Learning and Individual Differences, 49*, 46-58. https://doi.org/10.1016/j.lindif.2016.05.014
12. Gorozidis, G., & Papaioannou, A. G. (2014). Teachers' motivation to participate in training and to implement innovations. *Teaching and Teacher Education, 39*, 1-11. https://doi.org/10.1016/j.tate.2013.12.001
13. Hein, V., Ries, F., Pires, F., Caune, A., Ekler, J. H., Emeljanovas, A., & Valantiniene, I. (2012). The relationship between teaching styles and motivation to teach among physical education teachers. *Journal of Sports Science & Medicine, 11*(1), 123.
14. In de Wal, J. J., den Brok, P. J., Hooijer, J. G., Martens, R. L., & Van den Beemt, A. (2014). Teachers' engagement in professional learning: Exploring motivational profiles. *Learning and Individual Differences*, *36*, 27-36. https://doi.org/10.1016/j.lindif.2014.08.001
15. Kaldi, S., & Xafakos, E. (2017). Student teachers' school teaching practice: The relation amongst perceived self-competence, motivation and sources of support. *Teaching and Teacher Education, 67*, 246-258. https://doi.org/10.1016/j.tate.2017.05.019
16. Kaplan, H., & Madjar, N. (2017, August). The motivational outcomes of psychological need support among pre-service teachers: Multicultural and self-determination theory perspectives. *Frontiers in Education 2(*42). 28-37. https://doi.org/10.3389/feduc.2017.00042
17. Kim, H., & Cho, Y. (2014). Pre-service teachers' motivation, sense of teaching efficacy, and expectation of reality shock. *Asia-Pacific Journal of Teacher Education, 42*(1), 67-81. https://doi.org/10.1080/1359866X.2013.855999

18. Kırkağaç, Ş., & Öz, H. (2017). The role of academic motivation in predicting preservice EFL teachers' achievement. *Journal of Language and Linguistic Studies, 13*(2), 96-108.
19. Koestner, R., & Losier, G. F. (2002). Distinguishing three ways of being highly motivated: A closer look at introjection, identification, and intrinsic motivation. E. L. Deci & R. M. Ryan (Eds.), In *Handbook of Self-determination Research* (pp. 101–121). University of Rochester Press.
20. Koludrović, M., & Ercegovac, I. R. (2015). Academic motivation in the context of self-determination theory in initial teacher education. *Croatian Journal of Education, 17*(1), 25-36.
21. Lam, S. F., Cheng, R. W. Y., & Choy, H. C. (2010). School support and teacher motivation to implement project-based learning. *Learning and Instruction, 20*(6), 487-497. https://doi.org/10.1016/j.learninstruc.2009.07.003
22. Malmberg, L. E. (2006). Goal-orientation and teacher motivation among teacher applicants and student teachers. *Teaching and Teacher Education, 22*(1), 58-76. https://doi.org/10.1016/j.tate.2005.07.005
23. Martinek, D. (2019). The consequences of job-related pressure for self-determined teaching. *Social Psychology of Education*, *22*(1), 133-148. https://doi.org/10.1007/s11218-018-9446-x
24. Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*(2), 133-144. https://doi.org/10.1177/1477878509104318
25. Özder, H., & Motorcan, A. (2013). An analysis of teacher candidates' academic motivation levels with respect to several variables. *British Journal of Arts and Social Sciences, 15*(1), 42-53.
26. Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology, 94*(1), 186. https://psycnet.apa.org/doi/10.1037/0022-0663.94.1.186
27. Perlman, D. J. (2013). Effective teaching and motivation: Application of self-determination theory. *Journal of Research, Policy & Practice of Teachers & Teacher Education, (3)*2, 31-37.
28. Power, K., & Goodnough, K. (2019). Fostering teachers' autonomous motivation during professional learning: a self-determination theory perspective. *Teaching Education, 30*(3), 278-298. https://doi.org/10.1080/10476210.2018.1465035
29. Reeve, J. (2002). Self-determination Theory Applied to Educational Settings. E. L. Deci & R. M. Ryan (Eds.), In *Handbook of Self-determination Research* (pp. 183-204). University of Rochester Press.
30. Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal*, *106*(3), 225-236.
31. Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology, 98*(1), 209. https://psycnet.apa.org/doi/10.1037/0022-0663.98.1.209
32. Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and emotion*, *28*, 147-169.
33. Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology, 99*(4), 761.
34. Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future of self-determination theory. *Advances in Motivation Science*, *6*, 111-156. https://doi.org/10.1016/bs.adms.2019.01.001
35. Schellenbach-Zell, J., & Gräsel, C. (2010). Teacher motivation for participating in school innovations-supporting factors. *Journal for Educational Research Online, 2*(2), 34-54. https://doi.org/10.25656/01:4574

36. Spittle, M., Jackson, K., & Casey, M. (2009). Applying self-determination theory to understand the motivation for becoming a physical education teacher. *Teaching and Teacher Education, 25*(1), 190-197. https://doi.org/10.1016/j.tate.2008.07.005
37. Spittle, S., & Spittle, M. (2014). The reasons and motivation for pre-service teachers choosing to specialize in primary physical education teacher education. *Australian Journal of Teacher Education, 39*(5), 1-25. http://dx.doi.org/10.14221/ajte.2014v39n5.5
38. Taşkesen, S. (2019). Investigating the academic motivations and academic achievements of pre-service visual arts teachers. *European Journal of Educational Research, 8*(3), 857-866. https://doi.org/10.12973/eu-jer.8.3.857
39. Taylor, I. M., Ntoumanis, N., & Standage, M. (2008). A self-determination theory approach to understanding the antecedents of teachers' motivational strategies in physical education. *Journal of Sport and Exercise Psychology, 30*(1), 75-94. https://doi.org/10.1123/jsep.30.1.75
40. Tekin, A. K. (2016). Autonomous motivation of Omani early childhood pre-service teachers for teaching. *Early Child Development and Care, 186*(7), 1096-1109. https://doi.org/10.1080/03004430.2015.1076401
41. Topoğlu, E. (2022). Academic motivations of preservice music teachers. *International Online Journal of Education and Teaching (IOJET), 9*(2). 903-918.
42. Uysal, D. (2022). The relationship between academic motivation types and learning styles of pre-service EFL teachers. *Sakarya University Journal of Education, 12*(3), 591-611. . https://doi.org/10.19126/suje.1108158
43. Wang, C. K. J., & Liu, W. C. (2008). Teachers' motivation to teach national education in Singapore: A self-determination theory approach. *Asia Pacific Journal of Education, 28*(4), 395-410. https://doi.org/10.1080/02188790802469052
44. Yıldız, V. A., & Kılıç, D. (2021a). Motivation and motivational factors of primary school teachers from the Self-Determination Theory perspective. *Turkish Journal of Education, 10*(2), 76-96. https://doi.org/10.19128/turje.832203
45. Yıldız, V. A., & Kılıç, D. (2021b). Investigation of the relationship between class teachers' motivation and job satisfaction. *International Online Journal of Education and Teaching, 8*(1), 119-131.
46. Yüce, K., Şahin, E. Y., Koçer, Ö., & Kana, F. (2013). Motivations for choosing teaching as a career: A perspective of pre-service teachers from a Turkish context. *Asia Pacific Education Review, 14*(3), 295-306.
47. Yüner, B. (2020). Investigation of the relationship between academic self-efficacy, academic motivation and success: The case of prospective teachers. *Çukurova University Faculty of Education Journal, 49*(2), 706-733. https://doi.org/10.14812/cuefd.698312
48. Zembat, R., Akşin Yavuz, E., Tunçeli, H. İ., & Yılmaz, H. (2018). Okul öncesi öğretmen adaylarinin öğretmenlik mesleğine yönelik tutumları ile akademik motivasyonları ve akademik başarıları arasindaki ilişkinin incelenmesi. *Journal of Theoretical Educational Science, 11*(4), 789-808. https://doi.org/10.30831/akukeg.351404