

# Integration of corpus literacy consultation into language teacher education: Course design, implementation, and evaluation

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Received: 3 February 2022 Accepted: 28 December 2022

DOI: <https://doi.org/10.30827/portalin.vi39.23885>

ISSN paper edition: 1697-7467, ISSN digital edition: 2695-8244

**ABSTRACT:** This qualitative study presents a corpus literacy course designed and implemented at an undergraduate language teacher education program in Turkey, and its evaluation by pre-service ELT teachers. The course introduces the main concepts of corpus linguistics, raises future teachers' linguistic and pedagogical awareness through corpus applications, and introduces them to corpus-informed practices to improve their pedagogical skills. In the first phase of the study, students' corpus literacy levels were determined through a pre-course survey revealing that most of the participants did not know about corpora and their uses. The second and third phases were devoted to evaluating the course. Initially, student teachers were asked to write minute papers and reflection papers during the semester to evaluate the process. In the final phase, semi-structured interviews and focus group discussions were conducted after the course to explore their overall evaluations. Findings implied that corpus literacy integration into teacher education programs clearly yields positive outcomes, yet only one course is not enough to popularize it among EFL teachers. Hence, extensive exposure to corpus literacy and curriculum-wide integration in the TEFL programs could contribute to its popularization among future practitioners.

**Key words:** corpus literacy, corpus linguistics, language teacher education, evaluation, pre-service teachers.

**Integración de la consulta de alfabetización de corpus en la formación de profesores de idiomas: Diseño, implementación y evaluación del curso**

**RESUMEN:** Este estudio presenta un curso de alfabetización de corpus diseñado e implementado en un programa de formación de profesores de idiomas de pregrado y su evaluación por profesores de inglés en formación. En la primera fase del estudio, los niveles de alfabetización del corpus de los estudiantes se determinaron a través de una encuesta previa al curso que reveló que la mayoría de los participantes no sabían sobre los corpus y sus usos. La segunda y tercera fase se dedicaron a la evaluación del curso. Inicialmente, se pidió a los estudiantes de magisterio que escribieran actas y un documento de reflexión durante el

semestre para evaluar el proceso. En la fase final, se realizaron entrevistas semiestructuradas y grupos focales después del curso para explorar sus evaluaciones generales. Los hallazgos implicaron que la integración de la alfabetización del corpus en los programas de formación docente claramente produce resultados positivos, pero solo un curso no es suficiente para popularizarlo entre los docentes de inglés como lengua extranjera. Por lo tanto, una amplia exposición a la alfabetización del corpus y la integración amplia del plan de estudios en los programas TEFL podría contribuir a su popularización entre los futuros profesionales.

**Palabras clave:** alfabetización de corpus, lingüística de corpus, formación de profesores de idiomas, evaluación, futuros profesores.

## 1. INTRODUCTION AND BACKGROUND

Direct and indirect use of the corpus in language education is one of the profound effects of the digital revolution. For decades, corpora have been used indirectly for reference publishing, syllabus design, material development, language testing and teacher education (McEnery and Xiao, 2011) and directly in the classroom to teach about corpora, teaching to exploit, and exploiting to teach (Fligelstone, 1993). With the emergence of free corpora, user-friendly concordance interfaces and widely available corpus informed materials, the corpus has developed into a specific replacement to take over the previous vague language experience. Therefore, integrating corpora into language teacher education has recently become more important than ever. This integration has prompted EFL teacher education programs to offer courses on corpus literacy, namely, “the ability to use the technology of corpus linguistics (CL) to investigate language and enhance the language development of students” (Heather and Helt, 2012, p. 417). Eventually, corpus literacy has essentially become an important part of initial teacher education (Chambers, 2019) as the most immediate teaching career phase to learn about corpora (Farr, 2008).

Recognition of the acknowledged pedagogical and linguistic value of integrating corpus literacy into teacher education programs has led TEFL programs to conform with advances in the field (Callies, 2019; Frankenberg-Garcia, 2012; Heather and Helt, 2012; Leńko-Szymańska, 2014; Mukherjee, 2004; O’Keeffe and Farr, 2003). The newly designed courses and related training programs have introduced the concept to language teachers, aimed at raising their language and pedagogical awareness, and has equipped them with pertinent skills.

Revealing the emerging need for corpus literacy trainings, the findings of research in different contexts revealed that the corpus literacy levels of the participants were considerably low (Abdel Latif, 2020; Callies, 2019; Heather and Helt, 2012; Leńko-Szymańska, 2014). Heather and Helt (2012) developed a 15-week English grammar course for TESOL students at the undergraduate and graduate level for pre-service language teachers and introduced corpus applications during this one-semester course in the USA. Their findings showed that only one of the 52 participants could define the term “corpus”, and only 4 of them had previous experience with corpora before the implemented course. Similarly, Callies (2019) investigated the level of corpus literacy and corpus use in teaching with 26 EFL teachers in Germany, revealing that the majority (73.1%) had not heard of corpora before.

Breyer (2009) and Zareva (2017) conducted studies targeting pre-service teachers. Breyer (2009) introduced a one-semester course to 18 student teachers in Germany. Her findings

clearly displayed the students' enthusiasm about this language exploration with heightened levels of linguistic awareness and a willingness to use corpus in their own teaching practices. Similarly, Zareva (2017) integrated a corpus literacy part into the grammar course on a TESOL teacher training program in the USA. In line with Breyer (2009), Zareva's (2017) findings revealed that corpus experience increased the participants' awareness of how to teach grammar using authentic language.

While many studies have proven the positive effect of corpus literacy integration into TEFL programs, the challenges have also been mentioned in praxes. For example, Leńko-Szymańska (2014) reported students' difficulties with the operation of corpus tools involving guided practice with the software. She also highlighted her participants' suggestion to embed such a course into the other undergraduate courses for multidimensional uses. In line with Leńko-Szymańska (2014), Zareva (2017) stated her participants' challenges while navigating the tools for analysing the data. Abdel Latif (2020) investigated Arab EFL pupil teachers' immediate beliefs and long-term practices of corpus applications. In this study, although the student teachers found corpora useful in TEFL, the number of participants using corpora directly or indirectly in their classes after the corpus literacy instruction was highly limited because of reasons such as limited practice time during 3-week-long corpus instruction, complicated software interfaces, and an incompatibility of the language level in corpora for the learner level. Similarly, Leńko-Szymańska (2017) pointed out that a one-semester course was not enough to develop the corpus skills to the desired level. Her findings implied that the students could only grasp basic technical and corpus literacy skills. Parallely, Ebrahimi and Faghih (2017), who integrated an online corpus literacy course into a teacher education program in Iran, recommended a full curriculum-wide integration of corpus literacy skills.

While integrating corpus literacy into initial teacher education is still not at the desired level (Chambers, 2019), this issue requires more attention in Turkey. Although there is a considerable increase in the number of studies in the field (Aşık, 2017; Çalıřkan and Kuru Gönen, 2018; Girgin, 2019; Özbay, 2017), no corpus literacy course specifically has been designed and offered for pre-service English teachers in TEFL programs. Özbay (2017) offered a corpus literacy course into the curriculum focusing more on linguistic research than on language teaching at an English Language and Literature Department in Turkey.

Although the use of corpora in foreign language teaching yields many advantages, there are no corpus literacy courses specifically designed for pre-service English teachers in Turkey. For that reason, the present study aims to first explore ELT pre-service teachers' existing corpus literacy levels and to then gather their overall evaluations of the corpus literacy course that was newly integrated into their language teacher education program. This study addresses the following research questions:

- a) To what extent are pre-service Turkish EFL teachers familiar with corpus linguistics? Are the findings in this regard similar to the previous studies conducted in the Turkish context?
- b) What is their overall evaluation of the corpus literacy course in their language teacher education program? More specifically:
  - b.1. What are the effectual aspects of the course for the pre-service EFL teachers?
  - b.2. What are the challenges the pre-service EFL teachers faced during the course?
  - b.3. What are the suggested improvements made by the pre-service EFL teachers to increase the effectiveness of the course?

## 2. METHOD

### 2.1. Participants

In the present study, the participants were pre-service teachers attending a four-year undergraduate TEFL program at a state university in Turkey. Prior to this corpus literacy course offered in the 6th semester of the 8 semester-long program, the participants took several compulsory courses, such as teaching methodology, teaching English language skills, teaching English to young learners, and educational research methods. Parallel to the corpus literacy course, the participants were attending an “Instructional Technology and Material Development” course in the 6th semester. After completing the 6th semester, pre-service students are required to complete their compulsory two-semester-long practicum in the 7th and 8th semesters in Turkey. It was planned that the participants could put what they had learned in the corpus literacy course into practice in real-life classroom settings in their practicum.

The course was offered in the spring semester of the 2017-2018 academic year to a class with 20 students: 13 females and seven males. All of them were junior students aged between 20-38, and the average age was 23,4. They were all informed about the study and were asked to fill in the informed consent forms.

### 2.2. The setting and ‘Corpus Literacy in Foreign Language Teaching’ course

The course “Corpus Literacy in Foreign Language Teaching” lasted for 16 academic weeks. It was held for 2 hours per week, totalling 32 hours, and covered various topics, starting from introducing what a corpus is to how corpus-informed materials could be prepared. This course was conducted in a regular classroom with a projector at the ELT Department. However, the classroom was not equipped with computers. As some students did not have personal computers, the students were asked to form groups of 2-4 people (8 groups in total). Each group was instructed to bring a computer for hands-on practice sessions.

A learner-centred approach was employed during the semester with a focus on practice. Each class session consisted of two parts: a brief introduction by the researcher/teacher, including an explanatory demonstration of the practice section, and then hands-on practice by the student teachers. The researcher/teacher always assisted them and facilitated their learning. Each week, the participants were assigned to complete a task as a group outside the classroom and read a chapter from books or research papers from journals.

The course also had an online component on Moodle. As technology integration into education is becoming increasingly important, the researchers aimed to familiarize students with these online learning/teaching platforms. All the course content was uploaded to Moodle weekly so that students could follow along easily with no time restrictions. They could also submit their assignments through Moodle and receive feedback. Therefore, the course was environmentally friendly, as any printouts were unnecessary.

Assessment of the student productions included classroom performance, weekly assignments, and their final project. The course syllabus is presented in Table 1:

**Table 1.** *The syllabus of the “Corpus Literacy in Foreign Language Teaching” course*

WEEK	TOPIC
Week 1	Introducing course content Corpus linguistics, corpora, use of corpora in language education, and corpora types
Week 2	Student presentations Introducing more corpora
Week 3	Corpus analysis tools Concordancers and concordancer types
Week 4	Use of corpora in language teaching, its advantages Concordancer practice
Week 5	Student presentations with concordancer practice
Week 6	Corpora and register differences Register variation practice
Week 7	Reflection paper
Week 8	Computer-aided error analysis vs traditional error analysis Examples from Cambridge Learner Corpus
Week 9	Error tagging practice Computer-aided error analysis practice
Week 10	Corpus-informed material evaluation, adaptation, and development Material evaluation and adaptation practice (Comparing examples from Touchstone Series (McCarthy, McCarten, and Sandiford, 2005) vs books used at the state schools)
Week 11	Material evaluation and adaptation practice
Week 12	Corpus-informed material development Introducing Touchstone Series as corpus-informed materials Comparing Touchstone Series and books used at the state schools Introducing an example corpus-informed material
Week 13	Take-home assignment
Week 14	Student presentations on language teaching materials they prepared by using corpora data
Week 15 -16	Final exam weeks

The course consisted of hands-on sessions which allowed the participants to do activities in the classroom learning by doing. For each hands-on activity session, they were required to submit an assignment report, explaining the gains and challenges. For example:

In the second session, after they learned about corpora and their types, each group explored a particular corpus, learnt how to navigate through its interface and presented its features to their peers. These corpora included BNC, COCA, ICLE, TCSE-TED Corpus Search Engine, MICASE, CHILDES, CALLFRIEND, SACODELY, and ENPC.

In the third session, they learned about concordancers and the instructor conducted activities using AntConc and COCA. In the fourth session, they were required to analyse short texts uploaded onto the online platform of the course to extract and examine word lists to reveal the most common content and function words, and collocations using AntConc.

The fifth week involved group presentations on a concordancer they choose explaining its features and use in corpus search. The concordancers chosen included Just the Word, MonoConc, AWL Highlighter, Skell, TextSTAT, WordSmith, MICASE, and WebCorp.

In the sixth week, the participants analysed COCA comparing lexical choice across different registers to understand various register-specific characteristics. This activity was carried out under the guidance of the instructor who initially presented a demo search following COCA's guideline to make them familiar with the interface. Following this activity, each group answered four task-related sub-questions focusing on both linguistic inferences and pedagogical implications of their findings.

In the eighth and ninth week, the participants were instructed on computer-aided error analysis with related practice. Each student drafted an argumentative essay on one of the ICLE recommended topics. The essays written were error-tagged by the peers outside their group using the error tag set prepared by Bennet (2010, p. 79). These essays were, then, compiled to build a small corpus. As the third step of this activity, the students conducted an error analysis using their homebred corpus on AntConc to reveal the frequencies of error typologies. In their activity report sheet, they wrote about their findings and commented on how they could use this kind of analysis in their EFL classes reflecting on the benefits and challenges as in the previous activities.

In the last four weeks of the course, they learnt about corpus-informed materials and how to develop them. First, they compared textbooks published in Turkey and corpus-informed textbooks. In their reports, they highlighted the similarities and differences in terms of the content, authentic use of language, and activities. They also prepared language teaching materials using corpora and presented them to their peers and received feedback.

### **2.3. Data collection tools**

The data collection procedure took place in three phases (i.e., pre-course, during the course, and post-course) and data were collected through pre-course surveys, minute papers, reflection papers, semi-structured interviews, and focus group discussions. The aim of using various tools to collect data in different phases of the course was to strengthen the reliability of the results through triangulation and conduct an in-depth analysis of the process. In the pre-course phase, a pre-course survey designed by Leńko-Szymańska (2014), was used to gather information about the student teachers' corpus linguistics knowledge prior to the corpus literacy course. This tool answered the first research question. For the second question and its sub-questions, a set of other tools was employed to evaluate the process. Initially, minute papers were distributed to the participants at the end of each class so that they could evaluate the session when the effect of the experience was still fresh. Second, after completing the first half of the course, the student teachers were required to write

reflection papers evaluating the course. A few guiding questions were provided that asked them to write what they enjoyed, what was problematic for them, and what changes they would like to see. Thanks to these minute papers and reflection papers, the participants could evaluate the course during the semester. Finally, after the course was completed, semi-structured interviews and focus group discussions were carried out. At this stage, the participants were asked to evaluate the complete course duration. The same set of questions were used as prompts in semi-structured interviews and focus group discussions to see if new ideas would arise when they were in a group discussion listening to the other participants' views.

#### **2.4. Data collection and analysis**

As the first step of the study, the students were required to complete a pre-course survey with 4 open-ended questions before the lecture in the first week of the semester. After starting the semester, at the end of each class, students evaluated the class by writing their comments on minute papers. They were collected for 10 weeks, depending on the convenience of the week's content and course construct. Each minute paper consisted of three questions. The students were asked to write efficacious points, ineffective problematic points, and suggestions for any inefficient parts.

In the 7th week of the semester, all the participants were instructed to write a reflection paper on the corpus literacy course to collect the first set of data after the first half of the semester. They wrote not only about the effective and ineffective aspects of the course but also about what they learned during the course and how they could apply what they learned in their teaching career in the future.

To serve the purpose of this qualitative research, each participant was interviewed individually to elicit student teachers' perspectives on the course, and an average interview lasted approximately 25-30 minutes. The interviews were conducted in Turkish, as they stated they would feel more comfortable in their mother tongue. These semi-structured interview sessions were audio-recorded and transcribed. During the sessions, a semi-structured interview form was used to allow the researcher flexibility in adding supplementary questions when needed, or the participant could add more details or propose a different perspective.

After the interviews, the students were divided into two groups of 10. Both groups were asked the same questions that were asked during the semi-structured interviews. All the questions were directed to elicit their thoughts on the course, enabling them to reflect by evaluating the positive and challenging aspects of the course. They suggested some changes to implement in the future versions of course to contribute to its efficiency. Using an interactive discussion platform for this purpose minimized the interference of the researcher.

Content analysis was used to analyse the collected data. Krippendorff (2004, p. 18) defines content analysis as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use". In this study, the content analysis provided invaluable insights to grasp the details of conducting a corpus literacy course and investigating its effects and making inferences by examining, verifying, and summarizing the data through categories and emergent themes. In this study, the researchers followed a set of steps proposed in Krippendorff (2004, p. 476-483): (1) defining the research questions to conduct content analysis, (2) defining the population, (3) defining the sample to be included, (4) defining the context of the generation of the document, (5) defining the units of analysis, (6) deciding the codes, (7) constructing the categories for

analysis, (8) coding and categorizing the data, (9) conducting the data analysis, (10) summarizing, and (11) making inferences. The systematic and strict procedure in the analysis was followed to examine and verify the content of the data to be analyzed as proposed by Cohen, Manion and Morrison (2007).

### 3. FINDINGS

#### 3.1. Existing knowledge of corpus linguistics

The data collected through the pre-course survey revealed that student teachers were mostly not familiar with the concept of corpus. The results for their familiarity with the term ‘corpus’ are presented below in Table 2:

**Table 2.** *The familiarity of students with corpus linguistics terms*

<i>Familiarity with corpus</i>	N	%
I have never heard the term corpus before.	6	33,3
I have heard the term corpus before, but I have no idea what it is.	7	38,9
I have heard the term corpus before, and I have a rough idea of what it is.	4	22,2
I am familiar with corpus linguistics, but I have never done any practical work with corpora.	0	0
I have already done some work with corpora.	1	5,6
<b>Total</b>	<b>18</b>	<b>100</b>

A total of 18 students were available in the first class of the course. Only one student out of 18 had worked with corpora before the course, while the others either did not know about what a corpus was or had just heard about the term before with a rough idea of what it meant.

The second question in the survey asked the students to write their own definition of ‘corpus’. The results showed that three students out of 18 could not write any definitions, and only one student had a relatively clear idea of the term, defining it as the following: “It is a collection of written or spoken texts in a language.” Apart from these, the most frequent answer (N=5, 33,3%) was “It is a part of the brain.” After the class, students were asked to clarify their answer, and they stated they confused it with ‘corpus callosum.’

The third question in the survey asked the participants to describe ‘concordance’ and only seven students (39%) were able to express it. However, none of these answers were correct. Their answer varied from “an airline company” to “collecting something.” The fourth question was related to the third question, and it requested the participants to write a definition of ‘concordancer’. The number of students who answered the question decreased to four (22,2%). However, none of the answers defined the term correctly, and the answers varied from “a plane name” to “somebody who collects something.” The results revealed that most of the participants did not know about corpora or basic corpus linguistic terms at the onset of the corpus literacy course.



### 3.2. Efficacious aspects of the corpus literacy course

The analysis of the data collected at different phases of the course provided the researchers with revealing findings pertaining to the effective aspects of the corpus literacy course. Five main categories emerged in the analysis, and each main category comprises several subcategories. These are presented in Figure 1.

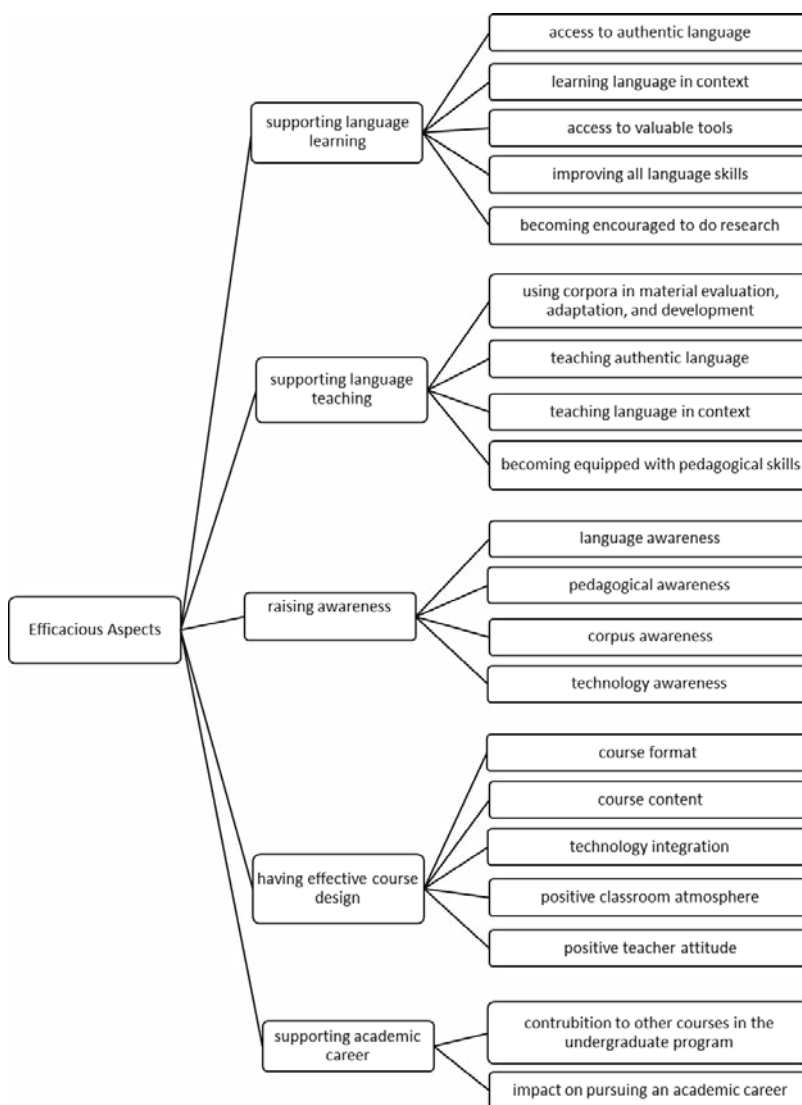


Figure 1. Efficacious aspects of corpus literacy from the student teachers' view

According to these findings, they found the course efficacious for various reasons, as detailed below.

### *3.2.1. Supporting language learning*

The data collected during and at the end of the semester indicated that the participants found the corpus literacy course effective, as it supported them in learning EFL by providing them with authentic language in context:

While speaking or writing we have great difficulties. For example, we write the word 'pencil' in the dictionary. We get 10 different results. When we look for a verb, we get several phrasal verbs. We examine the example sentence, but there is only one example sentence. For instance, in COCA we could check the uses in different contexts such as academic language or magazines. I like it a lot. I liked that we could choose specific words to write an academic piece or less formal writing. (Participant 19)

The participants contented with learning how to access corpora and concordancer tools. While they stated they could improve all language skills through corpora, the most frequently emphasized one was writing, as seen in Participant 8's (P8) statement from reflection papers:

Let's say I am writing a mid-term paper or an essay, and I have trouble in choosing what word to use to give that specific meaning in my mind or in what way I can use the word to serve my point, this is probably when I will take a look at a concordancer.

In addition to these points, finally, the student teachers stated they were becoming encouraged to do research in this course, which also helped them become autonomous learners and led them to think critically. Learning to explore texts through concordancers and examine specific language uses was particularly found to be convenient and inspiring. Here is a statement of Participant 7:

This course is triggering to do research. We have to make searches on concordancers and come up with results. In that respect, it can also improve critical thinking. We have to make choices among the results from our searches. It improves our knowledge as well.

### *3.2.2. Supporting language teaching*

As deduced from the answers, the course was found to be supportive not only of EFL learning but also of TEFL. The analysis of the data revealed that the course promoted language teaching. First, they stated that they could benefit from corpora in the process of material evaluation, adaptation, and development.

We have recognized the deficiencies of the traditional textbooks used in the schools. We have seen that the content was not authentic enough. (P13)

As understood from the statement, the participants could compare traditional books to corpus-informed books to realize their authentic use in TEFL. They explicitly highlighted that, thanks to corpus data and corpus-informed materials, they could teach living language in context:

My students can learn new vocabulary in context, and they can easily select appropriate words in a given context. By doing so, they learn a language in context, not in isolation. This will help their grammatical and lexical competence increase. (P15)

The participants were also delighted with the course as they gradually felt innovative, autonomous, and explorative. They stated they could develop into not only consumers, but also material producers by using corpus. Exploring the use of language in real life helped them to notice the importance of technology integration into TEFL.

These results suggest that teaching about corpora and their uses in TEFL could promote the language teaching skills of prospective language teachers, enabling them to practice them during their undergraduate studies and practicum.

### 3.2.3. *Raising awareness*

The findings also showed that a corpus literacy course could raise TEFL teacher candidates' awareness on many levels in terms of language, pedagogy, corpus, and technology use. They also noticed the register differences and how word choices differ in different registers, how much interlanguage errors could reveal for learning EFL, and how TEFL could be improved by using authentic language and involving corpora in the material development process.

We could research the words in written language. I can make use of this while writing essays. That provided us with this awareness of language use. We do not know some words which are suitable for a specific register. It might be okay in spoken language but not in academic language. It does not sound academic but using corpora we can choose different registers such as academic or spoken and choose the words. (P18)

When we started this course, I did not have any idea about its name. In time, firstly, I have learned the meaning of 'corpus' and what its purpose is. (P12)

I think this course was a course where we could genuinely learn how to use technology in the classroom. For example, we used all those tools. In the other courses, we are always stressing the importance of technology integration into teaching. However, do we apply in those courses? No. As a result, we could see in this course that we can do it. (P13)

Finally, the course made the students aware of their own language use and of their proficiency in the target language. As an output of this specific course, they questioned their own interlanguage and reflected on it critically, which could be considered a desirable step toward improving their proficiency as prospective EFL teachers.

I realized as a future language teacher that firstly we should be proficient enough in the target language. It is a cycle at the end, everyone teaches what they know. Firstly, we should learn the correct language use through corpora or concordancers, and then we should teach. (P19)

These might be indicators that the course had a strong effect on raising the participants' awareness in multiple ways.

#### *3.2.4. Having an effective course design*

In many answers, the students emphasized that the course was designed effectively considering its format, content, technology integration, inspiring learning tools, and supportive teacher role. In particular, short topic introductions, warm-up demonstrations by the instructor, hands-on group practices, and supplementary assignments were reported as effective. In addition, course content was also seen as triggering curiosity. One participant emphasized the need for learning how to use technology in the classroom for 21st century students and its significant contribution to professional development:

Our students have been using tablets since they were 4-5, and we cannot teach them English through the coursebooks of the 20<sup>th</sup> century. We, teachers, need to learn how to integrate technology into the teaching process. Therefore, this course is quite interesting and necessary for my professional development. (P15)

A positive and supportive teacher attitude was also stated to be very important for learners' motivation to overcome the initial hesitations of the students and to lower the affective filter.

Classroom atmosphere is good in this course. Because, as a student, we get bored when we just read the coursebook then have an exam from that book. In this course, we search for information about our topic and sometimes we conduct presentation activities. Therefore, I think it increases students' motivation. (P13)

Another feature of the course that the participants put forward was its environmentally friendly nature. They were pleased to learn that all the materials and assignments were online, which also helped them to be more autonomous.

It was nice in this class that we did not waste any paper. This is both environmentally better and also more practical. Thanks to the platform we use and using e-mails, we can reach each other at any time. (P18)

Therefore, its design and the method of delivery were the positive aspects of the corpus literacy course and its instruction.

### 3.2.5. Supporting academic careers

In the student teachers' opinion, one of the other positive aspects of the corpus literacy course was that it supported their academic career in two ways. First, the participants shared that they found the course effective since it also contributed to other courses in their undergraduate program from several angles, as stated by P17 in their reflection paper:

I can apply what I have learned in this course to other courses in my program. For example:

- In the literature course, I can use the corpus in order to see the frequency of usage of old words and new words such as in Shakespeare's poem vs others.
- In the translation course, I can use the corpus to find the most appropriate word for the sentence.
- In the material design course, I can use the corpus to present as a material in my teaching.

According to this, participants believed they could transfer corpus use to various academic fields as a learning and teaching tool. Some students even considered studying corpora in EFL for their graduate studies.

If I were pursuing a master's degree after my bachelor's, this would definitely be my research topic. (P14)

A positive perception of the corpus literacy course of the students was clearly observable, as they believed that they benefitted from it in various course contexts during their undergraduate studies and in graduate studies.

### 3.3. The challenges faced during the corpus literacy course and suggestions for improvements

The student teachers were also asked to specify the challenges they faced during the corpus literacy course and their suggestions to assist the researchers in further updates and revisions to be introduced. The categories and subcategories that emerged from the data analysis are presented in Figure 2.

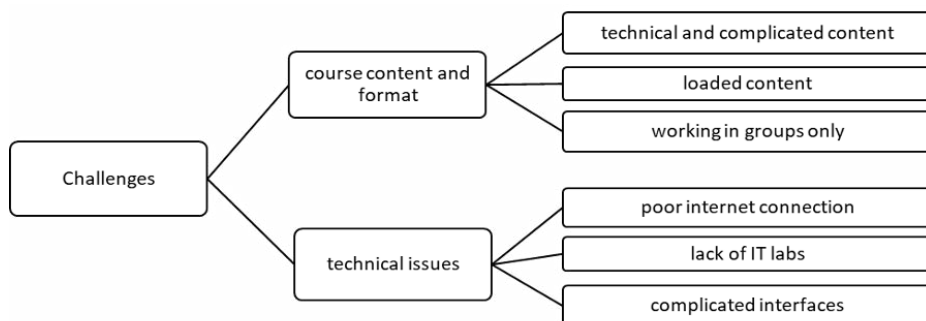


Figure 2. The challenges faced by the student teachers during the corpus literacy course

As inferred, the challenges were mainly about the course content, format and technical challenges they experienced. As most of them had no experience with corpora, they found the content too technical, complicated, and loaded at first.

In the first class, we did not know anything. As a result, it looked too complicated for us. For three weeks, we could not understand clearly what we were doing. (P19)

Other difficulties they faced were related to technical issues. As the internet connection was not stable in the first weeks, students had to use their mobile data or suffered from poor connection. They also stated that it was difficult to work with computers in a regular classroom. They would prefer working in an IT lab with a good internet connection. Another technical issue for the student teachers was the complicated interfaces, as they had little previous experience with corpora and concordancers. Their suggestions for these challenges are presented in Figure 3.

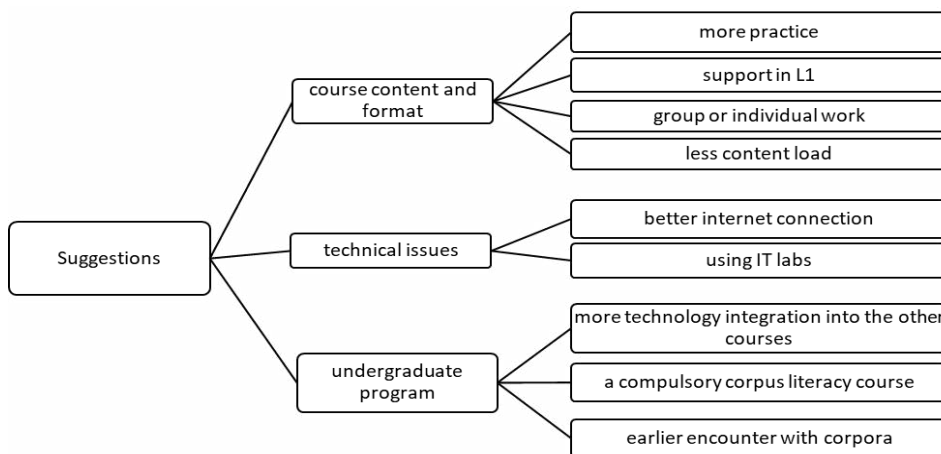


Figure 3. Student teachers' suggestions to improve the effectiveness of the course

Regarding the course content, students asked for a less loaded course, especially if it was the first time they learned about corpora.

The course content could be less loaded and more entertaining. (P9)

As the student teachers found the content too technical and complicated, especially in the first weeks, they requested further explanations in their L1 (Turkish) to better understand the content. To internalize what they learned, they suggested including more practice as well. Parallel to the challenges, the participants suggested that this course should take place in an IT lab with good internet connection so that the technical issues could be minimized:

This course is mainly carried out through technological and online tools and also the internet. That's why while studying on this course, all of the equipment should be easy to reach. (P3)

The last set of suggestions made by the participants was for the undergraduate program they were studying at while taking the corpus literacy course. As mentioned above, student teachers found the course beneficial, as it increased their technology awareness, and the teacher of the course as a model demonstrated how to integrate the use of technology into teaching. Hence, the participants suggested that the other courses at the undergraduate program should integrate technology in classrooms; thus, they could learn from their teachers directly instead of just being instructed on the use of technology theoretically while not being able to practice it:

Using the concordancers, for example, COCA, seemed difficult at first. I think the reason might be that the other courses do not have much technology integration. I think there is an effect of this. (P4)

They also added that the corpus literacy course should be a compulsory course for freshman students so that they could benefit from it throughout their studies as future teachers and language learners:

We said previously that this course has two dimensions: first, it is useful for us as future English language teachers, second, it is also helpful to improve our English proficiency. As a result, I believe that this course should be taught in the first year of the study so that it can be more beneficial in terms of improving our English. (P13)

During the course, in that 2-hour-time, the information I got, the things we did were satisfactory. I believed that they would be useful for me and this course should go on. It should even be a compulsory course. (P17)

From the stated challenges and suggestions, it can be inferred that to maximize the benefits of a corpus literacy course, there is room for improvement, and these needs should be met for more efficacious practices in the future.

#### **4. DISCUSSION**

The analysis of the collected data revealed answers to the research questions addressed in this study. First, most of the student teachers were unfamiliar with corpora and their use in language teaching/learning. This result is in line with previous studies conducted by Abdel Latif (2020), Heather and Helt (2012), Leńko-Szymańska (2014), and Zareva (2017), who also found that student teachers did not have considerable corpus familiarity before the corpus literacy instruction they received. Similarly, previous research (Aşık, 2017; Callies,

2019; Mukherjee, 2004, Özbay and Kayaoğlu, 2015) revealed that in-service EFL teachers had little corpus literacy, too. As highlighted by Chambers (2019), despite the increasing number of studies integrating corpora into language teaching and learning contexts, the impact of this integration is not at the desired level yet. It should be noted that for the acquisition of these kinds of complex skills, special training is necessary (Römer, 2010), and as suggested by other researchers (Boulton, 2010; Breyer, 2009; Farr, 2010), initial teacher education is the most suitable phase for corpus literacy instruction, as they can have specific courses for corpus literacy and corpus applications in various courses so that they learn by practicing.

The second research question focused on the student teachers' evaluations of the corpus literacy course. Parallel to previous research (Abdel Latif, 2020; Aşık, 2017; Breyer, 2009; Farr, 2008; Leńko-Szymańska, 2017; Zareva; 2017), it was discovered that the course had several advantages for the participants as language teachers and learners. The participants were highly satisfied with the course content and structure. Furthermore, students shared similar views on having opportunity to explore the authentic use of language in context, being more autonomous, and motivated to do research. Instead of relying on their intuition, they had a reliable source to check the real-life use of a word or a phrase in context. This helped them gain confidence in their writing skills. Supporting Poole's (2020) claim, even if language teachers are provided with ready-made corpus materials, they need to gain corpus literacy skills to tailor their context-specific materials to meet their immediate needs efficiently. Integrating a corpus literacy course into TEFL programs is one of the most effective ways of achieving this.

Student teachers' awareness was raised at multiple levels: language, pedagogy, corpus, and technology. They could analyze the target language in depth as future teachers, leading them to be informed teachers equipped with new skills. They found that corpus literacy courses contribute to their other undergraduate courses, such as translation, writing, and teaching language skills and to their graduate studies. This supports Farr (2008) who stated that most graduate students were also attracted to corpus-related topics for their theses and dissertations because of the course they took in their undergraduate program, implying that a corpus literacy course for prospective English teachers is definitely useful for many reasons and its integration should be strongly encouraged.

As suggested by Callies (2016), the use of corpora in teaching requires three different skills: technological skills, corpus literacy skills, and pedagogical skills. The participants in the present study lacked technical skills. Similar to the results reached by Farr (2008) and Zareva (2017), our participants found corpus and concordancer interfaces difficult to manage. For that reason, the necessity for more practice was a suggestion that was made in some other studies, such as Leńko-Szymańska (2017) and Zareva (2017). In the study of Leńko-Szymańska (2017), the participants also highlighted that instead of having a one-semester course, it would be better to learn it in two semesters and not in their graduate study but in their undergraduate study. However, it should be noted that, as Boulton (2009) also suggests, technical infrastructure should be complete to fully benefit from a corpus literacy course.



## 5. CONCLUSION

This study investigated the student teachers' level of corpus literacy prior to a corpus literacy course and then explored their evaluations of this new component that was added to their curriculum during and after a one-semester instruction period. The results clearly imply that most of the future teachers did not know or hear about corpora before the course. For this reason, as stated also by P19, the students had difficulty understanding the technical details and the content of the course. This is an indicator that they did not have any teachers using corpora in the classroom directly, either at high school or during university. An in-service teacher training program to introduce corpora and their use in teaching languages could raise awareness in this regard. Similar trainings should also be organized for university lecturers who are not familiar with the field at TEFL programs so that they can integrate corpus use into their classes. Having a corpus literacy course in the first year of TEFL programs would be favorable, so EFL teacher candidates could benefit from corpora during their four-year study.

Regarding the evaluations of the course, in line with previous research, student teachers uniformly find a corpus literacy course both beneficial and necessary at a Department of English Language Teaching for many reasons, as we infer from answers such as “this course should be compulsory”. Therefore, taking the challenges into consideration, such as less technical content and better technical infrastructure, corpus literacy courses should be an integral part of ELT departments. Further studies might be designed to handle these challenges. To support the improvement of corpus literacy levels of the students, department members should also collaborate on how to integrate corpora into their various classes. To explore and understand the long-term effects of such instruction, follow-up studies are strongly recommended. Through such studies, we can determine the long-term effects of corpus literacy instruction and the needs of teachers in that process. This kind of exploration could lead to successful interventions and finding remedies for language teachers' difficulties in using corpora for their teaching practices.

## ACKNOWLEDGEMENTS

This study was supported by the Scientific and Technological Research Council of Turkey.

## 6. REFERENCES

- Abdel Latif, M. (2021). 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>
- Aşık, A. (2017). A sample implementation of corpus integration through coursebook evaluation: Implications for language teacher education. *Journal of Language and Linguistic Studies*, 13(2), 728-740. <https://www.jlls.org/index.php/jlls/article/view/781/340>
- Bennett, G. R. (2010). *Using corpora in the language learning classroom: Corpus linguistics for teachers*. University of Michigan Press.

- Boulton, A. (2010). Learning outcomes from corpus consultation. In M. Moreno Jaén, F. Serrano Valverde, & M. Calzada Pérez (Eds.), *Exploring new paths in language pedagogy: Lexis and corpus-Based language teaching* (pp. 129-144). Equinox. <https://hal.archives-ouvertes.fr/hal-00502629v2>
- Breyer, Y. (2009). Learning and teaching with corpora: Reflections by student teachers. *Computer Assisted Language Learning*, 22(2), 153–172. <https://doi.org/10.1080/09588220902778328>
- Fligelstone, S. (1993). Some reflections on the question of teaching, from a corpus linguistics perspective. *ICAME Journal*, 17, 97-109.
- Callies, M. (2019). Integrating corpus literacy into language teacher education. In S. Götz, & J. Mukherjee (Eds.), *Learner corpora and language teaching* (pp. 245-263). John Benjamins Publishing Company. <https://doi.org/10.1075/slcs.201.12cal>
- Callies, M. (2016). Towards corpus literacy in foreign language teacher education: Using corpora to examine the variability of reporting verbs in English. In R. Kreyer, S. Schaub & A. Gulderning (Eds.), *Angewandte linguistik in schule und hochschule* (pp. 391–415). Peter Lang.
- Chambers, A. (2019). Towards the corpus revolution? Bridging the research-practice gap. *Language Teaching*, 52(4), 1-16. <https://doi.org/10.1017/S0261444819000089>
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. Routledge.
- 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. <http://www.jlls.org/index.php/jlls/article/view/1020/430>
- Ebrahimi, A., & Faghih, E. (2017). Integrating corpus linguistics into online language teacher education programs. *ReCALL*, 29(1), 120-135. <https://doi.org/10.1017/S0958344016000070>
- Farr, F. (2010). How can corpora be used in teacher education? In A. O’Keeffe & M. McCarthy (Eds.), *Routledge handbook of corpus linguistics* (pp. 620-632). Routledge.
- Farr, F. (2008). Evaluating the use of corpus-based instruction in a language teacher education context: Perspectives from the users. *Language Awareness*, 17(1), 25–43. <https://doi.org/10.2167/la414.0>
- Frankenberg-Garcia, A. (2012). Raising teachers’ awareness of corpora. *Language Teaching*, 45(4), 475–489. <https://doi.org/10.1017/S0261444810000480>
- Girgin, U. (2019). Perceptions of Turkish EFL student teachers towards learning phrasal- prepositional verbs through corpus-based materials. *Language Teaching and Educational Research (LATER)*, 2(1), 1-19. <https://doi.org/10.35207/later.526730>
- 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. <https://www.learntechlib.org/primary/p/39324/>
- Heyvaert, L., & Laffut, A. (2008). Corpora in the teaching of English in Flemish secondary schools: current situation and future perspectives. *Proceedings of the 8th Teaching and Language Corpora Conference*, 400-409. Associação de Estudos e de Investigação Científica do ISLA Lisboa; Lisbon.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Sage Publications.
- Leńko-Szymańska, A. (2017). Training teachers in data-driven learning: Tackling the challenge. *Language Learning & Technology*, 21(3), 217-241. <https://www.lltjournal.org/item/10125-44628/>
- Leńko-Szymańska, A. (2014). Is this enough? A qualitative evaluation of the effectiveness of a teacher-training course on the use of corpora in language education. *ReCALL*, 26(2), 260–278. <https://doi.org/10.1017/S095834401400010X>
- McCarthy, M., McCarten, J., & Sandiford, H. (2005). *Touchstone series*. Cambridge University Press.

- McEney, T., & Xiao, R. (2010). What corpora can offer in language teaching and learning. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 364-380). Vol. 2. Routledge.
- Mukherjee, J. (2004). Bridging the gap between applied corpus linguistics and the reality of English language teaching in Germany. In *Applied corpus linguistics: A multidimensional perspective* (pp. 239-250). Brill.  
[https://doi.org/10.1163/9789004333772\\_014](https://doi.org/10.1163/9789004333772_014)
- O’Keefe, A., & Farr, F. (2003). Using language corpora in initial teacher education: Pedagogic issues and practical applications. *TESOL Quarterly*, 37(3), 389–418. <https://doi.org/10.2307/3588397>
- Özbay, A. Ş. (2017). Turkish EFL English majors’ perceptions towards the implementation of “Introduction to Corpus Linguistics” course in an English department in Turkey. *Turkish Studies*, 12(34), 307-322. <http://dx.doi.org/10.7827/TurkishStudies>
- Özbay, A., & Kayaoğlu, M. N. (2015). EFL teacher’s reflections towards the use of computerized corpora as a teaching tool in their classrooms. *Cukurova University Faculty of Education Journal*, 44(1), 85-104. <https://doi.org/10.14812/cuefd.54367>
- 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. (2010). Using general and specialized corpora in English language teaching: Past, present and future. In M. C. Campoy, B. Belles-Fortunato, M. L. Gea-Valor (Eds.), *Corpus-based approaches to English language teaching* (pp. 18-35). Continuum.
- Zareva, A. (2017). Incorporating corpus literacy skills into TESOL teacher training. *ELT Journal*, 71(1), 69–79. <https://doi.org/10.1093/elt/ccw045>