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"As the Twig is bent, so is the Tree Inclined": Research Engagement among Pre-service EFL Teachers

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ABSTRACT

Teacher research tends to have a low uptake among teachers, which might be due to the fact that they are not generally identified with the role of the teacher as a researcher in initial teacher education programs. Also, as there is little research on the effects of research introduction courses on pre-service teachers, this descriptive study explored pre-service English as a Foreign Language (EFL) teachers' attitudes towards research engagement and the benefits and difficulties they experienced throughout this process. To this end, pre-service EFL teachers (N= 32) from a state university in Turkey, who took a course on research engagement, participated in this study. This study adopted a mixed-methods research design: We triangulated quantitative survey data with the qualitative data elicited through an open-ended survey and semi-structured focus-group interviews. The findings described pre-service teachers' attitudes towards research from self-efficacious, behavioural, cognitive, and affective perspectives, as well as elicited the perceived benefits and challenges from participants' responses. Overall, we found that participants developed positive views towards research as part of the course and they felt more self-efficacious and overcame their research anxiety. At the same time, our study also showed that while most participants found the research methodology course important, less than one third of them planned to conduct research when they become in-service teachers. The study concludes by discussing the implications for initial teacher education programs.

Nearly any existing framework reflecting on the skills essential for success in the 21st century includes critical thinking competencies (Ananiadou & Claro, 2009). Thus, enhancing learners' critical thinking skills for their academic and future professional development has been among the primary concerns of

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educational institutions, and considerable attention in this direction has been drawn to teacher development in recent years. In order to have students who can think critically, teachers are also expected to think about and reflect upon their own teaching practices and underlying beliefs critically. Such reflective practice (Schön, 1983) is considered an important component of both initial (ITE) and in-service (INSET) teacher education programmes and can be promoted through several different professional development activities, such as teachers' research engagement (Akyel, 2015; Atay, 2008; Borg, 2010, 2015; Ulvik, 2014). While it has been also known by different terms, such as 'action research' (Lewin, 1946), 'classroom(based) research', 'educational research', or 'practitioner research', as a form of reflective practice, teacher research refers to a systematic inquiry where teachers carry out activities aimed at studying and reflecting on their own practices, teaching, and student learning (Stenhouse, 1985). Teachers' research engagement is oftentimes categorized as engagement-*with*-research, which refers to reading or using research (i.e., receptive research skills; consuming research) and engagement-*in*-research, which involves doing research (i.e., productive research skills; producing research) (Borg, 2010). Although in some contexts teaching is still "often viewed as a practice-oriented profession rather than a research-oriented one" (Brooks, 2021, p. 7), the role of the teacher as a researcher should not be underestimated because teacher research (both engagement *in* and *with* research) has proven to conduce to their professional development, enhance students' learning, and contribute to the education system in general.

Research evidence has further shown that teachers' attitudes towards their future teaching practice in general, and towards research engagement in particular, are strongly correlated with the kind of experiences they had as part of their initial teacher education programmes (e.g., Consoli & Dikilitaş, 2021; Guilbert, Lane, & Van Bergen, 2016; Rets, Rienties, & Lewis, 2020a). As Brooks (2021) highlighted, "teachers should be research informed, and this should start with their initial induction to the profession." (p. 7). It has been also indicated that research engagement provides pre-service teachers with "making sense of teaching and learning" (Pendry & Husbands, 2000, p. 332), thereby helping them develop their classroom practices as well. Nonetheless, there is a substantial gap in research on pre-service teachers' research engagement, with most studies on the topic focusing on in-service teachers and/or practitioners (Akyel, 2015; Woore, Mutton, & Molway, 2020). Furthermore, as Borg (2015) reported, in comparison to the amount of empirical data collected on the perception of teachers on research engagement, comparatively little has been done concerning this subject in the field of English as a Foreign Language (EFL). Indeed, given that the quality of early experiences is likely to shape and determine later behaviours and that the attitudes towards research tend to be more positive among the students who already possess research experience (Guilbert et al., 2016), investigating pre-service teachers' early experiences with research engagement deserves considerable attention. To this end, this study aims to explore the attitudes of pre-service EFL teachers towards an undergraduate research methodology course and investigate the benefits and difficulties they experienced throughout the process.

2. Literature Review

2.1. Impact of Research Engagement on Pre-Service Teachers

Substantial research has highlighted the importance of teacher research for teaching and learning. Among the reported benefits of teacher research is its potential to contribute to teachers' reflective and critical thinking skills (e.g., Akyel, 2015; Atay, 2008; Borg, 2015). Several studies have indicated that research engagement helps teachers become more analytical in decision-making, evaluation, and problem-solving, which, in turn, can support their empowerment, professional growth and promote their self-esteem (e.g., Thompson, 1996; Price, 2001). Previous studies have further demonstrated that teacher research can unify and foster the relationship and collaboration among colleagues (e.g., Atay, 2008), boost

job satisfaction (e.g., Brydon-Miller, Greenwood, & Maguire, 2003), and bring about renewed enthusiasm about teaching (e.g., Atay, 2008). More broadly, the aforementioned benefits of teacher research have the potential to lead to "better quality teaching and learning in individual classrooms", which may consequently "inform institutional improvement and educational policy" (Borg, 2010, p. 395). However, as mentioned above, both researchers and practitioners have mostly focused on in-service teacher research engagement, and its value among pre-service teachers has received little attention. Previous research engagement studies with this group of target participants are, therefore, comparatively scarce (e.g., Sözbilir, 2007; Van der Linden, 2012; Ögeyik, 2013; Cabaroglu, 2014; Akyel, 2015; Lombard & Kloppers, 2015).

The few studies that focused on this topic have provided emerging evidence that the benefits pre-service teachers acquire through the introduction to research on the undergraduate level are manifold and particularly concern the development of self-efficacy and positive perception of research. To exemplify, Sözbilir (2007) investigated Turkish biology and chemistry pre-service teachers' (N = 76) views toward educational research after they engaged in a small-scale research project. The study reported that participants perceived this activity as a learning process and gained significant knowledge of research methodology and problem-solving skills. In another study, Cabaroglu (2014) found that research engagement helped Turkish pre-service EFL teachers (N = 60) improve their self-efficacy, as there was a statistically significant increase in their self-efficacy scores in all subdomains of the administered scale (namely, student engagement, instructional strategies, and classroom management). Participants also reported a variety of benefits they received with the help of engagement in research in terms of autonomy, reflectivity and confidence building. Another study by Lombard and Kloppers (2015) investigated South African pre-service teachers' (fourth-year undergraduate students) views and experiences towards research. Participants (N = 124) took a compulsory research methods course offered in two modules. The study showed that participants gained confidence regarding research, although they had reported feeling insecure and nervous before taking the course. In a more recent study, Mujdeci (2020) showed that Turkish pre-service EFL teachers (N= 16) reported gaining self-efficacy in conducting teacher research after they conducted small-scale research in a module called Student Teacher Research Module (STRM) developed as a component of the school experience course.

Some other studies, however, have been less optimistic about the impact of the research engagement activities on pre-service teachers. Emerging evidence has shown that not all pre-service teachers benefit equally from research engagement and want to adopt research activities in the future. Akyel (2015), in her study with Turkish pre-service teachers of English (N = 24), found that participants overall benefited from research engagement in analysing, questioning, and reshaping their understanding of teaching. However, only one-third of the participants reported that "they would definitely like to be engaged in research" (p. 10) as full-time teachers, while more than two-thirds stated that they would do research provided that the administration supports them. Therefore, the study suggested that there should be stronger cooperation and support between partner schools and faculties of education. Pre-service teachers' perceptions towards research were also investigated by Van der Linden (2012). Participants were 29 second-year students at a Dutch primary teacher education institution, who took an introductory research course. Findings illustrated that participants developed more positive attitudes towards research, although they found conducting and using research significantly more important than enjoyable. The study further showed that even those participants who did not plan to conduct research in the future still valued learning about research. Other studies, however, report that pre-service teachers still held negative attitudes conducting research after their research engagement course (e.g., Ulvik, 2014; Van Katwijk et al., 2021). Van Katwijk et al. (2021), for example, summarized the potential reasons for such negative perceptions of research as follows: pre-service teachers would prefer practicing teaching

rather than conducting research; research engagement is cognitively demanding and stressful for them; and it is generally a mandated task that requires assessment.

2.2. Barriers to Teachers' Research Engagement

As the uptake of research engagement is still reported to be low among in-service teachers (e.g., Akyel, 2015; Brooks, 2021; Consoli & Dikilitaş, 2021), there must be factors constraining this process. The first such factor reported in relation to teachers' engagement-with-research is the difficulty level of academic literature in English. Studies of teachers' consumption of and attitudes towards research literature show that teachers do not always value it as a means for communicating information. Zeuli (1994) studied 15 teachers' understanding of three articles on educational research and found that half of the teachers in the study had problems understanding the main points and evidence in the articles. In another study, the novice teachers in the study of MacDonald, Badger, and Whites (2001) claimed that the knowledge gained in their research-based course on language learning was overly 'theoretical' and difficult to use. Understanding of the research literature might pose even greater difficulties for EFL teachers, for whom English is often not their first language (L1). Rets, Coughlan, Stickler, and Astruc (2020b) examined the readability level of 200 academic reading materials across different subject categories and found that more than 86 percent of those materials required an advanced and/or native level of English language proficiency. As Bartels (2003) hypothesised, since language generally signals membership to a specific group, teachers might feel estranged from the target audience of academic literature.

Another constraining factor for teacher research engagement reported in previous studies is the professional climate in the school they teach, which might be unsupportive of teacher research and disconnected from school improvement priorities. Ebbutt, Worrall, and Robson (2000) reported that only two of six schools that participated in the study had an established research culture and "even in those two there were trenchant issues" (p. 280). Tindowen, Guzman, and Macanang (2019) further unpacked the barriers that teachers experienced with research engagement in their everyday practice, with additional workload imposed on teachers by research identified as the most significant factor. Additionally, the authors elicited from the responses of participating teachers that they often experienced anxiety when engaging in research, particularly around analysing data and reporting results. While, on the one hand and similar to previous studies, Tindowen et al. (2019) found that teacher research engagement improves the process of teaching and learning, the study suggested that schools should adopt mechanisms to support collaborative teacher research and provide opportunities for more research-oriented professional development for teachers.

2.3. Significance of the Study, Aim, and Research Questions

As discussed previously, while the introduction of pre-service teachers to research orientates them towards research activities and teacher professionalism, the attitudes of pre-service EFL teachers towards research or the challenges they go through are among the topics that need to be investigated in more depth.

Accordingly, the significance of this study is two-fold: First, although there is a substantial body of research on practicing (i.e., in-service) teachers' research engagement, there are comparatively fewer studies that are concerned with pre-service teachers' research engagement (e.g., Akyel, 2015; Cabaroglu, 2014; Lombard & Kloppers, 2015; Mujdeci, 2020; Ögeyik, 2013; Sözbilir, 2007; Van der Linden, 2012). Studies which employed pre-service EFL teachers, in particular, have received comparatively less attention. Secondly, even though there are some empirical data revealing the attitudes of in-service

teachers towards research, the benefits and difficulties of research engagement, as perceived by Turkish pre-service EFL teachers, have received little attention in the literature – with the exception of Cabaroglu (2014), Akyel (2015), and Mujdeci (2020) to the best of the authors' knowledge. Therefore, this study contributes to the existing body of literature by providing such empirical data from the perspective of pre-service EFL teachers in the context of Turkish Higher Education.

In the light of this background, this study seeks to investigate the attitudes of Turkish pre-service EFL teachers towards an undergraduate research methodology course and explore the perceived benefits and difficulties of this course for their research engagement. Specifically, the following questions guided this study:

1. What are Turkish pre-service EFL teachers' attitudes towards research in relation to the self-efficacious, affective, cognitive, and behavioural aspects of research engagement?
2. What are the perceived benefits and difficulties when engaging *in* and *with* research among Turkish pre-service EFL teachers?

3. Method

3.1. Design

This descriptive study adopted a mixed-methods cross-sectional survey research design (Cohen, Manion, & Morrison, 2018; Creswell, 2012). In cross-sectional designs, generally attitudes, beliefs, or opinions are examined (Creswell, 2012) and "...different respondents are studied at one or more different points in time" (Cohen et al., 2018, p. 347), enabling a "snapshot" (p. 348) of the participants at a certain point in time.

3.2. Participants and Setting

The sample comprised university students (N = 32) enrolled in the Department of Foreign Language Teaching, Faculty of Education at a state university in Turkey. At the time of data collection, participants were enrolled in a compulsory undergraduate course, Research Methodology in English Language Teaching (ELT). All participants were sophomore (second-year) students aged between 20 and 28 (M = 21.34, SD = 1.65). The majority of the participants (75%) were female and the rest (25%) were male.

The setting of the study was a full-time intensive four-year bachelor programme. All participants took the research course for the first time in their undergraduate studies, and, thus, it was their first research experience. The research course is a compulsory four-credit course that undergraduate students take in the fourth semester of their academic program. The class meets twice a week for four hours per week. This course serves as a comprehensive introduction of pre-service EFL teachers to the basic research concepts and problems encountered in ELT scientific investigation, individual step-by-step design, and implementation of a small-scale study.

Throughout 14 weeks, pre-service teachers engage in a number of tasks: In the first few weeks, they attend theoretical lectures on research concepts and in-class discussions of relevant ELT articles, while also reviewing the literature with respect to their interests and choosing a research topic. After gaining theoretical knowledge, they design a small-scale study and submit their research proposals. Upon receiving feedback from their instructors, they start data collection, conduct analysis, and write their research papers. Before submitting the final drafts, they undergo two blind internal peer reviews within the course: for the introduction, literature review and methodology part of their papers, and later – for the interpretation of results, conclusions, and references. In the last two weeks of the semester, all pre-service teachers present their studies in class followed by Question & Answer sessions and receive feedback from

their instructors and classmates. Lastly, they submit their final research papers via an online plagiarism check software.

3.3. Instruments

The data were triangulated using the following instruments: a survey that generated quantitative data (Attitudes toward Research Engagement Survey, ARES), and two qualitative instruments: an open-ended survey (see Appendix A) and semi-structured focus-group interviews (see Appendix B).

The ARES, which elicited quantitative data, was developed by the authors following the standard procedures for developing a survey (Creswell, 2012): After a comprehensive review of the related literature, the initial draft of the categories and items was prepared. The categories of attitude used both in the ARES survey and the interview questions –self-efficacious, affective, cognitive, and behavioural– were adapted from Van der Linden (2012). The self-efficacious category indicates pre-service teachers' judgment about their ability to do research. The affective category is concerned with whether pre-service teachers enjoy and find it attractive to conduct and use research. The cognitive category refers to the pre-service teachers' understanding of the need and importance, as well as perception of the possibilities of conducting and using research as prospective teachers. Finally, the behavioural category refers to pre-service teachers' plans to conduct research when they become in-service teachers. Since one of the aims of the study was to analyse the perceived benefits of the research methodology course, we also included another category (i.e., benefits of the course).

The open-ended survey (see Appendix A) and semi-structured focus-group interviews (see Appendix B) that elicited qualitative data were similarly developed by the authors. The open-ended survey included five items that required participants to share their experiences regarding their engagement in and with research. Interview questions were developed under the four categories inspired by Van der Linden's (2012) categorizations (namely, behavioral, cognitive, affective variables, evaluation of the course, and research self-efficacy) and involved a total of 18 questions.

The reliability and validity of these instruments were evaluated through a number of measures. Initially, we presented the data collection tools to three field experts and revised the tentative ARES, open-ended survey, and interview questions in accordance with their professional opinions. Then, we piloted the instruments with 28 participants as we wanted to ensure that the data collection tools were appropriate in terms of redundancy, clarity, and readability (Creswell, 2012). The pilot participants were third and fourth-year students, who took the Research Methodology in ELT course together with the second-year students due to earlier failure or absenteeism. The participants who took part in the pilot study were excluded from the actual data collection process. The pilot participants were asked to write comments next to the items if there was anything unclear or complex, and the most provided positive comments regarding the clarity and comprehensibility. Having analysed the data of the pilot study and participants' comments, we rephrased some items. Following the pilot study, in the final stage, after collecting the data from participants, a reliability analysis was conducted to establish the internal consistency of the answers on the survey. The reliability analysis demonstrated that the Cronbach's Alpha reliability coefficient of the instrument was .92. To ensure reliability, trustworthiness, and validity of the qualitative data analysis, all qualitative data were analyzed by both authors. First, we inductively coded data independently and then compared and contrasted the codes in a reflective session. In the instances of a mismatch or disagreement, the codes were thoroughly discussed and aligned, until an agreement was reached.

3.4. Data Collection Procedure and Analysis

Data were collected in the 13th and 14th weeks of the course, after participants finished their research projects and submitted the final manuscripts. First, the authors distributed the ARES and open-ended survey as hard copies to participants. Participation was voluntary, and those who did not want to participate returned their surveys blank. Secondly, we randomly selected participants (n = 15) and invited them to the semi-structured focus-group interviews, who were grouped randomly. Each focus-group, except one, had four participants, and a total of four different focus group meetings were arranged. Participants' native language (i.e., Turkish) was chosen for the interviews so that they would not feel intimidated and could express themselves more comfortably. All the interview sessions which lasted, on average, 68 minutes were audio-recorded and then transcribed by the researchers for the analysis.

The quantitative data were analysed by using Statistical Package for Social Sciences (SPSS24). Descriptive statistics and frequency analyses were employed to analyse the data obtained from the survey. The qualitative data were inductively analysed using content analysis by finding the recurrent patterns and themes recursively and iteratively (Cohen et al., 2018; Dörnyei, 2007).

4. FINDINGS

In relation to each research question, the quantitative findings from the survey and qualitative findings from the open-ended survey and semi-structured focus-group interviews are presented and discussed in the following sections.

4.1. Survey

4.1.1. Research self-efficacy

The analysis of the first category –research self-efficacy– demonstrated that the majority of the participants found themselves self-efficacious regarding conducting research, as indicated in Table 1. To be more specific, item 1 aimed to reveal their confidence in conducting research, and the findings demonstrated that the majority of the pre-service teachers (71.9%) felt confident about their abilities to conduct research after their research engagement. Almost one-third of the pre-service teachers (28.1%) reported that they did not feel confident about their abilities to conduct research. The analysis of the following items –items from 2 to 7– demonstrated that the majority of the pre-service teachers perceived themselves as knowledgeable about the design of a study (93.8%), how to search for information (96.9%), collect (96.9%), analyse (93.7%), discuss the data (90.6%) as well as have a command of APA rules (93.8%). Thus, the findings indicated that nearly all pre-service teachers (above 90%) regarded themselves as knowledgeable in terms of the research knowledge mentioned above (see Table 1) after taking the course.

Table 1
Research Self-efficacy

Item	M	SE M	SD	Totally Disagree n (%)	Disagree n (%)	Agree n (%)	Totally Agree n (%)
1. I feel confident about my ability to conduct research.	2.93	.14	.80	1 (3.1%)	8 (25)	15 (46.9)	8 (25)
2. I know how to design a study.	3.25	.10	.56	-	2 (6.3)	20 (62.5)	10 (31.3)

3. I know where to find information about a research topic.	3.31	.09	.53	-	1 (3.1)	20 (62.5)	11 (34.4)
4. I know how to collect data for my research.	3.31	.09	.53	-	1 (3.1)	20 (62.5)	11 (34.4)
5. I know how to analyse the results.	3.09	.08	.46	-	2 (6.2)	25 (78.1)	5 (15.6)
6. I know how to discuss the results.	3.12	.09	.55	-	3 (9.4)	22 (68.8)	7 (21.9)
7. I know APA rules.	3.28	.10	.58	-	2 (6.2)	19 (59.4)	11 (34.4)

4.1.2. Affective category

The affective category included four items and aimed to explore pre-service teachers' attitudes towards research regarding affective considerations. Regarding item 8, more than half of the pre-service teachers (65.6%) stated that they had had anxiety about conducting research before taking the research course. However, the analysis of item 9 showed that the majority of the pre-service teachers (75%) did not have anxiety after taking the course, while a small number of them (25%) still had some anxiety (see Table 2) even after taking the course. At the same time, the findings of item 10 indicated that after taking the Research Methodology course, the majority of participants overcame their anxiety. As for the last item in this category which aimed to find out whether pre-service teachers like conducting research, the findings indicated that half of the participants (50%) found it enjoyable, whereas the other half (50%) did not like to be engaged in research activities.

Table 2
Affective Category

Item	**M**	**SEM**	**SD**	**Totally Disagree *n* (%)**	**Disagree *n* (%)**	**Agree *n* (%)**	**Totally Agree *n* (%)**
8. I used to have anxiety about conducting research.	2.84	.15	.88	2 (6.2)	9 (28.1)	13 (40.6)	8 (25)
9. I still have anxiety about conducting research.	2.18	.15	.89	6 (18.8)	18 (56.2)	4 (12.5)	4 (12.5)
10. Research course helped me overcome my anxiety about research.	2.81	.12	.69	1 (3.1)	8 (25)	19 (59.4)	4 (12.5)
11. I like doing research.	2.53	.16	.91	4 (12.5)	12 (37.5)	11 (34.4)	5 (15.6)

4.1.3. Cognitive category

The items in the cognitive category aimed to reveal pre-service teachers' attitudes towards conducting and using research. The findings of item 12 showed that more than half of the pre-service teachers (56.3%) did not like reading ELT literature. Regarding items 13-14, most pre-service teachers (78.1% and 84.4%, respectively) thought that research engagement should be encouraged during their university education, and they found it important to learn about research. Contrary to the aforementioned items in this category, items 15 and 16 were aimed to reveal pre-service teachers' attitudes regarding doing research. Although there is no considerable difference between the findings of items 15 and 16, participants were inclined to favor conducting some parts (87.4%) rather than an entire research project (78.4%).

Table 3
Cognitive Category

Item	**M**	**SEM**	**SD**	**Totally Disagree** *n* **(%)**	**Disagree** *n* **(%)**	**Agree** *n* **(%)**	**Totally Agree** *n* **(%)**
12. I enjoy reading the ELT literature (e.g., research papers, journal articles, etc.).	2.46	.14	.84	3 (9.4)	15 (46.9)	10 (31.2)	4 (12.5)
13. University education should encourage undergraduate research engagement.	2.87	.11	.65	1 (3.1)	6 (18.8)	21 (65.6)	4 (12.5)
14. All ELT undergraduate university students should learn about research.	3.00	.13	.76	2 (6.2)	3 (9.4)	20 (62.5)	7 (21.9)
15. All ELT undergraduate students should conduct at least some part of a research project during their university study.	3.15	.12	.72	1 (3.1)	3 (9.4)	18 (56.2)	10 (31.2)
16. All ELT undergraduate students should conduct at least one entire research project during their university study.	3.00	.14	.84	2 (6.2)	5 (15.6)	16 (50)	9 (28.1)

4.1.4. Behavioral category

The findings of the items in the behavioural category demonstrated a divide between participants: half of the participants (53.2%) found it important for in-service teachers to conduct research, whereas the other half (46.8%) did not find it important. Similarly, half of the participants (50%) planned to conduct research once they become in-service teachers, yet the other half were not planning to do so.

Table 4
Behavioural Category

Item	M	SEM	SD	Totally Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Totally Agree *n* (%)
17. It is important that in-service teachers (primary, secondary school teachers) conduct research.	2.65	.15	.86	2 (6.2)	13 (40.6)	11 (34.4)	6 (18.8)
18. I am planning to conduct research when I become an in-service teacher.	2.46	.16	.91	5 (15.6)	11 (34.4)	12 (37.5)	4 (12.5)

4.1.5. Benefits of the course

In the last category, the aim was to investigate the perceived benefits of the course. As findings demonstrated, the majority of the participants stated that the course helped them become more reflective (78.1%) and analytical (84.4%). Nevertheless, fewer participants stated that the course raised their awareness about their future professional development (65.6%). The same tendency was observed in the findings obtained from the analysis of the last item in this category concerning how meaningful this research course would be for their in-service teaching. Whereas slightly more than half of the participants (56.2%) found it meaningful, the rest (43.7%) disagreed with the statement.

Table 5
Benefits of the Course

Item Taking research course….	M	SEM	SD	Totally Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Totally Agree *n* (%)
19. prepared me to be a more reflective teacher.	2.90	.10	.58	-	7 (21.9)	21 (65.6)	4 (12.5)
20. made me more analytical.	3.03	.10	.59	-	5 (15.6)	21 (65.6)	6 (18.8)
21. raised my awareness about my future professional development.	2.81	.12	.69	-	11 (34.4)	16 (50%)	5 (15.6)

22. made my future in-service teaching more meaningful.	2.68	.13	.78	1 (3.1)	13 (40.6)	13 (40.6)	5 (15.6)

4.2. Open-ended Survey

The findings of the open-ended survey were analysed by using inductive content analysis and are presented below as themes exemplified by the extracts from the data. Table 6 illustrates the themes concerning the first question in the open-ended survey:

Table 6
Themes for Open-ended Question 1

The course is beneficial	**The course is not beneficial**
Teaching practices (*n* = 6)	If not planning to be an academic (*n* = 2)
Future career plans (*n* = 5)	Dislike research practices (*n* = 2)
Self-improvement (*n* = 6)	
Specific research topic (*n* = 6)	

Firstly, findings demonstrated that most participants found the research course beneficial in terms of improving their future teaching performance. The following two extracts exemplify the feeling of empowerment they acquired through the research methodology course.
"...it [the research course] will help [improve my future teaching performance]. We will be able to adjust our classes in the future in accordance with the research we will conduct because thanks to this course, I learned a lot of things about conducting research."

"My research was about social networking sites and the attitudes of the students towards it. I think it [doing research] is helpful. If I come to know the interests of my students through research, I can make their language acquisition more efficient."

Moreover, as can be seen from the extracts, the research methodology course also contributed to raising their awareness of their career plans. After taking the course, some participants realized that they wanted to continue their academic studies or receive a master's degree.
"It [the research course] helped me because I want to be an academic and it developed my skills."

"Conducting research helped me to think about master degree because now I know how to conduct a study, and I don't feel afraid of it. Also, even if I teach at state schools, I will conduct research."

Furthermore, some pre-service teachers stated that they had learned a specific research topic, which they had been working on during the course. Therefore, they thought that the course contributed to developing more in-depth knowledge of that topic that they would later apply in their future teaching practices:
"[The research course] definitely helped me because I now know more things about motivation. So, the skills I learned here will help me to observe students […] in a more effective way."

"[Doing research] will help me because it helped me understand that I should supply written error correction or written error correction with the oral one, and learners generally do not prefer oral error correction alone."

Apart from the aforementioned perceived benefits of the course, some participants stated that it contributed to their overall self-improvement, as they could evaluate the information they received more analytically and that they developed their general problem-solving skills.
"I think [doing research] might help because I know that if I come across some problems, I know a way to solve them by myself."

In the meantime, despite there were participants, who unconditionally thought that the course was helpful, some pre-service teachers thought that the course was particularly helpful in terms of familiarizing them with research, in case they decide to pursue an academic career. To exemplify, one participant stated the following:
"I believe that it will help my teaching career if I want to continue my academic education. However, I am not sure whether it will help me when I work at a state school."

From the extract above, it can be understood that the pre-service teacher thought the course was helpful only if s/he decides to go to graduate school. However, some participants did not find the course beneficial due to the fact that they disliked research as a process. There was also one participant who changed their mind about their career plans after taking the course.
"The research course made me think more realistic about my future teaching career because it is really difficult to deal with research things."

There was also one participant who was neutral toward the effectiveness of the course and stated the following:
"Actually, I don't know because I don't want to conduct empirical research in the future. Maybe when I see it is necessary to carry out research that is related to my students, I can conduct a study so as to overcome problems."

Nevertheless, overall, the majority of the pre-service teachers found the course helpful.
In the next item in the open-ended survey, the pre-service teachers were asked whether they liked reading research. The findings of Item 2 showed that the majority of pre-service teachers (n = 18) did not like reading research, as opposed to those who liked being engaged in reading research (n = 14).

Table 7
Themes for Open-ended Question 2

Like	**Dislike**
Self-improvement (*n* = 8)	Too statistical, scientific or academic (*n* = 3)
Affective factors (*n* = 5)	Boring (*n* = 8)
Professional Improvement (*n* = 2)	Literature review (*n* = 2)
	Not helpful (*n* = 1)
	Reading activity in general (*n* = 4)
	ELT field (*n* = 1)

Among the stated reasons in favor of reading research, participants emphasized that reading research was a learning experience that contributed to their self-growth. For example, one of the participants emphasized that reading research contributed to the development of a non-bias approach to analysing the nature of the information they might be exposed to:
"…[reading research] gives you different ideas and helps you to look at from other perspectives and plus, they are based on some science."

"… reading studies makes me more knowledgeable about all the matter that probably I will encounter one day."

"…[reading research] broadens my horizon."

Another recurring theme obtained in the analysis of this item was the idea that reading research can be an affective factor. Among the positive emotions experienced by participants were inquisitiveness, enjoyment, excitement; as exemplified by the following extracts:
"I don't know why I like reading research, but I feel that I do something important while reading research. Also, I really love learning new things and being informed." (self-worth)

"I enjoy reading mostly the results part since I am curious about the things indicated by the participants." (inquisitiveness)

"When I see the topic that I am interested in, I immediately want to see the previous research activities and also in a chronological order of the studies and analyse them. It really makes me excited." (excitement)

"…there are really interesting topics that I enjoy reading." (enjoyment)

Moreover, participants stated that reading research helped develop their professional competencies:
"I really like reading studies in the ELT field. It is a great source for me to learn new aspects of a topic."

Among the negative emotions, boredom was frequently referred to by participants as a reason why they did not like reading research:
"I don't like reading research because I think the language is too academic, and it is boring for me while I am reading."

Even though the difference between those who liked and did not like reading research was not sharp, most participants stated that they disliked reading due to a number of reasons. Besides boredom described above, other recurring themes in the qualitative data were the challenges that participants encountered with the language being too academic and formal, and the presentation of data being too statistical.
"No, because I don't like reading so many statistical data."

"I don't like reading research because I think the language is too academic and it is boring for me."

Some pre-service teachers stated that they disliked reading some specific parts of the research paper, such as the literature review part. However, their attitudes towards reading the other parts of the paper might be different:
"Actually, I am not interested in the whole research paper. I just like reading the details about methodology part and the results."

Some pre-service teachers also stated that they did not like reading research; nevertheless, they stated that it was because of their reading habits overall:
"I don't like reading generally in my daily life."

"I am getting bored while reading something. This is my general mood."

Finally, one participant observed that reading research could be enjoyable when s/he read outside of the ELT field.

"I don't like reading research, but it depends on the topic. I am not really interested in my field (language teaching) but I like to read other studies in areas of literature or social sciences."

The responses provided for Item 3, which investigated whether pre-service teachers liked conducting research, differ from the findings of Item 2. Even though the majority of pre-service teachers (n = 18) stated that they did not like reading research as described in detail above, findings of Item 3 demonstrated that the majority of them (n = 17) liked conducting research. The recurring themes for the item are presented in Table 8.

Table 8
Themes for Open-ended Question 3

Like (n = 17)	**Dislike (n = 15)**
Self-improvement (n = 6)	Writing in general (n = 1)
Affective factors (n = 8)	Time-consuming (n = 4)
	Statistics (n = 2)
	Difficult (n = 3)
	Boring / not interesting (n = 4)

Similar to the themes in items 1 and 2, participants referring to the reasons as to why they liked conducting research, emphasized the ideas of self-improvement and research triggering affective factors, such as enjoyment, feeling of self-worth and accomplishment.

"I feel that as if I do something very important while conducting research. Also, I like these kinds of formal issues. In addition, I was really curious about the results of my research. That is why I like conducting research." (self-worth)

"I like conducting research. It is totally different than what we do as assignments for other courses. It makes you important. It makes you feel that you are doing something important, useful." (self-worth)

As to the negative responses provided for this item, some participants stated that conducting research was a time-consuming activity.

"No, because it [conducting research] requires a lot of effort, time, and patience, and I don't have any of these."

"No, it [conducting research] takes too much effort and time so that I don't like to spend much time on it."

Some participants stated that conducting research was too challenging for them.

"I don't like it [conducting research] because I find it very difficult. Especially, SPSS program is really problematic."

"It [conducting research] is a serious responsibility for undergraduate students."

Finally, participants' previous experience with writing influenced their perceptions of scientific writing, which is an inherent part of conducting research.

"No, not really since, in general, I don't like writing long papers."

The next item in the open-ended survey aimed to investigate the perceived difficulties the pre-service teachers faced with regard to the course. In Table 9, the difficulties faced by the pre-service teachers are presented in detail:

Table 9
Difficulties Pre-service Teachers Faced During the Research Process

Difficulty	***n***
Finding a questionnaire	11
Reviewing the literature and finding related studies	10
Time limitation	10
Analysing the data & SPSS	5
Deciding on the research topic	4
Collecting the data & data collection process	4
The organization and formal language of the research paper	3
Anxiety	2
APA rules	1

As can be seen from Table 9, the greatest difficulty that pre-service teachers came across during this process was finding a questionnaire which would fit both the aim of their studies and the research questions they were investigating. During the course, they were required to get permission from the author(s) of the questionnaires they wanted to adopt, which made finding a questionnaire difficult for them. The second greatest difficulty faced by pre-service teachers was reviewing the literature and finding related studies as some of them had chosen novel research topics resulting in a difficulty to contextualize them.

"Headache…a lot. Finding studies for my research was difficult."

"Finding sources to support my research was my biggest problem. Because there weren't so many studies done about my topic."

They also stated that they had had difficulty in deciding on the research topic and collecting and analysing the data. Although it was not a formal requirement, most pre-service teachers used SPSS to analyse the data, and some of them (n = 5) stated that they had difficulty with it. Other difficulties, despite the low frequency of response, depicted by pre-service teachers were anxiety they felt before the course and the difficulty of understanding APA rules.

"I faced some difficulties during my research process. For example, I was anxious because it was the first research study for me." (anxiety)

A highly frequent theme concerning the difficulties participants faced during the course was the time limitation. Since the course was offered within one semester, participants found it difficult to manage to learn extensive amounts of information about the theory and practice of research in such a short period of time.

"I think we need more time to understand how a proper study should be conducted and more time to conduct our study."

"Only one semester is not enough for a research course. One semester should be theory-based and the other should be practice based."

4.3. Interviews

Semi-structured focus-group interviews with randomly selected pre-service teachers (n = 15) were conducted to gain a deeper understanding of participants' attitudes towards the research they were involved in. The interview findings were in line with those obtained from the surveys, and the content analysis revealed the following themes from the interviews.

In the first category, the interviewees were asked about the perceived benefits of the research methodology course in pre-service teacher education. The majority of the participants (n = 12) stated that they found research engagement in pre-service teacher education valuable, and the reasons were as follow: contribution to self-worth, self-awareness, motivation as well as its usefulness in their educational and professional lives. As two participants noted:

"This course makes us feel good. The things we learn from this course can later be used in our undergraduate and graduate educational lives, or in professional lives as teachers. It makes us feel so good and improve ourselves"

"I think even the perspective that this course gave us is satisfactory. It is not only from a theoretical but a philosophical perspective."

Moreover, some participants stated that the course helped them raise their self-awareness:

"I started to like my department more after I took this course since I saw my potential, and when I saw it, I felt more and more motivated."

Despite the fact that some participants believed that only students who plan to continue their graduate education should take a research methodology course, some participants held the opposite views, stating that possessing research skills was, in fact, something that they would most probably need when they start teaching:

"I think people should not think about their graduate studies only. Well, when we become teachers, we might eventually face some problems in the classroom environment. Our students may not learn certain things, or have difficulty in certain points, or feel reluctant. In such cases, we can conduct research. At least, we know which way to follow."

There was also a small number of participants (n = 3) who stated that this course was not valuable or useful, and their reasons were related to their career plans. They thought that when they become teachers working in state schools, they would not need such research skills. In one of the focus groups, the following debate took place:

Interviewee 1: When we become teachers in the future, I do not think that this course will have an extra effect on us.
Interviewee 2: In my opinion, it is too comprehensive for someone who would like to work in state schools (MoNE). This is the most challenging and unnecessary course I have ever taken in my undergraduate education.
Interviewee 3: Well, as for me, it is the course which has made me feel most valuable since at the end of it, you put out something, a product. It feels like you are doing something serious.

The analysis of the data showed that the majority of the interviewees held positive opinions toward the usefulness and value of the course. Regarding the positive outcomes, they stated that they learned about the subject they had investigated (e.g., oral vs. written feedback, flipped classroom); it contributed to their future professional teaching lives; they learned how to access resources and analyse

data; all of which raised their self-awareness by motivating them. Two interviewees also stated that they had improved their academic writing skills. Some indicated that their ability to analyse improved, and they learned how to think "academically".

Following this, the interviewees were asked whether they would continue to be research-engaged when they become in-service teachers, and the majority of the responses (n = 11) were positive. As they noted:

"I do not want to be an ordinary teacher because I think it is boring. It is therefore important to be different than the profile of a stereotype teacher."

"I now feel curiosity. I ask myself 'Why is it the case?' or I review the literature to find the reasons for certain things. Well, this course aroused our curiosity. I think like I need to find the reason, or I ask myself 'why?'"

On the other hand, a small number of participants (n = 3) held negative views about research engagement. They stated that as long as it was not necessary, they were not planning to engage in research activities.

In the second category, the questions regarding the affective factors were asked to the interviewees. Nearly all participants (n = 13) pointed out that they had had anxiety before taking this research methodology course, yet they emphasised that they overcame their research anxiety thanks to the following reasons: the academic reading and writing class they had taken in the previous semester, the step-by-step nature of the course, peer support, etc. For example, two pre-service teachers stated the following:

"I don't have any research anxiety now. I feel like I conquered all my fears and I achieved something throughout the end of the course."

"I think as we saw what we were capable of, our anxiety went away."

As to the challenges they faced, they indicated the following issues, which were similar to the ones stated in the surveys: academic writing, learning the theory/practice simultaneously, entering and analysing the data via SPSS, the formative nature of the course (following deadlines constantly), finding a questionnaire that was compatible with the aim of the research questions, writing the introduction part of the research paper. They also stated that they felt most confident in doing research (n = 1), reviewing the literature (n = 1), writing the literature review (n = 2) and methodology (n = 1) sections of a research paper, compiling the reference list (n = 1) or elaborating on conclusions (n = 1). Regarding the aspects which they felt least confident about, the following were pointed out by participants: academic writing (n = 3), entering and analysing the data via SPSS (n = 2), writing the introduction of a research paper (n = 3), results (n = 2), or discussion (n = 2).

5. Discussion

This study aimed to gain insights into Turkish pre-service EFL teachers' attitudes towards research engagement as part of an undergraduate research methodology course in which they conducted individual research. The results from the quantitative and qualitative data that came from a Likert-scale, an open-ended survey, and semi-structured focus-group interviews were consistent, and, overall, demonstrated that pre-service teachers started to develop positive views about research.

The first research question was concerned with pre-service teachers' attitudes towards research in relation to self-efficacious, affective, cognitive, and behavioural aspects. Regarding *self-efficacy*, the findings demonstrated that after taking an undergraduate research methodology course and conducting

research, participants felt self-efficacious, and the majority of them felt confident about their abilities to conduct research. Participants also indicated that thanks to the course, they learned how to design a study, where to find information about a research topic, how to collect and analyse data, discuss the results and follow APA rules. This finding aligns with the findings of Cabaroglu (2014), Lombard and Kloppers (2015), and Mujdeci (2020), who similarly reported that pre-service teachers gained confidence in their research skills after being introduced to research.

Concerning the *affective* aspect, the findings indicated that the research methodology course helped participants overcome their research anxiety. More than half of the participants stated that they had felt anxiety before taking the course; however, the majority of them did not report having anxiety after the course. This is in line with Lombard and Kloppers (2015) who also reported that most pre-service teachers felt insecure and nervous before taking a research methods course. However, more research is needed in this area to investigate whether research methodology courses contribute to overcoming research anxiety.

As for the *cognitive* aspect of the pre-service teachers' attitude towards research engagement, the findings demonstrated that more than half of the participants did not like reading ELF literature (engagement *with* research), yet they thought it was an important course on the undergraduate level. Moreover, most participants stated that an entire project could be conducted by undergraduate students (engagement *in* research). This finding supports the results of earlier studies (Akyel, 2015; Cabaroglu, 2014; Van der Linden, 2012), which showed that pre-service teachers found it valuable to learn about research, but reading and understanding research literature might pose difficulties for teachers and/or EFL speakers (Zeuli, 1994; MacDonald et al., 2001; Rets et al., 2020b).

The findings regarding the *behavioural* aspect illustrated that only slightly more than half of the participants thought it was important for in-service teachers to conduct research. Similar results were reported concerning their own plans regarding their future professional research engagement. This finding aligns with the findings of Van der Linden (2012) and Akyel (2015), who showed that although pre-service teachers found research engagement valuable, not all of them had plans to conduct it in the future on the in-service level.

The second research question probed into the perceived benefits and difficulties in relation to participants' engagement *in* and *with* research. Participants found the course beneficial and indicated several points as to how the course helped them, among which was the empowerment of their future teaching practices and professional competencies (Cabaroglu, 2014; Seymour et al., 2004). Among other benefits of research engagement, this study showed that it helped participants make more informed choices regarding their future careers (e.g., career in academia), as well as contributed to their self-improvement (e.g., developing a non-biased, reflective approach to teaching) (Akyel, 2015; Odhiambo, 2010) and acquisition of more in-depth knowledge of a specific research area. Along with these benefits, participants also reported that the course fostered their inquisitiveness, the feelings of self-worth and accomplishment. Nevertheless, it should be noted that a slightly higher number of pre-service teachers enjoyed engagement *in* research (n = 17) than engagement *with* research (n = 14) for several reasons reported earlier in the results section.

Among the difficulties most frequently reported by participants were time limitation (as they learned about research theory and conducting individual research projects within a 14-week semester), which concur with the findings of earlier studies (e.g., Akyel, 2015; Capobianco & Ní Ríordáin, 2015; Mujdeci, 2020; Ulvik, 2014). Our study further showed that finding the relevant studies and questionnaires that pre-service teachers could adopt for their research projects was another common difficulty they voiced. Regarding engagement with research, the indicated difficulties concerned the academic and formal language as well as the plethora of statistical data featured in the studies, which made participants feel bored and detached. General reading habits also affected their attitudes towards

engagement with research, as some participants reported not enjoying reading in general. As for engagement in research, some participants found this process too challenging (Akyel, 2015), due to the nature of academic writing. Our study corroborates a number of earlier studies (Akyel, 2015; Tindowen et al., 2019), which also reported time limitation and additional workload as barriers to teacher research engagement.

The findings of this study demonstrated close connections with the earlier studies described in the literature and are in line with the studies conducted with the pre-service teachers from other majors (e.g., Guilbert et al., 2016; Ögeyik, 2013; Sözbilir, 2007; Van der Linden, 2012), which reported that, overall, pre-service teachers benefited from hands-on research engagement. Our findings also concur with Akyel (2015), as our study similarly indicated that the pre-service teachers, who had prior research engagement experience, had more positive attitudes towards research, than those who did not (Guilbert et al., 2016). Moreover, fostered self-efficacy as a result of research engagement revealed by our study in both quantitative and qualitative data is in line with other studies (e.g., Cabaroglu, 2014; Mujdeci, 2020; Van der Linden, 2012). Van der Linden (2012) concluded that "student teacher judgments about themselves as being able to conduct and use research were rather positive after the introductory course" (p. 78).

Nevertheless, one of the most important findings of this study was revealed when comparing the cognitive and behavioural aspects of participants' attitudes towards research engagement. Although most pre-service teachers stated that they found the research methodology course and engagement in research important, only around one-third of them planned to conduct research when they become in-service teachers. Similar results were revealed in the study of Van der Linden (2012), in which participants gave more value to conducting research as an undergraduate student than as an in-service teacher. Correspondingly, Akyel (2015) found that only one-third of the pre-service teachers would like to be engaged in research in the future. Although our study showed that some participants were eager to conduct action research in their classrooms as in-service teachers, our study revealed that other pre-service teachers still had prejudice towards research. Some participants still thought that research was something only academics or graduate students do mainly because they considered it as an academic endeavour. Since most of our participants, following their graduation, planned to work at state K-12 state schools, some participants thought they would not need to conduct research.

6. Conclusions

This descriptive mixed-methods study investigated Turkish pre-service EFL teachers' attitudes towards research engagement and the benefits and difficulties they experienced throughout this process. This study showed that undergraduate research courses in initial teacher education programs, which provide an opportunity for pre-service teachers to conduct individual studies, equip them with the basic research skills, and contribute to shaping a more positive attitude towards research engagement.

The study has some limitations, too, and they highlight the need for future research. First, the sample size was comparatively small, all participants were enrolled in the same programme, and the data came only from the Turkish pre-service teacher education context. Therefore, the findings have limited generalisability, and further studies should investigate the effects of research methodology courses on pre-service teachers in different contexts with larger sample sizes. Particularly given the scarcity of research investigating research engagement among pre-service EFL teachers, more research with this group of participants would be a worthwhile pursuit. Future studies that shift their focus from postgraduate/in-service teachers to pre-service teachers' research engagement can contribute further to the discussion of how to improve undergraduate research methodology courses. Finally, this study adopted a descriptive research design, yet future studies might adopt experimental research designs to

observe the change in pre-service teachers' attitudes toward research and to investigate time-varying considerations.

Despite these limitations, the study also provides some implications. First, more research engagement opportunities (both in and with research) should be provided for pre-service teachers during their education. Second, given its contribution to the importance of the research-teaching nexus in initial teacher education programs, this study might be of great use for educational policymakers in Turkey and elsewhere, as it provides an understanding of how pre-service teachers experience and perceive their engagement in and with research. However, at the same time, some critical steps should be taken in order to change the perceptions of pre-service teachers regarding research, as our study showed that the majority of participants still considered it as an academic endeavour, even after taking the course. As also stated by Brooks (2021),

Without a more active orientation to research in the various national and regional Teacher Standards, and a shift in public opinion that sees teaching as a research-led (and not just practical) activity, then the expectations of new teachers will be that research is more of a 'nice to have', rather than an essential component of their teacher education. (p. 17).

Therefore, academics and/or teacher educators/trainers offering these research courses, and policymakers, might consider reshaping research courses in a way that pre-service teachers would not consider research as an academic endeavour, but rather as something they would need as a part of their teaching career. In order to do so, reflective practice and research engagement should not be limited to the research courses only and should be promoted in other courses as well.

To conclude, teaching should be viewed both as a practice and research-oriented profession, and teachers' research experience (i.e., engagement both in and with research) and culture, especially among pre-service teachers, should be promoted as early as possible to enhance their competencies and future teaching and reflective practices: because as the twig is bent, so is the tree inclined.

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APPENDIX A
Open-ended Survey

1. Do you like reading research? Why/Why not?
2. Do you like conducting research? Why/Why not?
3. Do you think the research you conducted will affect you anyhow in your future teaching career? Why/Why not?
4. Did you come across any difficulties during your research process? If so, what difficulties did you come across?
5. What can be improved in the research methodology course?

APPENDIX B.
Interview questions

A. Benefits of research in general and research methodology course (Behavioral + Cognitive variables)

1. What do you think about research in pre-service teacher education?
1.1. How valuable do you think research is in pre-service education? Why/Why not?
2. What do you think about your research engagement in your future professional teaching career?
2.1. Are there any positive outcomes of the research methodology course for you as a pre-service teacher? If yes, what are they?
2.2.. Are you planning to continue to be research engaged when you become an in-service teacher? Why/Why not?

B. Affective variables

3. Did you use to have anxiety about research before taking the research methodology course? Why/Why not?
3.1. If yes, do you still have anxiety about research? Why?
3.2. If you used to have anxiety but not anymore, what helped you to overcome it?
4. What do you think about *reading* research?
4.1. Do you enjoy it? Why/Why not?
5. What do you think about *doing* research?
5.1. Do you enjoy it? Why/Why not?

C. Evaluation of the course

6. Would you change and/or improve anything in the research methodology course? If yes, what would it be?
7. Would you leave the research methodology course as it is? If yes, what would stay the same?
8. What was the biggest challenge for you during this course?

D. Research self-efficacy

9. Do you feel efficacious about doing research? Why/Why not?
9.1. What aspect(s) of research do you feel most efficacious about?
9.2. What aspect(s) of research do you feel least efficacious about?