



**A STUDY ON THE DESIGN AND USE OF A
MINDFULNESS-ENHANCED LANGUAGE TEACHING
MOBILE TOOL:
PRE-SERVICE EFL TEACHERS' PERCEPTIONS
MA THESIS
Dicle SARIKAYA
Eskişehir 2025**

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MA THESIS

**Department of Foreign Language Education
MA in English Language Teaching Program
Supervisor: Prof. Dr. Safiye İpek Kuru Gönen**

**Anadolu University
Graduate School
May 2025
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ABSTRACT

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Department of Foreign Language Education
MA Program in English Language Teaching
Graduate School of Anadolu University, May 2025
Supervisor: Prof. Dr. Safiye İpek Kuru Gönen

The present study presents the developmental procedures of a mobile application named MELTApp, designed to support Mindfulness-Enhanced Language Teaching (MELT) and investigates pre-service EFL teachers' experiences regarding the use of the mobile application and the accompanying five-week training. The study also sought to explore whether the training had an impact on the participants' mindfulness levels. A total of 19 participants participated in the study. Quantitative data were gathered through the pre- and post-administration of the Five Facet Mindfulness Questionnaire (FFMQ), and qualitative data were collected through weekly reflective logs and semi-structured interviews. While descriptive and non-parametric tests were used to analyze the quantitative data, the Constant Comparison Method (CCM) was applied to analyze the qualitative data. The results revealed a statistically significant improvement in participants' mindfulness levels after the training. The participants found the training sessions pedagogically informative and engaging. They also viewed MELTApp as a user-friendly and versatile tool that provided both personal and professional support. In particular, participants reported that MELTApp could be effectively integrated into language teaching contexts. Nevertheless, suggestions were made for improving app design. Grounded in existing literature, the findings offer pedagogical implications for integrating mindfulness and educational technology into language teaching.

Keywords: Mindfulness in language education, teacher education, educational technology, mobile-assisted mindfulness

ÖZET

BİLİNÇLİ FARKINDALIKLA ZENGİNLEŞTİRİLMİŞ DİL ÖĞRETİMİ MOBİL ARACININ TASARIMI VE KULLANIMI ÜZERİNE BİR ÇALIŞMA: HİZMET ÖNCESİ İNGİLİZCE ÖĞRETMENLERİNİN ALGILARI

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Bu çalışma, Bilinçli Farkındalıkla Zenginleştirilmiş Dil Öğretimi (MELT) desteklemek amacıyla geliştirilen MELTApp adlı mobil uygulamanın geliştirme süreçlerini sunmakta ve İngilizce öğretmeni adaylarının hem mobil uygulama hem de beraberindeki beş haftalık eğitime ilişkin deneyimlerini araştırmaktadır. Ayrıca, çalışmada eğitimin katılımcıların bilinçli farkındalık düzeyleri üzerinde bir etkisinin olup olmadığı da incelenmiştir. Çalışmaya toplam 19 katılımcı dahil olmuştur. Nicel veriler, Beş Boyutlu Bilinçli Farkındalık Ölçeği'nin (BBBFÖ) ön-test ve son-test uygulamaları, nitel veriler ise haftalık yansıtıcı günlükler ve yarı yapılandırılmış görüşmeler aracılığıyla toplanmıştır. Nicel veriler betimsel ve parametrik olmayan testler, nitel veriler ise Sürekli Karşılaştırma Yöntemi ile analiz edilmiştir. Elde edilen sonuçlar, katılımcıların bilinçli farkındalık düzeylerinde istatistiksel olarak anlamlı bir artış olduğunu ortaya koymuştur. Katılımcılar, eğitimi bilgilendirici ve ilgi çekici bulmuşlardır. MELTApp ise hem kişisel hem de mesleki anlamda destek sunan, kullanıcı dostu ve çok yönlü bir araç olarak değerlendirilmiştir. Katılımcılar MELTApp'in öğretim bağlamlarına etkili bir şekilde entegre edilebileceğini belirtmişlerdir. Bununla birlikte, uygulama tasarımının geliştirilmesine yönelik öneriler de sunmuşlardır. Mevcut alan yazınıla ilişkilendirilen bulgular, bilinçli farkındalık ve eğitim teknolojisinin dil öğretimine entegrasyonu açısından çeşitli pedagojik çıkarımlar sunmaktadır.

Anahtar Kelimeler: Dil eğitiminde bilinçli farkındalık, öğretmen eğitimi, eğitim teknolojisi, mobil destekli bilinçli farkındalık

FINAL APPROVAL FOR THESIS

This thesis titled “A Study on the Design and Use of A Mindfulness-Enhanced Language Teaching Mobile Tool: Pre-Service EFL Teachers’ Perceptions” prepared and submitted by Dicle Sarıkaya in partial fulfillment of the requirements in “Code of Graduate School of Anadolu University” for the Degree of Master of Arts in the Department of English Language Teaching has been examined and approved on 14/05/2025.

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Dicle SARIKAYA'nın “Bilinçli Farkındalıkla Zenginleştirilmiş Dil Öğretimi Mobil Aracının Tasarımı ve Kullanımı Üzerine bir Çalışma: Hizmet Öncesi İngilizce Öğretmenlerinin Algıları” başlıklı tezi 14/05/2025 tarihinde aşağıdaki jüri tarafından değerlendirilerek “Anadolu Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliği'nin ilgili maddeleri uyarınca, Yabancı Diller Eğitimi Ana Bilim dalında İngilizce Eğitimi Programında Yüksek Lisans tezi olarak kabul edilmiştir.

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I hereby truthfully declare that this thesis is an original work prepared by me; that I have behaved in accordance with the scientific ethical principles and rules throughout the stages of preparation, data collection, analysis, and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study and included these sources in the references section; and that this study has been scanned for plagiarism with the “scientific plagiarism detection program” used by Anadolu University, and that “it does not have any plagiarism” whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.

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I declare that I received support from a generative artificial intelligence program, ChatGPT, while preparing this thesis. I have received support from a generative artificial intelligence program for language translation and paraphrasing during the preparation of the thesis. I declare that I have checked the accuracy of the information I received from generative artificial intelligence programs. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.

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Bu tezi hazırlarken üretken yapay zekâ programı ChatGPT’den destek aldığımı beyan ederim. Tezin hazırlığı aşamasında üretken yapay zekâ programlarından çeviri ve yeniden ifade etme desteği aldım. Üretken yapay zekâ programlarından aldığım bilgilerin doğruluğunu kontrol ettiğimi bildiririm.

Herhangi bir zamanda, çalışmamla ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçları kabul ettiğimi bildiririm.

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Eskişehir 2025

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LIST OF ABBREVIATIONS

EFL	: English as a Foreign Language
ELT	: English Language Teaching
ESL	: English as a Second Language
L2	: The Target Language
MELT	: Mindfulness-Enhanced Language Teaching
MELL	: Mindfulness-Enhanced Language Learning

CHAPTER 1

1.INTRODUCTION

This chapter includes the background to the study, the statement of the problem, the purpose of the study, the significance of the study, the limitations of the study, and the definition of key terms. In the *Background to the Study* section, an outline based on the literature on mindfulness, mindfulness in education, English as a foreign language (EFL) teaching, English as a second language (ESL) teaching, and technology-enhanced mindfulness practices in EFL and ESL teaching are provided. In the section *Statement of the Problem*, the research gap in mindfulness in EFL and ESL teaching is highlighted by addressing the current studies and their recommendations, which are used to clarify the problem. The following section, *Purpose of the Study*, reveals the motives behind the current study and the research questions. In the subsequent section, *Aim and Significance of the Study*, the anticipated contribution of the study to the current reservoir of studies, as well as its significance in the field, are delineated. Additionally, the *Scope and Limitations of the Study* provides the constraints that prevented the study from obtaining more comprehensive results. Finally, the *Definition of Key Terms* section describes the key terms and their abbreviations.

1.1.Background to the Study

In contemporary educational settings, teachers and students encounter unparalleled academic and emotional demands. The shifting profiles of students, the incorporation of digital technologies, and changing expectations for achievement in school have highlighted the growing necessity of promoting emotional resilience and psychological well-being in educational environments (Collie, 2022). In such an environment, fostering emotional regulation, self-awareness, and coping strategies is crucial for both learners and educators (Fallah, 2016). A widely recognized method for its comprehensive advantages is mindfulness (Kuru Gönen, 2022). Instead of presenting reactive solutions that only alleviate emotional distress, mindfulness offers a proactive and transformative method for addressing difficulties. It promotes present-moment awareness, acceptance, and nonreactivity, allowing people to regulate their emotions, reframe challenging experiences productively, and develop psychological resilience (Kabat-Zinn, 2013). Mindfulness, by fostering well-being and

clarity, provides a significant framework for addressing the cognitive and emotional intricacies of contemporary education.

Although the concept of mindfulness has historically been influenced by contemplative traditions, contemporary psychological research and interventions have largely adopted a secular and evidence-based approach to mindfulness practices (Creswell, 2017). In 1979, Jon Kabat-Zinn designed the Mindfulness-Based Stress Reduction (MBSR) program at Massachusetts Medical School (Kabat-Zinn, 2013), and ever since, it has been integrated into different aspects of life in a secular manner. According to Kabat-Zinn (2003), in this aspect, mindfulness can be defined as the state of being aware that arises from intentionally directing one's concentration to the current moment, without making judgments, and observing the continuous flow of experiences.

Kabat-Zinn (2013) further explains that the key elements of mindfulness in MBSR are comprised of seven attitudinal parameters. The elements encompassed in this collection are non-judging, patience, a beginner's mind, trust, non-striving, acceptance, and letting go. These attitudes need to be deliberately nurtured during mindfulness exercises, as they are interrelated and supportive of each other, with each one impacting and depending on the nourishing of the other. Aside from these fundamental components of mindfulness practices, there are additional mental and emotional traits that enhance and intensify the integration of mindfulness in everyday activities. The virtues encompassed in this compilation are non-harming, generosity, gratitude, forbearance, forgiveness, kindness, compassion, empathic joy, and equanimity. These features are not independent of the seven fundamental attitudes; instead, they emerge spontaneously from them and from being mindful of our behavior in times of difficulty (Kabat-Zinn, 2013).

Mindfulness, as mentioned above, is being blended into different components of life in various ways, and it significantly enhances multiple features, including “visuospatial processing, working memory, and executive functioning” (Zeidan et al., p. 597) due to its effect on the physiological processes of the human body. In other words, mindfulness has the capacity to directly affect how the body processes stress using a 'bottom-up' technique, and this entails modifying crucial stress-related mechanisms in the body, notably the sympathetic–adrenal–medullary (SAM) and hypothalamic–pituitary–adrenal (HPA) axis (Tang, 2017). Tang (2017) explains that mindfulness meditation helps mitigate the body's

'fight-or-flight' reaction, normally activated by the sympathetic nervous system, by enhancing the activity of the parasympathetic nervous system (rest and digest reaction), which induces relaxation. In essence, this modulation can aid in the prevention or reduction of stress responses, resulting in a more serene and harmonious physiological state (Thayer & Lane, 2000; Creswell, 2014). Moreover, Chin and Kales (2019) highlight that mind-body practices activate the parasympathetic nervous system and reveal that controlled breathing exercises enhance the ability to relax and recover, triggered by the rest and digest mode. Furthermore, from a neurological perspective, Jung and Lee (2021) have demonstrated that mindfulness can impact brain wave patterns by augmenting alpha and theta waves, which are associated with feelings of calmness and meditative experiences. In addition to the effects of mindfulness on the brain, Hölzel et al. (2011) underline in their investigation that MBSR brings about changes in the concentration of gray matter in specific regions of the brain that are important for learning and memory, regulating emotions, processing self-related information, and adopting alternate viewpoints. Thanks to the benefits of mindfulness, an increasing number of studies have shown its advantages in several contexts, including healthcare programs, company operations, sports, and education.

Education, in recent years, has been increasingly influenced by the integration of mindfulness (Collie, 2022; European Union, 2024; Jennings et al., 2017). In this sense, learning, the mental process of constructing meaning from previous experiences, occurs via multiple mechanisms throughout education. According to Schunk (2012), learning is based on how it takes place, when it is discovered, and how it benefits the learner. With respect to this, it is emphasized that awareness allows individuals to focus on the tasks they are currently performing, which can be extremely beneficial for concentrating on the information that is being presented (Brown & Ryan, 2003), one of the main purposes of mindfulness. From an educational standpoint on awareness, Schoeberlein et al. (2009) observed that students with higher levels of mindfulness perform better academically and achieve more. This implies that mindfulness can be an effective means of improving the desired learning outcomes. Consequently, Fallah (2016) contends that all parties, namely, students, teachers, professionals, and authorities, should be informed of the advantages of mindfulness for students' mental and physical health.

As can be seen, psychological well-being has garnered significant attention in the field of education, and one branch of education in which mindfulness has gained a crucial focus is language teaching. The incorporation of mindfulness into foreign language instruction is considered to be advantageous and has the potential to improve the process of learning a language (Tural & Küçükkaragöz, 2021). As a result, instructional methods that foster well-being, especially mindfulness, are increasingly being incorporated into language classes. According to Kuru Gönen (2022), these methods typically employ a range of strategies, such as breathing exercises, Yoga practices, and journaling, to obtain deliberate focus and overcome anxiety stemming from previous unsatisfactory language learning experiences. However, it is important to note that the methods described are not the sole methods of practicing mindfulness. That is, to be mindful, the attitudes of mindfulness should be incorporated into crucial activities, including language teaching and learning.

In language teaching contexts, the attitudes of mindfulness are listed as non-judgment, acceptance, beginner's mind, patience, non-striving, trust, letting go, compassion, and gratitude (Kuru Gönen, 2022), and each attitude is equally vital and complementary. Kuru Gönen (2022) further explains that in language teaching and learning contexts, non-judgment promotes openness, acceptance builds resilience, a beginner's mind encourages curiosity, patience acknowledges the complexity of learning, non-striving focuses on being present, trust fosters confidence, letting go reduces rumination, compassion promotes self-care, and gratitude enhances appreciation for the learning process. In foreign and second language education, mindfulness has been proven to help students with affective states, academic elements, and language skills. In other words, mindfulness mitigates anxiety toward language learning (Charoensukmongkol, 2019; Choomchaiyo & Varma, 2021; Fallah, 2016; Mortimore, 2017; Öz, 2017), increases motivation (Butto, 2018; Geng, 2021; Ghanizadeh et al., 2019), and promotes self-efficacy (Choomchaiyo & Varma, 2021; Fallah, 2016; Moghadam et al., 2020). In terms of academic elements, mindfulness has been demonstrated to have a significant effect on academic achievement (Hermana et al., 2021; Sheikhzadeh & Khatami, 2017; Zeilhofer, 2023) and academic performance (Azizi & Kiralik, 2020; Öz, 2017; Zeilhofer, 2023). With regards to language skills, mindfulness practices and interventions have reported to have positive influence in the development of reading (Azizi

& Kiralik, 2020; Sheikhzadeh & Khatami, 2017; Moghadam et al., 2020), writing (Waldman & Carmel, 2019; Wang & Liu, 2016), and speaking (Charoensukmongkol, 2019; Öz, 2017).

All in all, originally rooted in early history, mindfulness has undergone a process of secularization and is today applied in diverse spheres of human existence. Research has demonstrated that the practice of mindfulness in educational environments improves students' academic achievement, emotional control, and participation. Integrating mindfulness into language teaching enhances students' emotional states, academic performance, and language skills, emphasizing the comprehensive advantages of this approach (Charoensukmongkol, 2019; Ghanizadeh et al., 2019; Moghadam et al., 2021). Despite the fact that mindfulness offers fruitful outcomes for the language teaching and learning processes, there is a lack of resources regarding feasible practices (Kuru Gönen, 2022) to implement mindfulness in actual L2 teaching and learning contexts. It is of the utmost importance to ensure that mindfulness practices are accessible, adaptable, and compatible with technological tools in FL classrooms, particularly in the current digital era. The sustainability and inclusivity of mindfulness-based instruction can be improved by guaranteeing that these practices are accessible at all times and in every place. As a result, it is imperative to conduct research that concentrates on the incorporation of mindfulness into technology-enhanced FL education in order to address the requirements of 21st-century learners and educators (Zeilhofer, 2023).

1.2.Statement of the Problem

As a complex and multifaceted skill, language teaching and learning involve not only the transfer and use of linguistic knowledge but also the emotional and psychological well-being of learners and teachers (Waldman & Carmel, 2019; Shen, 2022). When viewed from this perspective, mindfulness has the potential to be an efficient method of enhancing the process of language learning and teaching. Thus, language learners should be provided with training on mindfulness, and the learning materials should include the notion of mindfulness and related practices (Charoensukmongkol, 2019; Hermana et al., 2021; Lin, 2020; Navaie et al., 2022; Morgan & Katz, 2021; Tural & Küçükkaragöz, 2021; Zeilhofer & Sasao, 2022). Language practitioners and teachers may have limited knowledge about how mindfulness can be incorporated into their classrooms due to insufficient background knowledge on

mindfulness, its characteristics, and methods, as well as a dearth of published studies on the application of mindfulness in language teaching contexts (Kuru Gönen, 2022, 2024). Therefore, it is suggested that language teacher education should incorporate mindfulness practices for prospective teachers and language teaching materials enhanced with mindfulness (Ghanizadeh et al, 2019; Moghadam et al, 2020; Moghadam et al., 2021; Önem, 2015; Sheikhzadeh & Khatami, 2017; Yuan et al., 2020).

In addition to the necessity of materials on language teaching and mindfulness, there is a need for additional research on this subject. The majority of the studies utilize quantitative methods and employ a diverse array of instruments, including the Langer Mindfulness Scale (LMS), the Five Facet Mindfulness Questionnaire (FFMQ), and the Mindfulness Attention Awareness Scale (MAAS). The associations between mindfulness practices and various variables are frequently investigated by pairing these instruments with other domain-specific tools, such as the Achievement Motivation Scale (AMS) and Foreign Language Classroom Anxiety Scale (FLCAS). These studies often focus on correlating mindfulness with factors such as language anxiety (Charoensukmongkol, 2019; Choomchaiyo & Varma, 2021; Fallah, 2016; Geng, 2021), L2 self-efficacy (Ghanizadeh et al., 2019; Hermana et al., 2021), and academic performance (Moghadam et al., 2020; Sheikhzadeh & Khatami, 2017; Stringer & Looney, 2020; Tural & Küçükkaragöz, 2021). It is suggested that future research should employ qualitative methods, such as interviews and case studies (Xie & Guo, 2022) to explore how mindfulness practices can be applied to foster effective L2 learning.

Despite the existence of several studies on the notion of mindfulness and its use in foreign language or second language contexts, the use of mindfulness in the teaching of languages is still relatively new. Therefore, Kuru Gönen (2023) coined the concepts Mindfulness-Enhanced Language Teaching (MELT) and Mindfulness-Enhanced Language Learning (MELL). Accordingly, the term MELT denotes the comprehensive integration of mindfulness concepts into foreign/second language teaching contexts by employing mindfulness-based practices and a mindful attitude that is consistent with the outcomes of SLA research (Kuru Gönen, 2023). MELL, which is founded on the concept of establishing a mindful learning environment in language learning to foster motivation, personal development, compassion, and empathy, strives to enhance the learning experience that is ingrained in the framework of language learning (Kuru Gönen, 2023). Based on the ideas of

MELT and MELL, Kuru Gönen and Sarıkaya (2023), in their study, developed a digital platform (www.mindfulnessinelt.com) that serves as a free online resource with a plethora of activities and materials on the integration of mindfulness into L2 settings. This online platform provides online training to teachers worldwide about various aspects of mindfulness associated with language learning and teaching. The participants, 95 EFL teachers in Türkiye, expressed in their reflective logs that although the website offers effective guidance and materials, there exists a need for a mobile application regarding MELT. That is, there is a need for teachers to access MELT materials and activities in a mobile fashion to ease the applicability of mindfulness-related activities ubiquitously. In this aspect, although there are numerous mobile applications available to help people practice mindfulness, and the ones that were developed and promoted exclusively for children of school age (Chittaro & Vianello, 2014), there is no specific app tailored exclusively for language teachers to integrate mindfulness into their teaching. This feedback underscores the necessity for mobile solutions designed for language educators, while also indicating a wider deficiency in pre-service L2 teacher education regarding the incorporation of mindfulness. Technology-based tools and mobile applications can be useful platforms for promoting mindfulness practices by providing flexibility, customization, and constant support for teacher well-being and professional development (Tang & Hew, 2017). Nonetheless, despite their promise, there exists a significant deficiency of digital tools explicitly tailored to facilitate mindfulness within language teacher education (Kuru Gönen & Sarıkaya, 2023). Research has highlighted the insufficient emphasis on mindfulness within teacher education programs, especially for pre-service language teachers (Önem, 2015; Sheikhzadeh & Khatami, 2017; Yuan et al., 2020). Hence, the aim of this study is, via a mobile application that offers various materials, activities, and information on MELT and a training, to explore whether the training had any effects on the participants' mindfulness levels, to examine the opinions of pre-service EFL teachers on the MELTApp training regarding the incorporation of mindfulness into language teaching, and to investigate their experiences with the utilization of the application.

1.3.Aim and Significance of the Study

In light of a gap in the existing literature on the incorporation of mindfulness into L2 study, the present study presented the design of a mobile application regarding MELT, named

MELTApp, provided comprehensive training for pre-service EFL teachers on the use of it, and explored their opinions on the mobile application and the integration of mindfulness into language teaching and learning. In the present study, the training is named “The MELTApp Training”, and it refers to a program exclusively designed for pre-service EFL teachers that encompasses fundamental guidance on mindfulness-enhanced language teaching and the systematic use of MELTApp. Thus, this study implemented a mobile application in the realm of mindfulness-enhanced language teaching and explored pre-service EFL teachers’ opinions regarding the application of MELT in L2 teaching contexts. The study further sought to explore whether the exclusive training on MELTApp had an impact on the participants’ mindfulness levels. Consequently, the subsequent research questions were asked:

RQ1. Is there any effect of the MELTApp training on the participants’ mindfulness levels?

RQ2. What are the experiences and reflections of pre-service EFL teachers about the MELTApp Training?

RQ3. What are the experiences and reflections of pre-service EFL teachers regarding the use of MELTApp in their teaching and personal practices?

This study aims to contribute to the previous research by presenting the first mobile application intended to provide language teachers with guidance and materials on mindfulness, provide training on it, and reveal pre-service EFL teachers’ opinions about their experiences concerning the training and the app. As mentioned, there is a scarcity of qualitative and mixed-method studies, and there is a dominance of quantitative studies (e.g., Choomchaiyo & Varma, 2021; Geng, 2021; Hermana et al., 2021; Moghadam et al., 2020; Stringer & Looney, 2020; Yuan et al., 2020; Zeidan et al., 2023). Hence, the current study has the potential to make a significant contribution to the existing reservoir of research.

Studies on mindfulness and language teaching/learning mainly focus on presenting a single mindfulness activity, such as guided meditation or breathwork, to investigate the effects of such activity on various aspects of language learning (e.g. anxiety, motivation, or academic achievement) (e.g., Geng, 2021; Hermana et al., 2021; Shen, 2022; Tural & Küçükkaragöz, 2021; Zeilhofer & Sasao, 2022). Unlike these studies, the present study views mindfulness from a holistic perspective and aims to integrate it within language study regarding language skills and areas. The current study follows the idea of integrating MELT

into language teaching with various resources for different aspects of language study instead of presenting mindfulness in a limited single activity.

To the best of the researcher's knowledge, no prior study has concurrently explored the integration of mindfulness into language instruction via a mobile application, delivered mindfulness training with the app specifically designed for pre-service EFL teachers, and investigated their perspectives on the thorough integration of mindfulness into different elements of language learning. Therefore, the present research contributes to the English language teaching field by providing exclusive training on a free mobile app designed for MELT. This study conducted a comprehensive investigation into incorporating mindfulness into language teaching. It utilized both quantitative and qualitative data collection methods to examine the participants' perspectives on the mobile app, training, and integration. Additionally, the study identified the participants' levels of mindfulness before and after the training. All in all, the study introduced a thoroughly designed MELTApp training program that combines mindfulness, language teaching resources, guidance, and activities for both language learners and teachers.

1.4.Scope and Limitations of the Study

This study specifically examines pre-service EFL teachers, aiming to investigate their experiences and perceptions concerning the incorporation of mindfulness into language instruction via a specifically developed mobile application, MELTApp, and a five-week training program. The scope is defined by the context of pre-service teacher education and does not take into account the perspectives of other stakeholders, including students, mentor teachers, or in-service educators. Additionally, the study exclusively examines the perceptions and implementations of mindfulness-enhanced teaching practices and digital tools by pre-service teachers during their teacher education. It does not include feelings, learning outcomes, or emotional experiences of learners who may ultimately encounter mindfulness-integrated language education. Consequently, the results indicate the efficacy of MELTApp and its training within the structured context of teacher preparation, rather than widespread classroom settings.

The current study was carried out at Anadolu University in Türkiye, involving pre-service EFL teachers who were enrolled in the course *"INO471-Mindfulness Practices in*

English Language Teaching" during the spring term of the 2023-2024 academic year. Therefore, the findings are confined to this specific context and cannot be generalized to account for the perspectives of all EFL and ESL teacher candidates. The training provided to the pre-service EFL teachers spanned a period of 5 weeks; as a result, the limited timeframe may have impeded a more thorough grasp and utilization of the mobile application. Additionally, the views regarding the utilization of the mobile app and the integration of mindfulness into language teaching are limited to the pre-service EFL teachers' experiences only; therefore, future studies should address participants who are actively teaching English at various levels.

1.5. Definition of Key Terms

MELT refers to "integrating the ideas of mindfulness into foreign/second language teaching contexts in a holistic way through mindfulness-based practices and a mindful attitude aligned with the findings of SLA research" (Kuru Gönen, 2023).

MELL refers to "improving the learning experience woven into the fabric of language learning contexts, based on the idea of creating a mindful learning atmosphere in language learning to cultivate motivation, personal growth, compassion, and empathy" (Kuru Gönen, 2023).

Mindfulness refers to "the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise" (Baer, 2003, p. 125).

A mobile application refers to a piece of software specifically designed to operate on portable devices, such as smartphones and tablets, and is often known as a mobile app (Harrison et al., 2013).

Nine Attitudes of Mindfulness refer to specific qualities or mental states that support the practice of mindfulness and help individuals cultivate a non-reactive, present-focused awareness (Kabat-Zinn, 2013).

Widgets refer to "editable text or number fields, sliders, scrollbars, buttons, knobs, dials, meters, and menus" (Johnson, 1992, p.273).

CHAPTER 2

2.REVIEW OF LITERATURE

Understanding mindfulness and its application in education entails having a deeper understanding of the previous research and inherent gap in the ESL/EFL field. This chapter aims to summarize and synthesize the previous studies regarding mindfulness in language teaching and related mobile applications. *Background on Mindfulness* section provides a comprehensive explanation of mindfulness and related notions. The subsequent section, *Mindfulness in Language Teaching and Learning*, focuses on research concerning mindfulness and language teaching and the most recent empirical studies. The next section, *Mobile Applications for Enhancing Mindfulness*, explores the existing mobile apps addressing mindfulness, their use in education, and the gap in literature.

2.1.Background on Mindfulness

In our increasingly fast-paced and complex world, the ability to remain grounded and fully engaged in the present, especially in educational settings, has become more essential than ever. Amid the relentless demands of modern life and ever-changing needs of educational contexts, individuals and professionals seek ways to cultivate emotional resilience, mental clarity, and focused attention. As a result, mindfulness is now being recognized as a pivotal practice offering profound benefits for personal well-being and professional effectiveness. Yet, despite its growing popularity, mindfulness remains a multifaceted concept without a singular, universally accepted definition (Germer & Barnhofer, 2017). To start with, a clear description of mindfulness comprises the deliberate act of attentively and consciously focusing on one's current moment and experiences (Creswell, 2017). Similarly, Kabat-Zinn (2003, p.145) defines it as “the awareness that emerges through paying attention, on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment.”. Leary and Tate (2007) assert that mindfulness encompasses various benefits, such as enhanced communication skills, improved self-regulation, and decreased number of negative opinions concerning the past and future. Concerning this, although mindfulness can be classified as a mental state or a personality characteristic, it is commonly defined as either a practice or an intervention (Vago & Silbersweig, 2012). This implies that mindfulness is both an intrinsic attribute and a skill

that can be nurtured and enhanced through intentional practices or therapies. As such, its application can be customized to numerous situations, including personal development, stress alleviation, or the enhancement of cognitive and emotional regulation across various settings.

The modern conceptualization of mindfulness as a therapeutic practice was pioneered by Jon Kabat-Zinn in the late 1970s, who developed Mindfulness-Based Stress Reduction (MBSR) as a secular, accessible intervention for individuals suffering from chronic stress and illness (Fulwiler & De Torrijos, 2011; Sisk & Kane, 2019). Established in 1979 at the University of Massachusetts Medical Center, MBSR integrated meditation, body awareness, and gentle yoga to foster awareness. Its efficacy in reducing symptoms of pain, anxiety, and depression has been widely recognized (Baer, 2003; Grossman et al., 2004; Brown et al., 2007), and it laid the foundation for other mindfulness-based interventions such as Mindfulness-Based Cognitive Therapy (MBCT) and Acceptance and Commitment Therapy (ACT) (Segal et al., 2001). Beyond clinical contexts, mindfulness practices have expanded into business and policy sectors to enhance well-being, emotional regulation, and decision-making in high-pressure environments (Ashley & Reiter-Palmon, 2012; Good et al., 2016; Shonin & Van Gordon, 2015).

The integration of mindfulness practices into educational contexts has gained increasing attention in recent years due to their proven benefits for students' emotional well-being, academic engagement, and holistic development (Meiklejohn et al., 2012; Moafian et al., 2019). Mindfulness supports self-regulation, enhances cognitive functioning, and fosters emotional resilience, making it a valuable pedagogical approach in diverse learning environments (Delavari et al., 2023). Research demonstrates that mindfulness contributes positively to classroom behavior, participation, and focus, particularly among elementary students and those with learning difficulties (Routhier-Martin et al., 2017; Stone, 2014). It not only reduces stress, anxiety, and negative emotions but also improves academic performance and metacognitive awareness (Hassed, 2016). Moreover, mindfulness promotes a comprehensive learning experience by cultivating emotional, bodily, and interpersonal awareness that aligns with holistic education goals (Lau, 2009). International bodies have also emphasized the urgent importance of well-being in education. For instance, the European Commission (2024) highlights that student and teacher well-being are fundamental to academic success, social inclusion, and equitable, high-quality learning environments.

Mindfulness programs grounded in MBSR are extensively adopted in educational institutions to assist students in stress management and enhance concentration (Zenner et al., 2014). Also, neurobiological studies in the field of education have demonstrated that mindfulness enhances self-control, promotes self-reflection, and enhances metacognitive abilities in both students and teachers (Meiklejohn et al., 2012). In this aspect, in the vast landscape of education, mindfulness has been implemented globally (Roeser et al., 2022). For instance, the inclusion of mindfulness in educational institutions is in accordance with various education laws and regulations in the nations of the United Kingdom (Hemming & Hailwood, 2024). Furthermore, Kuru Gönen (2024) asserts that the mindfulness materials she designed exclusively for language teachers, according to Google statistics, are utilized in 41 countries and 5 continents. These collectively indicate that mindfulness has gained substantial global recognition and acceptance as a valuable tool in educational contexts, contributing to the cognitive development and emotional well-being of both students and teachers.

2.2. Mindfulness in Language Learning and Teaching

Language teaching is an evergreen phenomenon that continuously evolves to meet the diverse needs of learners and the demands of an interconnected world. It involves a wide range of methodologies, tools, cultural considerations, research findings, pedagogical innovations, and the psychology of the learners (Talbot & Mercer, 2018) and teachers (Keller et al., 2014). Of the entities mentioned, the psychological well-being of the teachers and learners has been highly valued by educators. One notion that contributes to the well-being of both teachers and learners is mindfulness (Peixoto et al., 2021), which has been shown to significantly reduce foreign language anxiety, enhance concentration, and improve overall academic performance (Gao, 2023; Morgan & Katz, 2021; Schmidt-Fajlik, 2020; Zeilhofer, 2020). By integrating mindfulness into their teaching, language teachers can promote a more supportive learning environment that fosters linguistic proficiency and emotional well-being (Wang, 2022).

In the literature, it has been shown that mindfulness may help to improve psychological wellbeing, especially anxiety (Harrison et al., 2024), and academic performance (Limpo et al, 2023). Considering the advantages of mindfulness in the process of language teaching and

learning, the integration of mindfulness into language teaching promises to yield positive outcomes. Since language learning requires attention to the present moment, language learners may benefit from higher levels of mindfulness. In the same vein, language teachers can improve their instructional strategies by integrating mindfulness practices, which can assist in the formation of a more supportive and empathetic learning environment, the mitigation of teacher burnout, and the management of classroom dynamics (Liu & Du, 2024; Liu et al., 2022). This comprehensive approach not only enhances academic performance (Talbot & Mercer, 2018) and linguistic proficiency (Gao, 2023) but also promotes the emotional well-being of both learners (Fayerberger, 2023) and teachers (He et al., 2023), thereby fostering a more conducive environment for the effective acquisition of language. Various studies have investigated the effects of mindfulness on language teaching and learning, highlighting its positive impact on affective aspects (Azizi & Kiralik, 2020; Charoensukmongkol, 2019; Fallah, 2016; Geng, 2021; Ghanizadeh et al., 2019; Mortimore, 2017; Öz, 2017; Sheikhzadeh & Khatami, 2017), academic elements (Butto, 2018; Hermana et al., 2021; Moghadam et al., 2020; Wang & Liu, 2016; Yuan et al., 2020; Zeilhofer, 2023), and language skills (Azizi & Kiralik, 2020; Choomchaiyo & Varma, 2021; Waldman & Carmel, 2019).

Mindfulness-enhanced language teaching (MELT) (Kuru Gönen, 2023) has bloomed within the realm of L2 teaching in recent years. According to Kuru Gönen (2023), MELT takes a comprehensive approach to L2 instruction, integrating the principles and practices of mindfulness in line with the SLA research findings. She further explains that this all-encompassing perspective on mindfulness and its significance in language learning transcends the mere inclusion of mindfulness as a basic breathing or meditation practice confined to a single segment of a language lesson; instead, it acknowledges the various facets of the language learning journey, covering mental and interpersonal dimensions (Kuru Gönen, 2024). Parallel to MELT, mindfulness-enhanced language learning (MELL) strives to create a nurturing environment that fosters motivation, personal development, and compassion, ultimately enriching the language learning journey (Kuru Gönen, 2023). However, although mindfulness has the potential to enrich the language teaching and learning process, there is a lack of systematic integration of mindfulness into language teaching. Hence, the MELT Program, as well as a website, mindfulnessinelt.com, are

designed as digital tools to integrate mindfulness into ESL/EFL settings (Kuru Gönen, 2024; Kuru Gönen & Sarıkaya, 2023). The MELT Program is an online mindfulness-enhanced language teaching program tailored exclusively for language teachers. The figure below illustrates the constituents of the MELT Program.

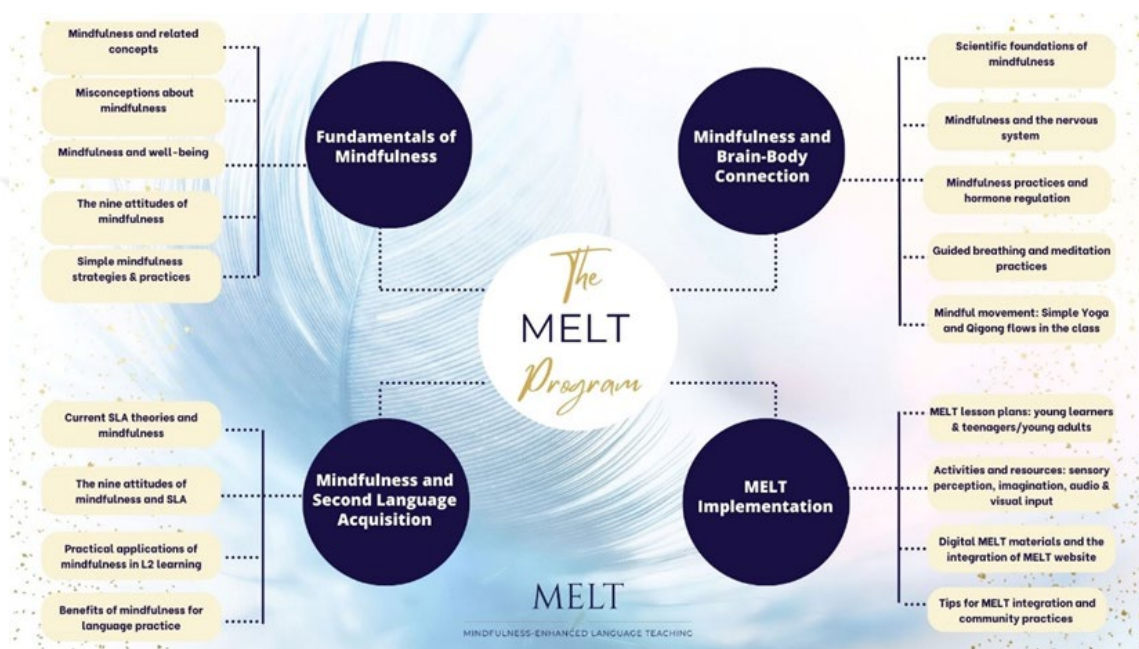


Figure 2.1. *The constituents of the MELT Program from Kuru Gönen (2024)*

As seen in Figure 2.1., The MELT Program primarily focuses on the fundamentals of mindfulness, mindfulness and brain-body connection, mindfulness and SLA theories, and guidance on how to implement MELT in language classes. Each element involves various subdimensions, such as misconceptions about mindfulness, the nine attitudes of mindfulness and SLA, mindfulness and the nervous system, and MELT lesson plans. Kuru Gönen and Sarıkaya (2023) highlighted in their preliminary study that the majority of the participants of the MELT program found MELT materials to be effective in their language lessons, and the MELT website was highly user-friendly and had clear instructions.

2.2.1. Mindfulness and Affective States in Language Classes

In terms of the effects of mindfulness on affective states or the relationship among them, the majority of the studies demonstrate the correlation between mindfulness and anxiety or the impact of the former on the latter. For instance, Charoensukmongkol (2019), with an aim to determine whether the level of mindfulness demonstrated by a sample of Thai students had an impact on the level of anxiety they experienced during English as a second language (ESL) public speaking class, the researcher conducted a study with 333 students. Additionally, the investigator sought to determine whether this effect was associated with the students' proficiency in English communication during classroom presentations. In order to mitigate popular method bias, data were collected from a variety of sources and at varying times. The results of the partial least squares regression analysis suggested that students who exhibited higher levels of trait and state mindfulness reported less anxiety during their presentations. Students with lower levels of anxiety achieved better presentation scores in comparison to those with higher levels of anxiety. Furthermore, state mindfulness demonstrated a more robust predictive capacity for ESL public speaking anxiety than trait mindfulness. This study underscores the potential of mindfulness, particularly state mindfulness, as a valuable psychological resource in reducing public speaking anxiety and enhancing performance in ESL oral communication tasks.

In a similar vein, Geng (2021) aimed to investigate the relationship between mindfulness, foreign language classroom anxiety, and achievement motivation of 300 non-English college students. To this end, the researcher used the Mindfulness Attention Awareness Scale (MAAS), the Achievement Motivation Scale (AMS), and the Foreign Language Classroom Anxiety Scale (FLCAS). The analysis of the data demonstrates that mindfulness exhibits a strong negative correlation with foreign language classroom anxiety and a positive correlation with achievement motivation. Similarly, Fallah (2016) used the MAAS to explore the relationship between mindfulness, coping self-efficacy (CSE), and foreign language anxiety (FLA) of 295 EFL learners in Iran. For data analysis, the researcher employed structural equation modeling (SEM). The results obtained from the SEM analysis revealed a significant negative correlation between mindfulness and FLA, indicating that higher levels of mindfulness were linked to lower levels of FLA. Additionally, there was a

positive relationship between mindfulness and CSE, suggesting that higher levels of mindfulness were connected with larger CSE. These findings imply that fostering mindfulness in language learners may serve as a protective factor against classroom anxiety while simultaneously enhancing their motivation and coping capacity.

Morgan and Katz (2021) sought to examine the relationship between mindfulness and foreign language classroom anxiety (FLCA). They pinpoint that Dörnyei (2009) highlights anxiety as a "curious variable" that diverts a person's attention away from the cognitive requirements of learning due to the individual's self-regulation of emotions. Therefore, there is a serious need for effective solutions to alleviate FLCA. The researchers report that mindfulness meditation holds merit in the realm of positive psychology and can be an effective means of coping with FLCA. For these reasons, they included 142 university students, 76 for the experimental group and 66 for the control group, in the study. To collect data, they used the Freiburg Mindfulness Inventory (FMI), the Foreign Language Classroom Anxiety Scale (FLCAS), and the Mindfulness Experience Questionnaire (MEQ), and administered these before and after the 13-week intervention to both the experimental and control groups. They also collected the opinions of the students. The analysis of the data revealed that the students' mindfulness levels increased after the intervention. Moreover, it was found that the students perceived mindfulness as a transition into a learning mode. They also highlighted that they learned novel strategies to mitigate anxiety, and they were more in control of their emotional regulation. Therefore, the authors propose that future research may reveal that participants may experience superior outcomes from mindfulness sessions conducted in real time with qualified instructors.

Mortimore (2017) conducted a study to investigate the impact of mindfulness practices on foreign language anxiety and language learning results in bilingual primary schools. The research was carried out in a private school in Madrid, encompassing second and third-year students who were divided into control and test groups. The intervention lasted for nine weeks, and the study utilized a blend of qualitative and quantitative methods, such as self-reports, language tests, and teacher observations, to evaluate the influence of mindfulness on students' attentional skills and levels of anxiety. The study yielded varied results. Although there was a slight enhancement in L2 language acquisition among the test

group with higher attention and lower disturbance scores, the overall data was equivocal. The results indicate that mindfulness could potentially have a role in decreasing anxiety and improving concentration. However, the effects were not consistently observed in all measures. The study emphasizes the intricacy of incorporating mindfulness in educational environments and proposes the necessity for extended treatments and additional research to comprehensively grasp the influence of mindfulness on language learning in primary school classrooms.

Along with anxiety, the relationship between factors such as resilience, motivation, and mindfulness was also investigated. Ghanizadeh et al. (2019) explored the relationship between mindfulness, resilience, self-fulfillment, and L2 motivation among Iranian EFL learners. 221 participants were involved in the study, and they completed multiple scales, such as the Langer Mindfulness Scale, L2 Resilience Scale, Measurement of Actualization of Potential, and L2 Motivation Scale. The findings suggest that mindfulness is strongly associated with increased self-fulfillment and resilience. In addition, the practice of mindfulness has both direct and indirect effects on L2 motivation by influencing one's sense of self-fulfillment. The study found that resilience was a strong predictor of L2 motivation, both through direct and indirect pathways. This research emphasized the relevance of mindfulness in developing resilience and self-fulfillment, which in turn improved motivation in language learning settings. The authors propose that the integration of mindfulness into educational practices has the potential to improve learners' motivation and overall academic achievement.

Shen (2022) conducted a study examining the relationship between resilience, mindfulness, and anxiety among Chinese EFL learners. The study included a cohort of 502 undergraduate students from a university. The study employed three questionnaires to assess resilience, mindfulness, and anxiety. The findings of the multiple linear regression analysis indicated that mindfulness and resilience were both significant predictors of the students' anxiety levels, accounting for approximately 15% of the variance in anxiety. The results indicate that increased levels of mindfulness and resilience are linked to decreased levels of anxiety in the context of learning a foreign language. This suggests that these psychological qualities can be valuable tools for alleviating anxiety in educational environments. All in all,

the study underlines the value of incorporating mindfulness and resilience training into language learning.

A recent study by Choomchaiyo and Varma (2021) examined the influence of mindfulness on the fluency of Thai English learners. The researchers also investigated the potential role of irrational thoughts, foreign language anxiety, and self-efficacy as mediators in this relationship. A total of 1,358 Thai students and office workers participated in the study, which utilized a comprehensive 112-item psychometric scale that was adapted from a range of standardized scales. The study findings indicate that mindfulness has a significant impact on reducing foreign language anxiety and irrational thoughts. As a result, it enhances self-efficacy and improves foreign language fluency. The study emphasizes the significance of mindfulness in aiding learners to effectively cope with anxiety and enhance confidence when communicating in a foreign language.

Waldman and Carmel (2019) carried out a study to investigate how practicing mindfulness affects the self-efficacy of pre-service English as a Foreign Language (EFL) instructors related to teaching writing. The study was conducted over a duration of 14 weeks and consisted of an experimental group that incorporated mindfulness meditation into their academic work and a control group that did not. Prior to and during the intervention, both groups underwent assessment using a self-report questionnaire designed to quantify their self-efficacy in teaching writing. The results indicated that the experimental group showed notable enhancements in self-efficacy, specifically in emotional elements, in comparison to the control group. The qualitative data revealed that individuals in the mindfulness group experienced an increase in their feelings of tranquility and assurance in their teaching skills. This suggests that engaging in mindfulness practice may improve teachers' belief in their own effectiveness, especially when it comes to teaching writing. The study illustrates the potential advantages of integrating mindfulness into teacher education programs to assist pre-service teachers in regulating their emotions and enhancing their teaching competence.

Xie and Guo (2022) conducted an exploratory study to examine the correlation between teacher and peer support, mindfulness, and positive academic emotions in EFL learning in China. The study used a group of 268 undergraduate students and measured the

variables using the Teacher-and-Peer Support in English Learning Scale, the English Learning Positive Academic Emotions Scale, and the Mindfulness Attention Awareness Scale. The findings indicated that both teacher and peer support had a favorable impact on positive academic emotions. Additionally, mindfulness acts as a mediator in this relationship. The results indicate that greater levels of support from teachers and peers are linked to an increase in mindfulness, which subsequently results in improved positive academic feelings in students. This indicates that creating a nurturing learning atmosphere and encouraging mindfulness can greatly enhance the emotional well-being and academic achievements of students in EFL settings. The study highlights the significance of incorporating mindfulness practices and strengthening teacher and peer support to foster a pleasant learning environment that promotes students' academic achievement and emotional resilience in language learning settings.

Takiguchi (2015) conducted an exploratory study to thoroughly investigate the potential of incorporating mindfulness practices into ESL instruction at the college level in Japan. The investigation illuminates the numerous obstacles encountered by English instructors at the university level, particularly when interacting with students who demonstrate poor social skills, motivation, and English proficiency. The researcher observed approximately 250 students during the course of the study and identified a substantial discrepancy between their attitudes toward learning English and their actual academic performance. The research indicates that mindfulness practices, which prioritize emotional regulation, non-judgmental acceptance, and present-moment awareness, have the potential to be a critical instrument in the reduction of teacher burnout and the enhancement of student engagement. It is highlighted that mindfulness can assist students in overcoming anxiety and negative past experiences associated with learning English by cultivating a more positive and supportive classroom environment, resulting in improved academic performance. Furthermore, the study supports the implementation of mindfulness training programs for teachers, emphasizing the significance of these programs in enhancing the social and emotional well-being of educators. This, in turn, can significantly enhance the effectiveness of teaching and the learning experiences of students in ESL environments.

In the Turkish context, mindfulness-based practices and their effects on language learning have drawn the attention of researchers, as well. For instance, Öz (2017), in her master's thesis, aimed to investigate the effects of a six-week mindfulness meditation-based intervention program (MMCI) on EFL students. The study investigated the impact of the intervention on various aspects of students' L2 speaking anxiety, mindfulness, willingness to communicate in L2, and performance. A total of 29 students at a private university in Istanbul were divided into two groups: an experimental group and a control group. The study gathered qualitative data through semi-structured interviews and field notes, as well as quantitative data through questionnaires. The experimental group exhibited decreased L2 speaking anxiety, increased communication willingness, and enhanced mindfulness compared to the control group. Also, the experimental group achieved higher scores on the midterm exam. The findings indicate that the MMCI program had a positive impact on students' ability to manage anxiety, communicate effectively, and enhance their academic performance. Therefore, the study suggests that future research may further demonstrate the enhanced effectiveness of mindfulness interventions when they are delivered consistently and in-person by trained professionals.

Önem (2015) also conducted a study to examine the impact of meditation and aromatherapy on anxiety levels and foreign language vocabulary acquisition in ELT students in Türkiye. The study employed an experimental design in which participants were allocated into control and experimental groups. Both groups received instruction on a specific set of vocabulary using identical materials. However, only the experimental group engaged in meditation sessions accompanied by lavender aromatherapy prior to the learning phase. The results revealed that the group that underwent the mindfulness and aromatherapy intervention experienced a noteworthy decrease in anxiety levels and demonstrated enhanced vocabulary retention in comparison to the control group. The findings indicate that the integration of meditation and aromatherapy in foreign language learning environments can significantly decrease anxiety and improve learning outcomes, thereby offering a feasible method for enhancing language instruction and learning.

Overall, findings of the existing body of studies underscore the value of mindfulness not only in addressing emotional and behavioral challenges in the language classroom but

also in laying the groundwork for improved academic performance, thus paving the way for a closer examination of mindfulness and its relationship with academic elements in L2 classes.

2.2.2. Mindfulness and Academic Elements in L2 Classes

Mindfulness has been proven to be intertwined with academic elements, such as academic competence and achievement, in language classes. In an attempt to investigate the effects of a mindfulness intervention on EFL learners' language achievement, positive orientation, and reflective thinking, Moghadam et al. (2021) designed a package of mindfulness practices, such as observance of all experience, analyzing, reasoning, and fantasizing for learners of English. They used three questionnaires before and after the treatment: 1) Langer Mindfulness Scale 2) Reflective Thinking Scale 3) Positivity Scale. In this quasi-experimental study, the experimental group underwent mindfulness-based training utilizing diverse multimedia resources, with a specific emphasis on enhancing attention, involvement, and adaptability. They participated in activities such as transcribing, analyzing, planning, judging, thinking, and daydreaming. The control group engaged in conventional listening and grammatical tasks without incorporating mindfulness methods. The findings suggested that around 50 percent of the variation in reflective thinking might be attributed to the employed approaches. Furthermore, the independent samples t-test provided evidence that the experimental group exhibited noteworthy enhancements in both positive orientation and language achievement. This indicates that the intervention was successful in improving both elements. Therefore, the authors suggest that it is imperative for educational authorities and policymakers to perceive Mindfulness-Based Interventions (MBIs) as a means to enhance the efficacy of education and offer comprehensive training to teachers on how to effectively integrate these approaches into their teaching.

Zeilhofer (2023) investigated the impact of mindfulness, specifically, meditation, on academic achievement and awareness in a foreign language learning environment. The study focused on three cohorts of Japanese university students who were studying the German language. Two groups were provided with guided meditation and count-to-ten meditation, while a control group abstained from meditation. The study evaluated the academic

performance of students, their levels of mindfulness using the Five Facet Mindfulness Questionnaire (FFMQ), and their impressions of meditation using the recently developed Five Spheres of Meditation Experience Survey for one year. The results demonstrate that meditation enhanced academic performance and heightened awareness in comparison to the control group. Furthermore, guided meditation enhanced observation and awareness to a greater extent compared to alternative methods. The study proposes that integrating meditation into language learning could enhance academic achievement, mindfulness, and self-regulation, thus creating a more favorable learning environment.

Building upon the growing interest in the academic implications of mindfulness, subsequent studies have examined its associations with teacher development and student success in more diverse educational contexts. Hermana et al. (2021) sought to investigate the correlations among mindfulness, social-emotional competence, and academic accomplishment of 68 pre-service EFL teachers. These participants were enrolled in the Faculty of Teacher Training and Education at a university located in South Sumatra, Indonesia. The study employed the five-facet mindfulness and social-emotional competence questionnaires and also conducted an analysis of the participants' GPAs employing Pearson's Product Moment Test. The results indicated that the pre-service teachers demonstrated higher levels of mindfulness and social-emotional competence. Both their social-emotional competence and academic performance, as well as their five-facet mindfulness scores, showed a correlation with mindfulness. The absence of judgment in mindfulness and the ability to regulate one's emotions in social-emotional competence were strongly associated with academic achievement. The study found a positive correlation between mindfulness, social-emotional competence, and academic achievement. The authors recommend that integrating mindfulness and social-emotional instruction into the classroom is recommended in order to preserve a balance between the learning process and the emotional well-being of both teachers and students.

A study conducted by Lin (2020) examined the relationship between psychological capital (PsyCap), mindful learning, and English learning engagement among Taiwanese university students. The study analyzed the impact of PsyCap and mindful learning on English learning engagement using data from 245 participants. The results of the structural

equation modeling showed that PsyCap had a significant impact on mindful learning, which subsequently influenced English learning engagement. In addition, the study discovered that the practice of mindful learning completely influenced the relationship between PsyCap and engagement in English learning. The results indicate that incorporating training in PsyCap and mindful learning may prove beneficial in enhancing English learning outcomes for university students.

Contrary to the results of the studies aforementioned, a study conducted by Butto (2018) discovered neutral results about the role of mindfulness practices. The study utilized mindfulness activities to examine their effects on English language learning among Japanese high school students. It sought to tackle the difficulties encountered by students in compulsory education, specifically their limited interest and engagement regarding learning English as a foreign language. The study proposed that incorporating mindfulness tasks into the curriculum could improve students' participation, motivation, and performance in language learning. The study involved 79 students and utilized different statistical analyses to assess the impact of mindfulness on vocabulary acquisition and reading comprehension. Nevertheless, the findings indicated that mindfulness did not have a substantial effect on the language performance of the students. The study emphasized that various factors, including the mandatory nature of the course, surface-level thinking, and external limitations, may have impacted the results. The findings demonstrate that the potential benefits of mindfulness in language learning are more intricate and nuanced than originally anticipated.

The compatibility between mindfulness and critical thinking has been a focus of research. A study conducted by Navaie et al. (2018) examined EFL learners in Iran in terms of this issue. The study included a sample of 250 English majors with the objective of investigating the potential correlation between these two cognitive processes. The California Critical Thinking Test and the Mindfulness Attention Awareness Scale were employed as measurement tools. There was no significant correlation found between overall critical thinking and mindfulness, as well as between their sub-constructs, according to the results. The results indicated that although the participants exhibited superior critical thinking skills, their levels of mindfulness were comparatively lower, suggesting a need for greater incorporation of mindfulness into their learning methods. Although no significant

relationship was found, the study emphasized the value of integrating critical thinking and mindfulness strategies into EFL instruction to potentially improve cognitive and metacognitive skills.

In addition to using quantitative instruments such as questionnaires and surveys to investigate mindfulness and various other factors such as anxiety, achievement, and language proficiency, one study was conducted to explore the phenomenon in depth in ESL/EFL landscapes. In a qualitative case study conducted by Wang and Liu (2016), the researchers sought to explore the effects of mindfulness and mindful learning strategies on Chinese EFL students' learning. To this end, they included 24 first-year students majoring in international business. To investigate the effects of mindfulness, they implemented mindfulness strategies, such as meditation, free-writing, and found poems for three months. In order to collect data, they utilized the participants' assignments, teachers' observation notes, researchers' reflection journals, and semi-structured interviews. Following the analysis of the data, it was found that after the mindfulness sessions, the respect between the teacher and the students grew stronger, and the students' ability to be able to see beyond, that is, to decode the underlying meaning, was much enhanced. What is more, the students expressed that what they had learned exceeded their expectations, and their comprehension had improved. Finally, the teacher of the class highlighted that upon the integration of meditation practices into his teaching, his burden was lessened. Hence, the researchers are for the idea that EFL teachers employ mindfulness techniques to promote enhanced student awareness of the learning process, alleviate stress, cultivate a conducive learning atmosphere, improve attention, facilitate efficient learning, and enhance academic accomplishment.

In the Turkish context, Tural and Küçükkaragöz (2021) conducted a quantitative study to investigate the mindfulness levels of 214 EFL preparatory school students in a Turkish university. The study sought to determine if there were differences in mindfulness levels based on language proficiency, gender, and the students' primary living area, that is, rural and urban. The Mindful Attention Awareness Scale (MAAS) was employed to assess mindfulness, revealing that students generally exhibited a mindfulness level above the moderate range. Nevertheless, contrary to the other studies mentioned, there was no significant relationship between mindfulness and academic achievement, gender, or living

environment. The study found that including mindfulness practices could be advantageous for EFL learners since it aids language acquisition and has the potential to enhance psychological well-being. However, it is suggested that more integration into the curriculum is needed.

2.2.3. Mindfulness Practices and L2 Language Skills and Areas

Language skills such as reading, writing, listening, and speaking and language areas such as grammar and vocabulary with respect to their relationship with mindfulness have become the foci of various studies. For instance, Sheikhzadeh and Khatami (2017) investigated the relationship between attention, awareness, and academic achievement in relation to L2 reading competence among 220 EFL learners in Iran. For this aim, they used the Mindfulness Attention Awareness Scale with 15 items and a multiple-choice reading comprehension test consisting of 31 items selected from an actual TOEFL test. The descriptive statistics demonstrated a positive significant correlation between the students' mindfulness and reading comprehension; however, no statistically significant relationship was found between both mindfulness and critical thinking, and critical thinking and reading comprehension. The authors suggested that language teachers should incorporate practices that enhance awareness and attention in order to increase reading comprehension skills in L2 settings.

The effects of mindfulness practices were not only investigated in relation to language skills and areas. Azizi and Kralik (2020) undertook an exploratory study to investigate the impact of incorporating mindfulness practices into EFL literature courses. The main objective was to improve students' critical reading skills. The research was comprised of 35 undergraduate students who specialized in English language and literature. These students were categorized into two groups according to their results on the Mindful Attention Awareness Scale (MAAS). The intervention involved integrating mindfulness exercises, such as focused breathing and mindful observation, prior to students undertaking critical reading tasks on literature. The study utilized a quasi-experimental methodology, in which data were collected through pre-and post-tests to assess the influence of mindfulness on students' reading proficiency. The paired-samples t-test results revealed a statistically

significant enhancement in the critical reading skills of students who took part in the mindfulness intervention, as compared to their initial performance. The study's results indicate that the implementation of mindfulness practices can significantly improve students' capacity to actively and profoundly interact with literary works, thereby cultivating a learning environment that is more contemplative and concentrated. The researchers suggest that incorporating mindfulness into EFL literature courses not only facilitates the growth of critical reading abilities but also enhances general cognitive involvement and emotional welfare.

Whether engaging in mindfulness practices would have an impact on vocabulary learning has been examined as well. Zeilhofer and Sasao (2022) conducted a study to investigate the impact of mindfulness on vocabulary retention in 269 Japanese undergraduate students who were learning German as a foreign language. The study aimed to investigate the correlation between students' innate levels of mindfulness and their capacity to acquire and retain unfamiliar terms. The study revealed that individuals with higher degrees of mindfulness, namely in the component of "Acting with Awareness," demonstrated superior recall of language. The study also found that distinct parts of mindfulness, such as "Non-judging" and "Observing," had varied effects on different aspects of vocabulary learning. Specifically, "non-judging" was found to be essential for productive learning, while "Observing" was important for receptive learning. The findings indicate that integrating mindfulness techniques into language learning could improve vocabulary acquisition, presenting a new method for enhancing language education outcomes. The study findings emphasize the potential of mindfulness as a strategy to not only enhance overall academic performance but also facilitate specific language acquisition tasks, such as expanding one's vocabulary.

The effects of mindfulness interventions on vocabulary learning have also been examined with respect to the correlation between mindfulness, vocabulary retention, and foreign language learning efficiency. A study conducted by Tung et al. (2021) in a Vietnamese EFL context employed a cross-sectional survey methodology with a sample size of 200 participants to investigate the potential moderating effect of mindfulness practice on the relationship between vocabulary retention and overall language learning efficiency. The

results demonstrated a strong, significant correlation between mindfulness, vocabulary retention, and foreign language learning efficiency. More precisely, the study has demonstrated that mindfulness functions as a regulatory factor, strengthening the relationship between the retention of vocabulary and the overall success of learners in learning a foreign language. This study contributes to the expanding corpus of research by emphasizing the potential advantages of incorporating mindfulness techniques into language acquisition, specifically in enhancing vocabulary retention and overall learning efficacy.

2.2.4. Mindfulness Practices in L2 Teacher Education

In the literature, the effects of mindfulness interventions among in-service EFL teachers, specifically addressing their effects on teacher well-being, classroom efficacy, and resilience, have been examined. For example, Wang and Jiang (2023) conducted a six-week online mindfulness training program for in-service high school English educators in China. The study revealed substantial decreases in mental fatigue and improvements in classroom presence through the utilization of pre-post measurements and reflective journals. Participants indicated an improved capacity to manage student misbehavior and stress amidst elevated workloads. Additionally, Chung and Wang (2022) executed an exploratory qualitative study with 10 in-service EFL teachers who engaged in an eight-week mindfulness course. The researchers identified strengthened teacher-student interactions and increased instructional clarity through comprehensive interviews and teaching journals. Participants characterized the course as transforming, especially in diminishing reactivity and cultivating empathy.

Another study, conducted by Yuan et al. (2020), examined the impact of mindfulness on the professional experiences of two experienced language teachers in China. The study utilized a qualitative case study approach to investigate the impact of mindfulness on teachers' teaching practices and professional development. Five main components of teacher mindfulness: self, teaching and learning, professional development, the situated environment, and time and change were found. The dimensions discovered in this study were found to be interconnected, with ongoing encounters that shape the practices and development of teachers. The study found that incorporating mindfulness into teacher

education can have a positive impact on teachers' well-being and student learning. This suggests that mindfulness should be included as a core component of teacher education programs. The study highlights the significance of adopting an ecological perspective to comprehend the intricate and ever-changing nature of teacher mindfulness and its impact on continuous professional development.

In recent years, growing attention has been directed toward the integration of mindfulness into pre-service teacher education, particularly due to its potential to cultivate emotional regulation, pedagogical confidence, and psychological well-being among prospective educators. Mindfulness-based practices have been shown to enhance pre-service teachers' ability to manage complex emotional situations and develop a greater sense of instructional efficacy. For instance, Waldman (2020) implemented a 14-week mindfulness-integrated curriculum in an English teacher education program in Israel and found a notable improvement in participants' self-efficacy for teaching writing, suggesting that mindfulness can directly support confidence in task-specific pedagogical areas. Similarly, Cochran and Peters (2023) introduced short-term mindfulness and social-emotional learning (SEL) sessions into student teaching seminars, which led to increased teacher efficacy scores and improved emotional regulation during challenging classroom interactions.

Beyond self-efficacy, mindfulness training has also been linked to broader psychological well-being in pre-service teachers. Hue and Lau (2015), through a six-week mindfulness program in Hong Kong, reported reduced stress levels and improvements in emotional clarity and mindfulness, emphasizing the feasibility and effectiveness of short-term interventions. Moreover, the digitalization of mindfulness training has emerged as a promising solution to accessibility concerns. Suganda et al. (2023) explored the use of a mobile-based mindfulness app during the COVID-19 pandemic in Indonesia and found enhanced mindfulness scores and positive participant experiences, demonstrating that mobile technologies can offer flexible and effective tools for supporting teacher well-being and mindfulness habits.

All in all, it is seen that mindfulness has been proven to be influential or related to affective states, academic elements, and language skills. What is more, previous studies

underline the fact that not only students but also teachers can benefit from mindfulness. Likewise, prior research emphasizes that both learners and teachers might gain advantages from mindfulness practices. Integrating mindfulness into teaching practices can result in improved classroom management, minimized burnout, and a stronger capacity to foster the optimal atmosphere for learning. This, in turn, can have a positive impact on the overall learning experience, thereby fostering engagement and success. Incorporating mindfulness into teaching practices can enhance classroom management, reduce burnout, and strengthen the ability to cultivate an ideal learning environment. This can positively influence the overall learning experience, hence enhancing engagement and success. Nonetheless, despite the increasing interest and encouraging outcomes, numerous studies highlight significant deficiencies, notably the absence of structured training in teacher education, restricted access to mindfulness-based resources, and the lack of sustainable, practice-oriented materials that pre-service teachers can implement in actual classroom environments. Such deficiencies become more apparent when the necessity for context-sensitive, scalable, and flexible instruments is taken into account. Consequently, there is a distinct requirement for creative, technology-driven solutions that can connect theoretical concepts with practical application.

2.3. Mobile Applications for Enhancing Mindfulness

The development of tools and resources to support mindfulness practices has expanded in parallel with the growing recognition and adoption of mindfulness across diverse domains, including education. Among the most prominent tools facilitating this expansion are mobile applications such as Headspace, Calm, Insight Timer, and Smiling Mind. These apps provide a wide range of mindfulness exercises, guided meditations, body scans, and reflective activities aimed at enhancing emotional regulation, focus, and general well-being (Anagnostopoulou & Drigas, 2024; Suganda et al, 2023). Their rising popularity reflects an increased demand for accessible and user-friendly platforms that allow users to incorporate mindfulness into their daily routines at their own pace.

Despite the benefits of these applications, they are generally designed for the broader public and target issues like anxiety, sleep quality, eating habits, and workplace stress. Importantly, none of the widely available mindfulness apps are tailored to the specific needs

of educational contexts or teacher training, particularly for language educators. Most lack pedagogical guidance, contextualized practices, or a framework for integrating mindfulness into instructional routines (Mani et al., 2015). This gap underlines the need to examine current applications more closely in order to understand their strengths, limitations, and relevance to the field of language education.

In light of this, several studies have investigated the effectiveness of mindfulness apps across various general domains. For example, Van Emmerik et al. (2017) found that the VGZ Mindfulness Coach app, which delivers 40 exercises without therapeutic support, significantly improved users' mindfulness and mental health outcomes in a randomized controlled trial. Similarly, Bostock et al. (2018) reported that the Calm app reduced work-related stress and sleep disruptions while enhancing users' well-being. Other research, such as Linardon et al. (2019), has focused on specific issues like eating behavior, with results showing significant reductions in symptoms through app-based mindfulness interventions. Furthermore, Kim et al. (2013) examined user personality traits and behavioral intentions, emphasizing that individual differences affect how users engage with mindfulness apps. Collectively, these studies confirm the positive impact of mindfulness applications on psychological outcomes, though they also highlight a lack of focus on educational applications.

Although mindfulness-based mobile tools have been shown to reduce stress, increase focus, and improve well-being in various populations, their educational potential, particularly in the context of language learning and teacher development, remains largely unexplored. This is especially notable given the increasing body of research linking mindfulness to improved cognitive and academic performance, enhanced learner focus, reduced anxiety in foreign language learning, and greater self-efficacy for teachers (Wang & Liu, 2016; Shen, 2022; Waldman & Carmel, 2019). Parallel to this, studies on Mobile-Assisted Language Learning (MALL) have demonstrated that mobile applications significantly improve vocabulary retention, pronunciation, writing skills, and overall engagement among EFL learners. Applications such as Duolingo, Rosetta Stone, Quizlet, and context-specific tools like Jonglish (Ardini et al., 2024) have been successfully implemented to provide interactive, personalized, and multimodal learning experiences.

While the domains of mindfulness and mobile-assisted language learning offer evidence of effectiveness for the integration of mindfulness practices into the educational landscape, there remains a distinct lack of actual platforms uniting both domains, particularly within the scope of language teacher education. To the researcher's knowledge, no existing application has been developed to systematically address both the professional and emotional needs of language teachers through mindfulness practices. To address this gap, the present study aims to design and develop a comprehensive mobile tool, MELTApp (Mindfulness-Enhanced Language Teaching App), tailored specifically for pre-service language teachers. This tool is intended not only to foster mindfulness in language teachers' personal and professional lives but also to serve as a pedagogical resource they can implement in classroom practices. This study is significant because it bridges three underexplored domains, mindfulness, mobile technology, and language teacher education, and contributes to the creation of innovative, research-based tools to support teacher well-being and instructional efficacy in EFL contexts.

CHAPTER 3

3.METHODOLOGY

This chapter presents a comprehensive overview of the research design, including the setting and participants of the study, the design and development process of MELTApp, the details of the MELTApp training, the instruments and tools used for data collection, the data collection procedure, and the data analysis methods employed to derive the study results.

3.1. Research Design

The purpose of this study is to design and develop a mobile tool for Mindfulness-Enhanced Language Teaching which consists of necessary information and materials for language teachers, provide a comprehensive and systematic training for pre-service EFL teachers to learn how to use it themselves and integrate it into their teaching, determine whether the training had an effect on their mindfulness levels, and explore their opinions regarding the mobile tool and the training. To this end, this study implements an embedded mixed-methods research design by Creswell (2012). This design is particularly appropriate when one sort of data (either qualitative or quantitative) serves as the primary source of information while the other provides supporting insights. In this study, qualitative data serves as the primary data source, providing deep insights into participants' experiences. This is corroborated by quantitative data, which examines quantitative changes in participants' mindfulness levels. This design was chosen because it allows for the combination of reflections and quantitative data, resulting in a more thorough and context-sensitive understanding of how mindfulness-oriented educational technology can help language teachers progress. The research consists of two main phases: (1) The Development and Design of MELTApp; (2) Training on the Use and Integration of MELTApp. The following figure depicts the data collection procedure of the study:

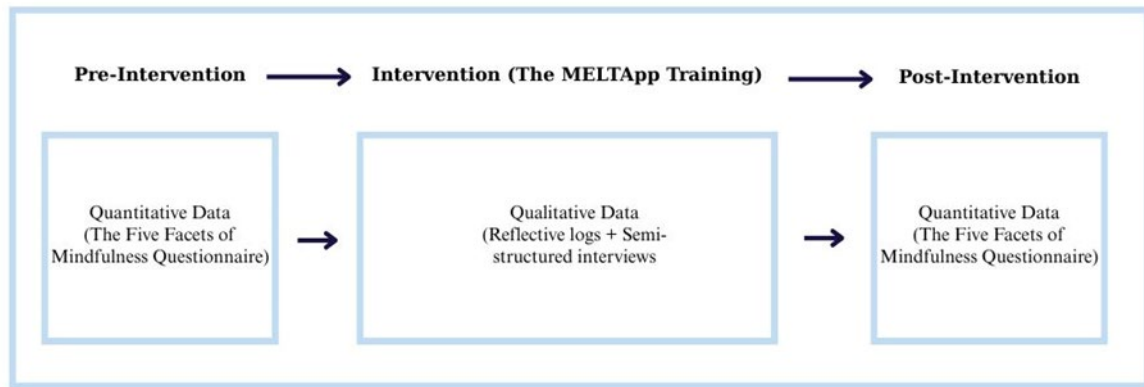


Figure 3.1. *Outline of the current study's research design*

As displayed in Figure 3.1, the current study comprises both quantitative and qualitative data collection methods, relying primarily on the qualitative data to address the research questions. In an embedded mixed-methods research design, a quantitative data collection instrument was embedded into the qualitative research design framework that included qualitative data obtained from reflective logs and semi-structured interviews.

3.2.Setting and Participants

3.2.1.Setting

The study was conducted at the Anadolu University, Türkiye, in the spring term of the 2023-2024 academic year. The study was conducted with pre-service EFL teachers who were enrolled in an elective course entitled *Mindfulness Practices in English Language Teaching* (Anadolu University, n.d.). According to the learning outcomes of the course, they were expected to identify mindfulness and comprehend its practical use in the context of English language instruction. Additionally, participants were required to engage in mindfulness-based breathing and meditation exercises and develop lesson plans that integrate mindfulness into English language teaching. Aligned with the outcomes of the course, the pre-service teachers were encouraged to cultivate mindfulness-based teaching activities and resources for different language skills and areas and engaged in mindfulness practices specifically designed for language teaching. This course was chosen by seniors who were taking the *Teaching Practice* course, which required them to teach actively, ranging from primary

schools to high schools. Considering the aims and features of the course, it appeared as an appropriate setting that adhered to the purposes of the study.

Those in the course *Mindfulness Practices in English Language Teaching* were expected to perform various tasks during and after the lessons. The course syllabus included an introduction to mindfulness and daily mindfulness practices, mindfulness and second language acquisition theories, the scientific background behind mindfulness, the nine attitudes of mindfulness and their implications in English language teaching, guided breathing exercises and meditation, and implementation of mindfulness in language teaching. Throughout the course, they were asked to participate in discussions, practice sample tasks, implement the activities in their teaching practices, and design a lesson plan encompassing the overall entities they had been supplied with throughout the term.

3.2.2. Participants

A total of 19 pre-service EFL teachers participated in the study. The purposive sampling method was employed to select appropriate participants. According to Etikan (2016), the purposive sampling technique, also known as judgment sampling, involves the intentional selection of participants based on their particular attributes. Prior to the study, it was deemed suitable that the *Mindfulness Practices in English Language Teaching* course would be preferred, as the pre-service teachers there were involved in teaching practices and had taken various teaching methodology courses prior to the study. Furthermore, since this course was an elective one, it was assumed that the pre-service teachers in the course might have had a genuine interest in engaging in the course. At the beginning of the study, all of them were informed about the study and its details, and each of them signed consent forms (See Appendix A). Additionally, they were notified of their freedom to withdraw from the study at any moment and that their real names and personal information would not be shared with any third parties.

Prior to the MELTApp Training, a demographic information form was delivered to the participants through Google Forms to obtain background information regarding demographic information, teaching practice experiences, knowledge of mindfulness, and related technological tools (See Appendix B). Among 19 participants who agreed to take part

in the study, 12 were females and 7 were males. Their ages varied from 21 to 24. 15 of them were teaching English at secondary schools, 3 of them were teaching at primary schools, and 1 was teaching at a high school. In terms of the number of students they had in their teaching practice contexts, 13 participants stated that they had more than 25 students; whereas 3 of them had from 15 to 25 students, and 3 had fewer than 15 students. The participants were asked whether they thought their students were motivated toward the English lesson. 7 participants answered, “partly no”, while others responded, “partly yes” (n=6) and “neutral” (n=6). In this respect, most of the participants (n=16) expressed that there was a need for additional activities supplementary to the coursebooks to foster motivation.

As for their experiences with mindfulness, a majority of the participants (n=17) stated that prior to Mindfulness Practices in English Language Teaching, they were not familiar with the concept of mindfulness. The participants were asked whether they were engaged in mindfulness-related activities in their daily routine, and 10 of them answered, “No”, while 9 answered, “Yes”. These practices, according to their responses, included breathing exercises, meditation practices, and concentration exercises. However, regarding the use of technology-supported Mindfulness-Enhanced Language Teaching in teaching and learning contexts, all participants reported that they lacked information. Moreover, none of the participants had used a mobile application concerning mindfulness previously. Based on the participants’ responses and the need for a mobile tool to integrate mindfulness into English teacher education, the MELTApp Training was designed for the purposes of the study, including elements such as the scientific background of mindfulness, breathing exercises, meditation practices, the nine attitudes of mindfulness, and MELT practices.

3.3.Design and Development of MELTApp

Materials aiming at integrating mindfulness into learning/teaching contexts are scarce, and there is a need to offer systematic guidance to teachers to effectively integrate mindfulness in EFL and ESL teaching (Kuru Gönen, 2022). The original materials for the integration of MELT were designed by Kuru Gönen (2022, 2024) and are available via the official MELT website (www.mindfulnessinelt.com). On this web-based platform, users have access to information about mindfulness, attitudes about mindfulness and how these

attitudes are implemented into L2 contexts, tips and strategies for effective integration of MELT, blog posts, mindfulness activities designed for young learners and teenagers, and various MELT lesson plans that can be applied in L2 classrooms. This web-based platform was compatible with interactive whiteboards and used in classrooms worldwide. Even though MELT materials and activities are accessible via a web-based platform, there appeared to be an obvious need to use all these on a mobile platform that would make access to MELT in a more practical fashion, regardless of time and place. What is more, following the fast advancements in novel technologies and their effective integration into the educational settings in the digital era, the design and incorporation of a mobile tool that provides opportunities to teachers and learners to apply the ideas of mindfulness for enhancing L2 learning is reported fundamental by various teachers (Kuru Gönen & Sarıkaya, 2023). Kuru Gönen and Sarıkaya (2023) stated that teachers who were enrolled in MELT training programs continuously highlighted the need for a mobile application that they could resort to whenever they wanted, that could help to cater to the well-being of teachers and students with the practicality and accessibility of a mobile tool.

Based on the growing interest in a mobile tool, the development of the mobile application presented here transferred MELT materials and ideas to a mobile platform, following the need for ubiquitous access to these materials by the teachers and learners via a free mobile tool. Considering these, the primary objectives of MELTApp are to:

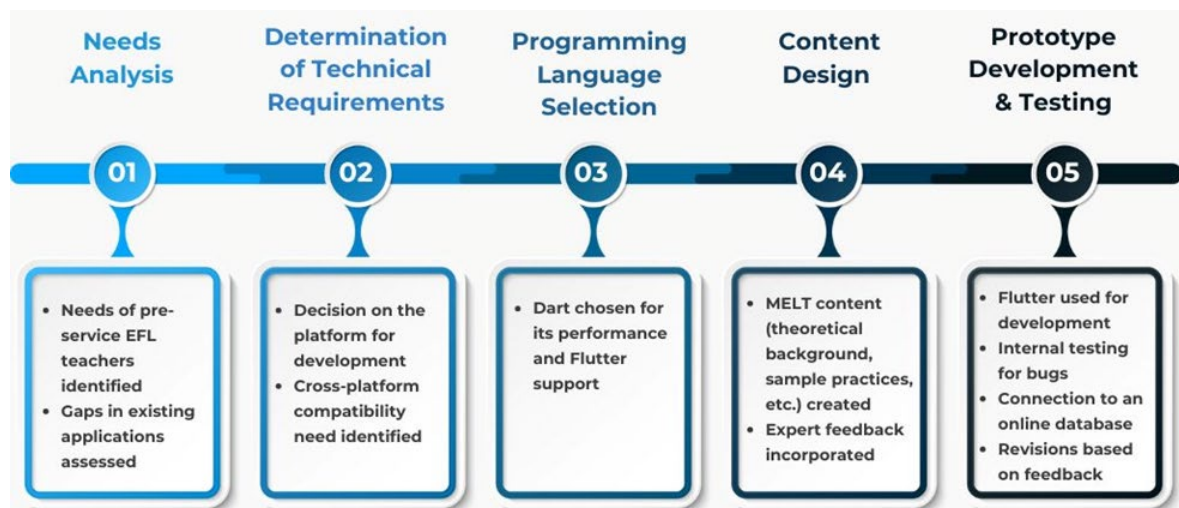
- Present the concept of MELT and its various components with free access to teachers and learners via a mobile platform.
- Present accessible mindfulness-enhanced teaching materials that can be integrated into L2 learning/teaching settings in a ubiquitous fashion.
- Explain the scientific background of mindfulness with a user-friendly interface of a digital tool.
- Provide breathing exercises and meditative practices in digital formats that can be used via mobile phones.
- Offer easy access to practical tips and strategies for effective integration of MELT via the simple interface of a mobile application.

- Revise and adapt MELT materials to a mobile platform for free access to teachers and learners by designing simple and effective digital widgets.
- Offer both individualized and communal usage based on the sharing of information via digital widgets on a mobile application.
- Supply motivational elements for teachers and learners via mobile tools.

What is more, from a broader perspective, MELTApp aims to facilitate ongoing professional development for language teachers and have adaptability for different contexts through a user-friendly interface. Following these aims, a digital mobile platform was designed and developed that would support the use and integration of novel methodologies like MELT.

Design Procedures of MELTApp

The design and development of MELTApp adhered to a systematic, multi-phase framework to ensure alignment with the pedagogical objectives of MELT and to fulfill the real-world demands of its users. The development had five primary stages: (1) Needs Analysis and Literature Review, (2) Technical Requirements Determination, (3) Programming Language Selection, (4) Content Design and Material Integration, and (5) Prototype Development and Testing. Each stage was meticulously planned and executed with both instructional and technical considerations. Figure 3.2. outlines the sequential phases involved in the design and development of MELTApp, and presents both the primary stages



and any subordinate processes where particular design choices or modifications occurred:

Figure 3.2. *The development process of MELTApp*

Among the prominent programming languages, Java, Kotlin, and Dart, Dart has outstanding Central Processing Unit (CPU) performance, and this makes it the first in three of the eight testing and matching Java in terms of computational efficiency and excels in memory utilization; hence, it has superior language for memory efficiency when compared to Java (Espinoza Gonzalez, 2019). Thus, Dart was chosen as the programming language of MELTApp. Dart language is used in the Flutter Platform because its support for just-in-time (JIT) and ahead-of-time (AOT) compilation improves development productivity and speed, while its object-oriented nature and lack of a language for markup make it simple to construct clear user experiences and quickly adjust (Windmill, 2020). Besides, with Java, one can build only for Android devices and with Kotlin, for iOS devices; however, Flutter is a cross-platform development type that lets the programmer develop a mobile application for both IOS and Android concurrently (Kurale & Bala, 2021), making it ideal as it eliminates the need for learning two different languages.

Flutter software was downloaded from its official website and set up according to the instructions. As additional development tools, Xcode, to use a simulator that displays how the application would appear on a real phone, and CocoaPods, to enhance its capabilities, were installed. Furthermore, Visual Studio Code was installed because it lets users easily edit the code and detect problems in Flutter. To be able to initiate and conduct the coding, the researcher searched for tutorials on YouTube, along with enrolling in a Flutter training program offered on Udemy (an online learning platform). Following the constant trials during and after the sessions, a new project for MELTApp was generated, and the coding procedure started. The following figure displays the sample coding procedure of MELTApp.

```

lib > home.dart > _HomeState > build
61 class _HomeState extends State<Home> {
70   Future<void> getUser() async {
79     setState(() {});
80     ScaffoldMessenger.of(context).showSnackBar(
81       SnackBar(
82         content: Text("An error occurred $e"),
83       ), // SnackBar
84     );
85   }
86 }
87
88 final List<String> squareTitles = [
89   "Mindfulness and Our Bodies",
90   "Breathing Exercises",
91   "Meditation Oasis",
92   "Attitudes of Mindfulness",
93   "MELT Practices",
94   "MELT Tips",
95   "Gratitude Zone",
96   "MELT Community",
97   "MELTivation Corner",
98   "Mindful Affirmations",
99 ];
100
101 final _formKey = GlobalKey<FormState>();
102 String _email = '';
103 String _password = '';
104
105 void _handleDeleteFields() async {
106   final isValid = _formKey.currentState!.validate();
107   if (isValid) {

```

Figure 3.3. Sample coding for MELTApp

3.3.1.Features and Functionalities of MELTApp

Due to the various objectives of MELTApp, different widgets, such as “editable text or number fields, sliders, scrollbars, buttons, knobs, dials, meters, and menus” (Johnson, 1992, p.273) needed to be included in it. The following section presents the developmental procedures of the various components of MELTApp.

The Home Screen

The home screen, or the welcome page, is the first page that users would encounter when they tap on MELTApp. The main intention was to expand the content on the website (mindfulnessinelt.com); thus, the main sections on the website were decided to be displayed on the home screen in the form of squircles, with several additional widgets. The sections to be included were “Mindfulness and Our Bodies”, “Breathing Exercises”, “Meditation Oasis”, “Attitudes of Mindfulness”, “MELT Practices”, “MELT Tips”, “Gratitude Zone”, “MELT Community”, “MELTivation Corner”, and “Mindful Affirmations”. The latter four were the extra points that were not on the website.

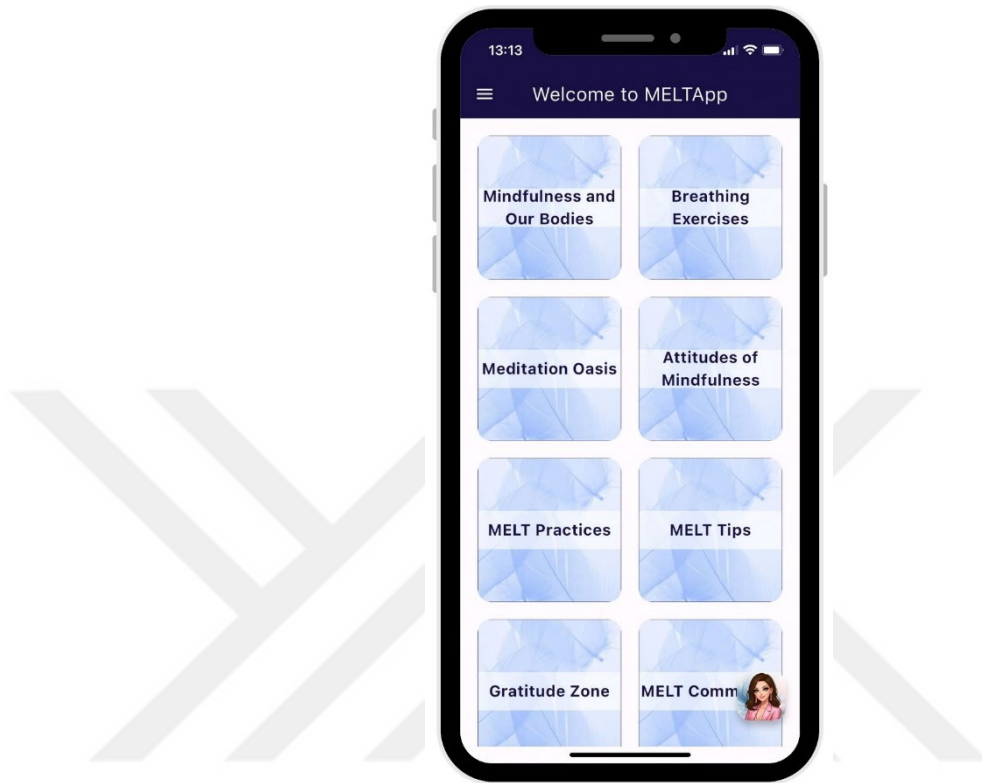


Figure 3.4. *The welcome screen of MELTApp*

As can be seen, the primary components of MELT are on the spot for easy access to the different parts. In the figure, the welcome page is present. This page allows the users to see the main widgets of MELTApp, along with a “Menu” widget (See Appendix C) on the top left, which encompasses crucial information regarding MELT, MELT, the MELT Website, social media links, copyright, and so forth. Additionally, on this screen, the users are provided with an assistant that offers navigation to what the users wish to view.

Mindfulness and Our Bodies

In this segment, the effects of mindfulness on the human body are briefly explained. The segment includes the sub-segments of “The Central Nervous System”, “Brain and its Components”, “The Peripheral Nervous System”, “The Endocrine System”, and “The Respiratory System”. In each sub-segment, how mindfulness practices affect the related body part is briefly explained. To be able to execute what is mentioned, the researcher designed

different backgrounds for each segment and subsegment. Then, she placed these background images on different coding documents in Flutter. The appbar, buttons, and necessary widgets were coded upon these backgrounds (See Appendix D for the coding system). The figure below demonstrates the screen when one taps on “Mindfulness and Our Bodies”.

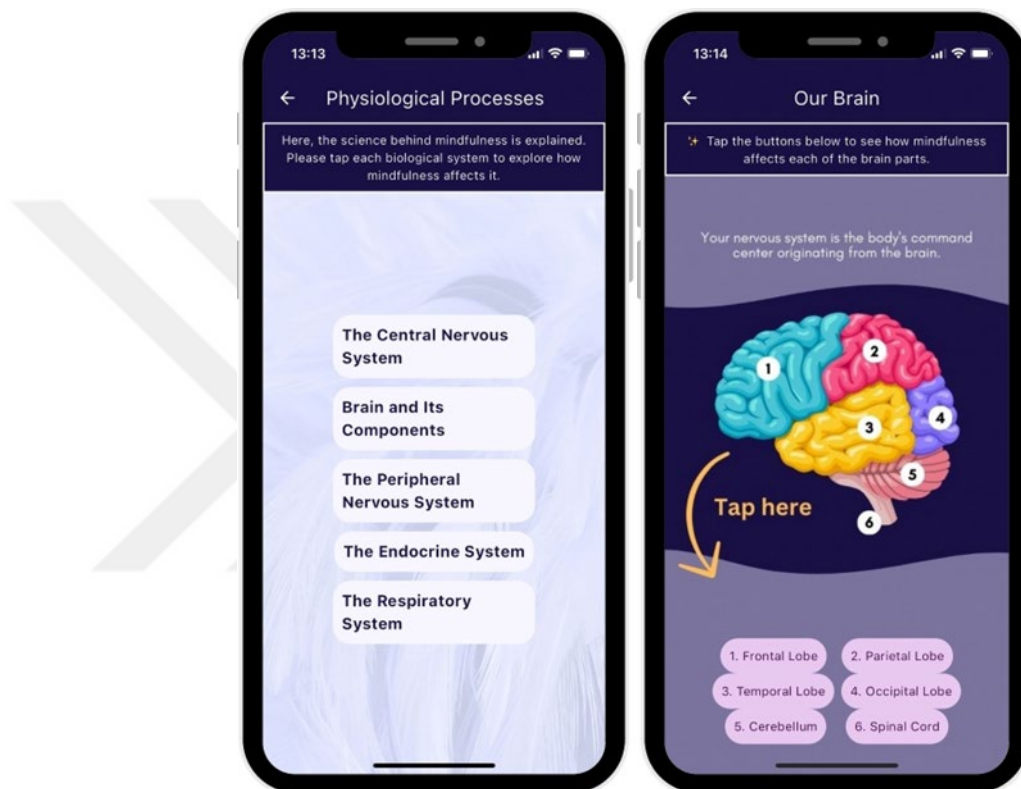


Figure 3.5. *Physiological processes*

As seen in the figure, under the appbar for each widget, as per the expert opinion, the rationale of the segment is highlighted. For example, when one clicks on “Brain and Its Components”, he or she navigates to the related page with an explanation and an illustration. Here, on this screen, it was advised by the expert in pedagogy that the users should see where to tap. Therefore, for the brain lobe and components to be tapped, an arrow was directed from the brain image to the buttons. When one taps on the buttons, he or she can read the effects of mindfulness on the related brain component. The effects of mindfulness practices on other physiological processes are presented in the same format (See Appendix C). Overall, the “Mindfulness and Our Bodies” widget was aimed at providing language teachers with crucial

background information on how mindfulness practices affect the physiological processes in the human body. To this end, several visuals, along with brief guidance at the top of the screen, and separate buttons for different body parts were coded.

Breathing Exercises

Breathing exercises, considered highly crucial in mindfulness practices, are presented as one of the main segments of MELTApp. In the “Breathing Exercises”, the purpose was to supply language teachers with various breathing exercises that they can use both for themselves and with their students, in animated and card forms designed by Kuru Gönen (2022). What is more, breathing exercises were categorized as “Simple Breathing Exercises”, “Breathing Exercises with Natural Shapes”, and “Breathing Exercises with Geometric Shapes” (Kuru Gönen, 2022), and to enhance user-friendliness, these categories were presented in three different buttons on MELTApp with the guidance below the appbar:

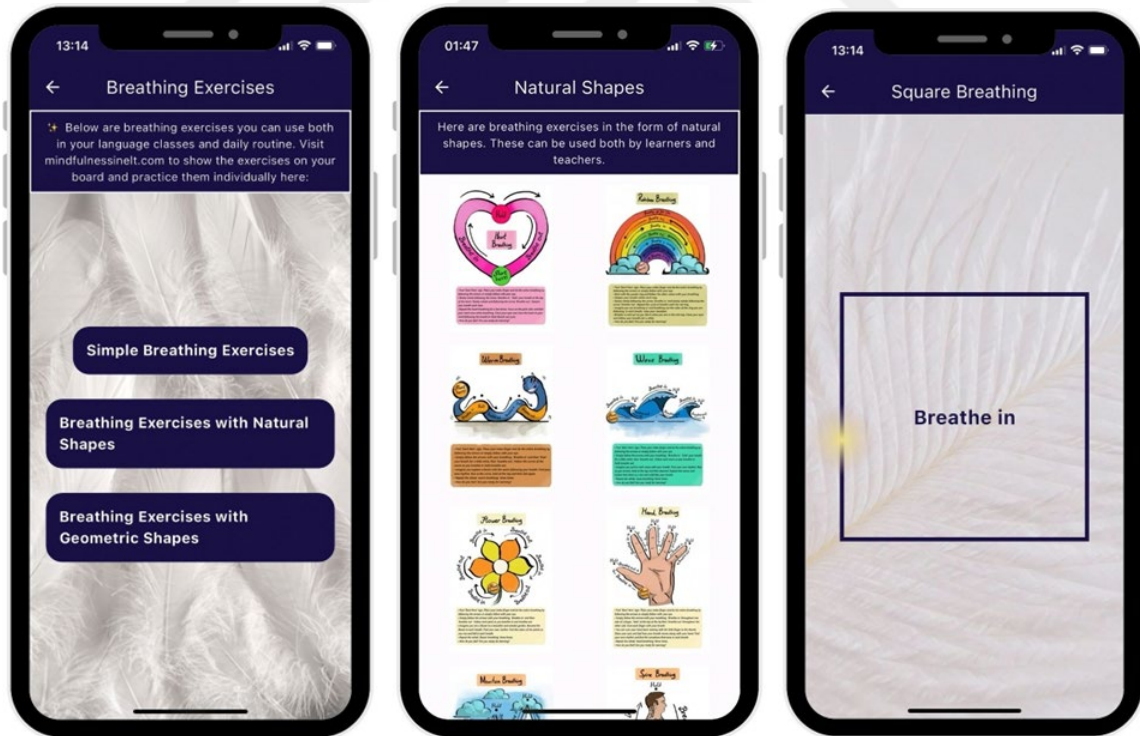


Figure 3.6. *Breathing exercises*

On the page shown, three different options, along with the guidance at the top, are coded meticulously. When the “Simple Breathing Exercises” is chosen, the users view

another page that supplies three different simple breathing exercises. Here, it is aimed that no intervention should be done to one's breathing pattern; only the observation of breathing and the body is intended (See Appendix C). With regard to “Breathing Exercises with Natural Shapes”, a collection of cards is presented, and when they are tapped, they fill the screen. Together with the guidance, various cards are presented, and they are all shown as a pop-up screen, which also applies to cards on breathing exercises with geometric shapes. One additional feature of breathing exercises with geometric shapes is the option of practicing the exercises with an animated light, named the MELT Light, that users may track and synchronize their breathing patterns with.

Meditation Oasis

In addition to the widgets of “Mindfulness and Our Bodies” and “Breathing Exercises”, another widget that should be integrated into MELTApp was meditation cards, which was named “Meditation Oasis” in MELTApp. In this widget, it is aimed to offer various meditation cards on different topics, such as music, relaxation, bathing, and so forth, designed by Kuru Gönen (2022):



Figure 3.7. Meditation cards on MELTApp

In this widget, similar to breathing exercises with cards, the cards were coded in an album format in which they are listed in two columns, and one can scroll down to view the remainder. By tapping on the cards, users are able to see the cards on a pop-up screen and zoom in and out for a clearer view of the instructions.

Attitudes of Mindfulness

The widget “Attitudes of Mindfulness” is the fourth widget following the “Meditation Oasis”. In this widget, the purpose was not only to present the nine attitudes of mindfulness in language teaching, but also to display nine different teaching situations with two distinct options, each having a unique consequence. In other words, for the users to internalize the nine attitudes of mindfulness, nine teaching scenarios with two options were provided. Below displays the “Attitudes of Mindfulness” widget of MELTApp:



Figure 3.8. *The nine attitudes of mindfulness on MELTApp*

As shown in Figure 3.8., the nine attitudes of mindfulness, along with the guidance at the top, are presented in squircles. When one of them is tapped, the users are welcomed with an interactive story. In the interactive story shown, the users are provided with a difficult teaching situation, and at the end of the story, they are asked which path to follow. They are able to embrace or reject a particular attitude, and they observe the implications that arise upon selecting that particular option.

MELT Practices

After the presentation of the fundamentals of mindfulness-enhanced language teaching on MELTApp, the next widget is “MELT Practices” which offers mindfulness-enhanced language teaching activities for both young learners and adults. All of these activities were published at mindfulnessinelt.com, the official website of MELT. Below is the appearance of the practices:

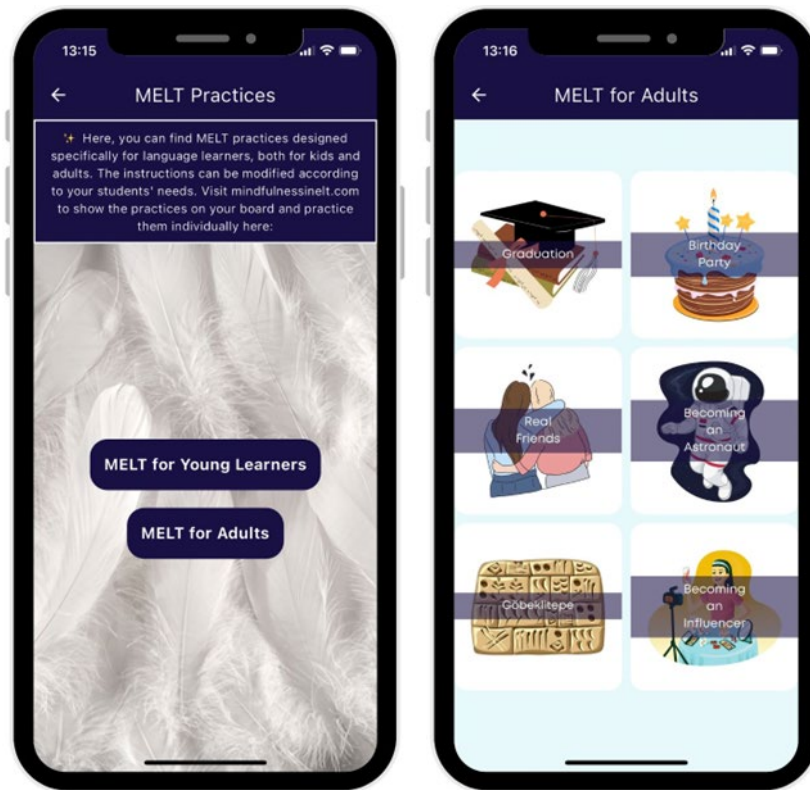


Figure 3.9. *MELT practices in MELTApp*

On this page, two different options are offered for the teachers. For instance, when a teacher chooses “MELT for Adults”, a widget pops up that exhibits multiple MELT practices in the form of cards, each representing a different theme. Upon selecting a card, a pop-up screen appears, containing the instructions for the practice. The cards here, similar to the previous cards, can be magnified and reduced in size.

MELT Tips

MELT Tips refer to a collection of recommendations for language teachers to smoothly integrate mindfulness into their classes. In this widget, it was aimed to briefly introduce these tips with pop-up screens:

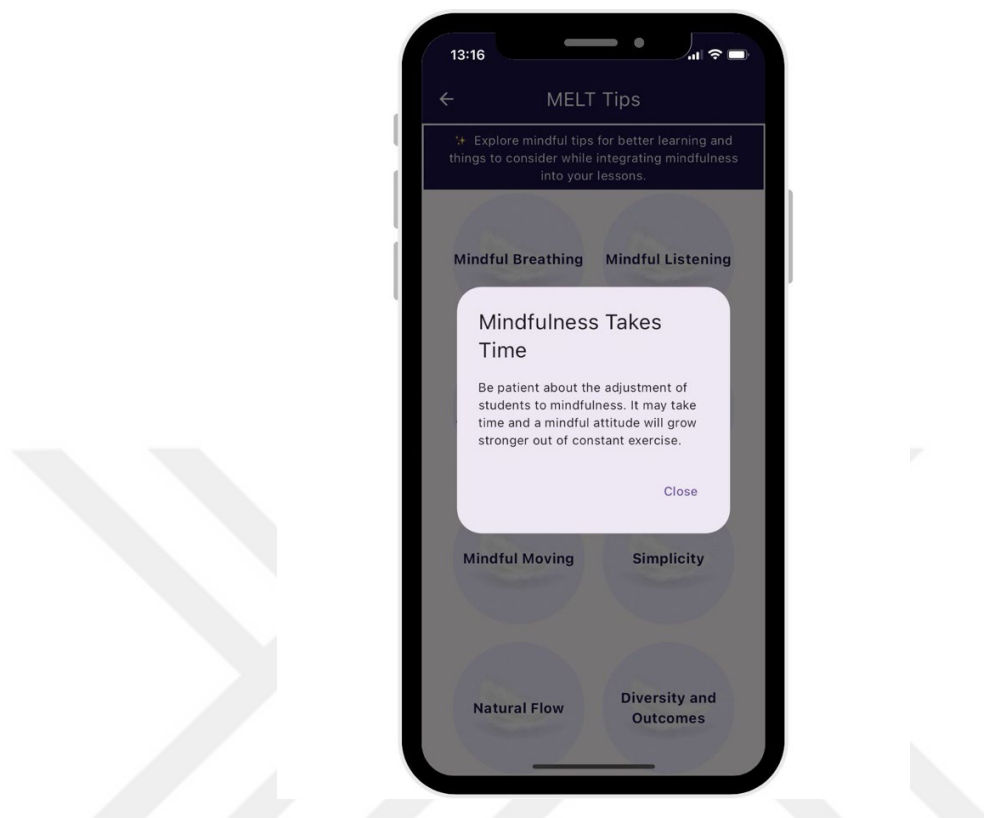


Figure 3.10. *MELT tips*

The MELT Tips, shown in the figure above, are a series of pop-up displays intended to assist language teachers in incorporating mindfulness into their classrooms. Each tip is intentionally brief and practical for the teachers to easily implement across various educational settings. These suggestions highlight that mindfulness is not limited to discrete breathing or meditation practices but is a continuous disposition that may be included in every classroom experience. They provide recommendations for integrating mindfulness via curriculum-aligned activities, sensory experiences, guided imagery, and physical exercise. Language teachers are urged to embrace their learners' unique needs, modify linguistic input according to competence levels, and elucidate the advantages and scientific principles of mindfulness in an age-appropriate fashion. Overall, the MELT Tips are designed to assist language teachers in establishing emotionally supportive, academically enriching, and mindful learning environments.

Gratitude Zone and the MELT Community

“Gratitude Zone” is a widget that offers a private journal for teachers to record what they are grateful for. This widget was coded in a way that ensures privacy. Here, a blank page, with a “+” button at the bottom right corner of the screen is seen. When the button is tapped, a pop-up screen with a text bar appears. As a guiding instruction, on the text bar, it is asked, “What are you grateful for?”. They have the option to either cancel or save the note. Upon saving the note, it is shown on the screen as a sticky note with a gratitude icon. The users can see the options to modify or delete their notes by tapping on them again, which are similar to the features of the MELT community shown in Figure 3.11:

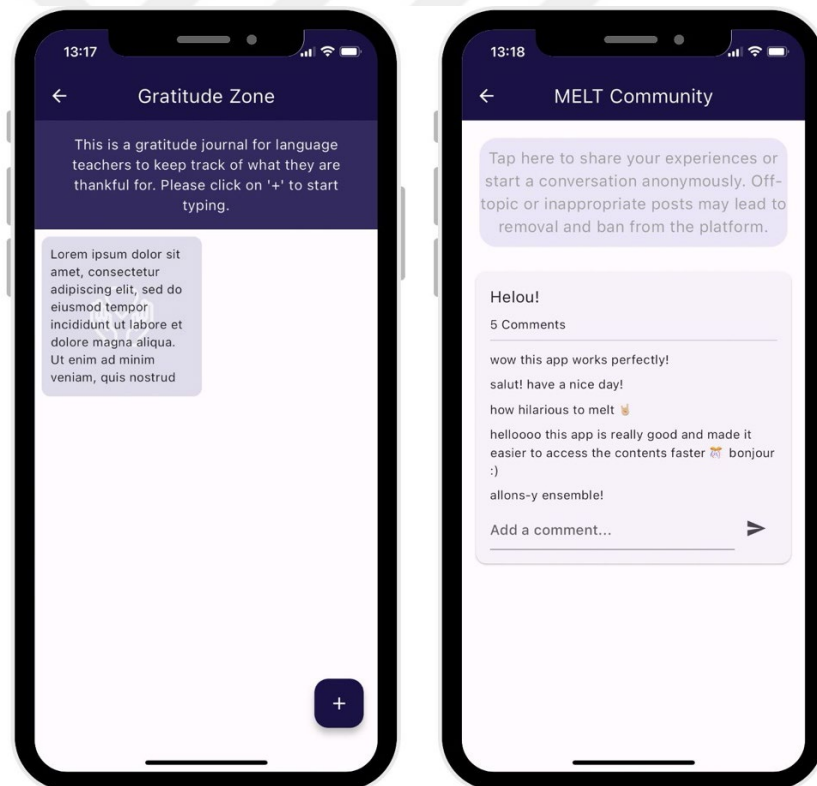


Figure 3.11. *Gratitude zone and the MELT community*

Figure 3.11. demonstrates that the Gratitude Zone feature in MELTApp offers users an effortless and engaging method for capturing their moments of gratitude. In the initial design of this widget, however, the sticky notes on the screen would not be recorded if the user went to the previous page or closed MELTApp. This occurred due to the absence of a

connection between the software and an online database that would store user data. As a result, the widget, along with the upcoming page, MELT Community, was later linked to Firebase, an online database offered by Google. Similarly, the “MELT Community” page is another widget that necessitates a connection to an online database. Unlike the "Gratitude Corner," this particular feature of MELTApp was designed to function as a platform where users can share posts comment on other teachers’ content.

MELTivation Corner and MELT Affirmations

In “MELTivation Corner”, the purpose was to display motivational quotes for teachers. The word MELTivation, in this aspect, is a blend word that is composed of “MELT” and “motivation”. Below is the appearance of the widget:



Figure 3.12. *MELTivation corner*

The figure above demonstrates that in the MELTivation Corner, the users are able to see a collection of motivational quotes and images, which they can tap to enlarge. What is

more, in the widget “MELT Affirmations”, it was aimed to provide various affirmations both for language teachers and learners. In the main screen of this widget, two options, one for teachers and one for learners are presented. Below is a sample affirmation for language teachers:

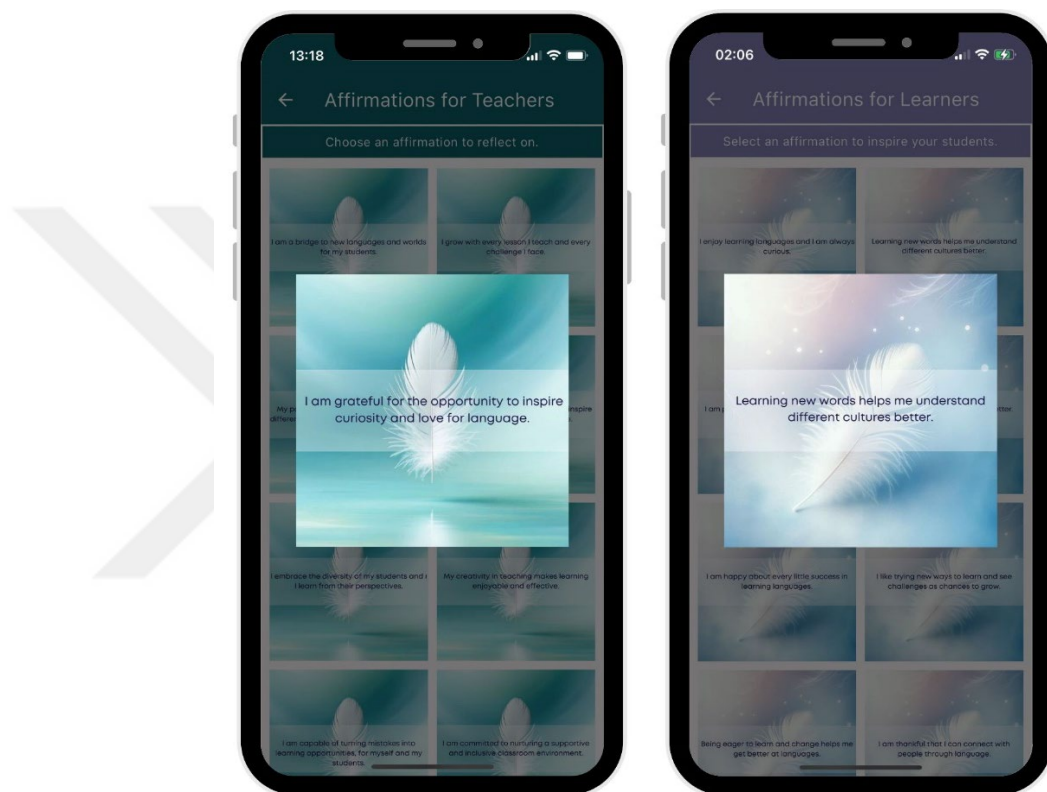
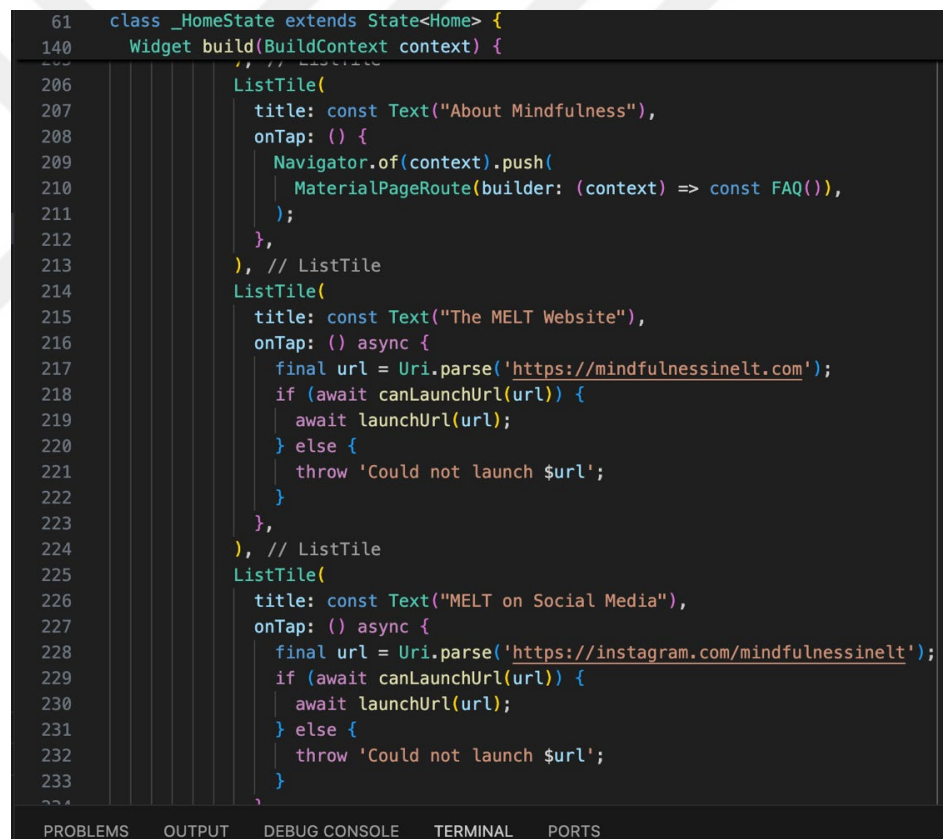


Figure 3.13. *MELT affirmations*

As can be seen, the content in the affirmations widget is categorized into two main components. A customized collection of affirmations is included in each category, which is intended to cater to the particular needs and experiences of both language teachers or learners. Teachers are given affirmations that underscore their resilience, strengths, and influence on their students, whereas learners are provided with affirmations that emphasize the development of a growth mindset, persistence, and confidence, which facilitates the language learning process.

The Menu

The Menu is an essential part of the mobile applications because what is not blatantly displayed on the home screen can be easily shown on it. In order to write the code for it, the researcher initiated a coding part on the appbar through calling the “const DrawerHeader” widget which would create a header section within the drawer. Subsequently, additional drawer items were incorporated by utilizing ListTile widgets to populate the drawer with interactive components such as navigation to the Home Page and the definitions of MELT and MELL, as displayed in the figure below.



```
61 class _HomeState extends State<Home> {
140   Widget build(BuildContext context) {
206     ListTile(
207       title: const Text("About Mindfulness"),
208       onTap: () {
209         Navigator.of(context).push(
210           MaterialPageRoute(builder: (context) => const FAQ()),
211         );
212       },
213     ), // ListTile
214     ListTile(
215       title: const Text("The MELT Website"),
216       onTap: () async {
217         final url = Uri.parse('https://mindfulnessinelt.com');
218         if (await canLaunchUrl(url)) {
219           await launchUrl(url);
220         } else {
221           throw 'Could not launch $url';
222         }
223       },
224     ), // ListTile
225     ListTile(
226       title: const Text("MELT on Social Media"),
227       onTap: () async {
228         final url = Uri.parse('https://instagram.com/mindfulnessinelt');
229         if (await canLaunchUrl(url)) {
230           await launchUrl(url);
231         } else {
232           throw 'Could not launch $url';
233         }
234       },
235     ), // ListTile
  }
```

Figure 3.14. Codes for the menu section

The figure above shows how the elements of the Menu are coded with the ListTile widgets. By writing “onTap: () Navigator.of(context).push(MaterialPageRoute(builder: (context) => NextPage())); }”, the coder decides on the action to be taken when the user taps

on the titles. For each title, a different page was coded and named accordingly, and the names were given as the context to be seen for each title on the menu, presented in the table below:

Table 3.1. *Functions of the titles on the Menu bar of MELTApp*

Title	Function
Home Page	Navigates to Home Page
MELT	Displays the definition of Mindfulness-Enhanced Language Teaching
MELL	Displays the definition of Mindfulness-Enhanced Language Learning
The MELT Website	Navigates to mindfulnessinelt.com
MELT on Social Media	Navigates to the Instagram account of MELT
The MELT Team	Displays the developers of MELTApp
Copyright	Displays the intellectual property rights
Sign out	Guides the users to sign out from their accounts
Delete Account	Guides the users to delete their accounts

As demonstrated in the table above, each unit of the menu bar holds a unique function both for a more effective understanding of MELT and a user-friendly experience with MELTApp.

The MELT Assistant

Although the main components are clearly shown on the home screen and the menu sections, the subsections should also be easily accessible for the users; thus, an assistant was coded. To code this assistant, first, the widget “floatingActionButton”, along with “AnimatedAssistantDialog” was called to form an interactive button that opens a pop-up screen with the image of the assistant, along with a text space to lead to the intended pages. An avatar was designed to be shown as the assistant and added as an asset inside the code of the assistant. In order to have coherence within the mobile application, the assistant was named “The MELT Assistant”. For the users to access the target pages, possible keywords related to those pages were listed. Below is the finalized version of the MELT Assistant:

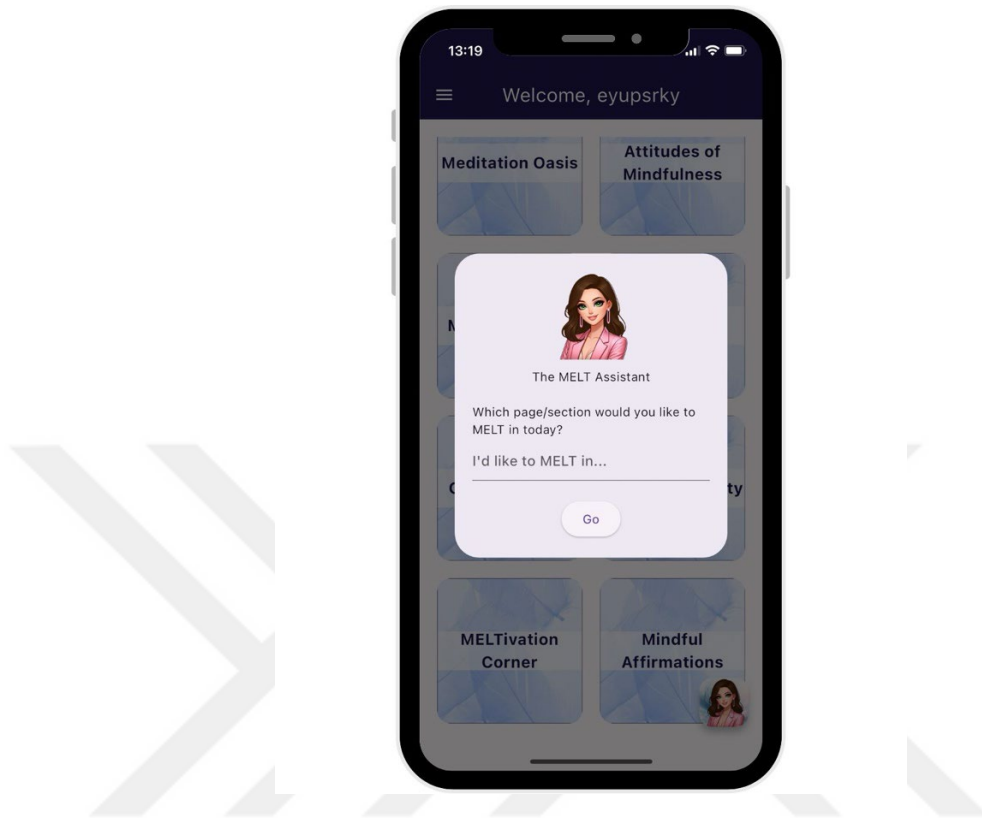


Figure 3.15. *The MELT assistant*

As seen in Figure 3.15., under the avatar, the name of the assistant is written to enlighten the users about the widget and for further explanation, it was asked, “Which page/section would you like to MELT in today?”. For the destination, in gray, it is written, “I’d like to MELT in...”. When the users tap on this text, they are able to type down where they want to navigate. The figure above shows that when one taps on the text “I’d like to MELT in...”, a keyboard pops up and by typing in the keywords and pressing “Go”, they can reach their destination.

Connection of MELTApp to an Online Database

As aforementioned, the nature of MELTApp necessitated the connection of the application to an online database that would store the information of the users. Hence, Firebase, “the backend of a system that is used as a database for storing data” (Khawas & Shah, 2018, p. 49) was chosen as embedding Firebase functions into a mobile application is straightforward and requires only a couple of lines of coding (Khawas & Shah, 2018). The

widgets "Gratitude Zone" and "MELT Community" were the ones that required to be connected to a database and was intended to have a membership feature, all of which necessitated the database connection. To achieve these objectives, the procedures that were undertaken are illustrated in the figure below:

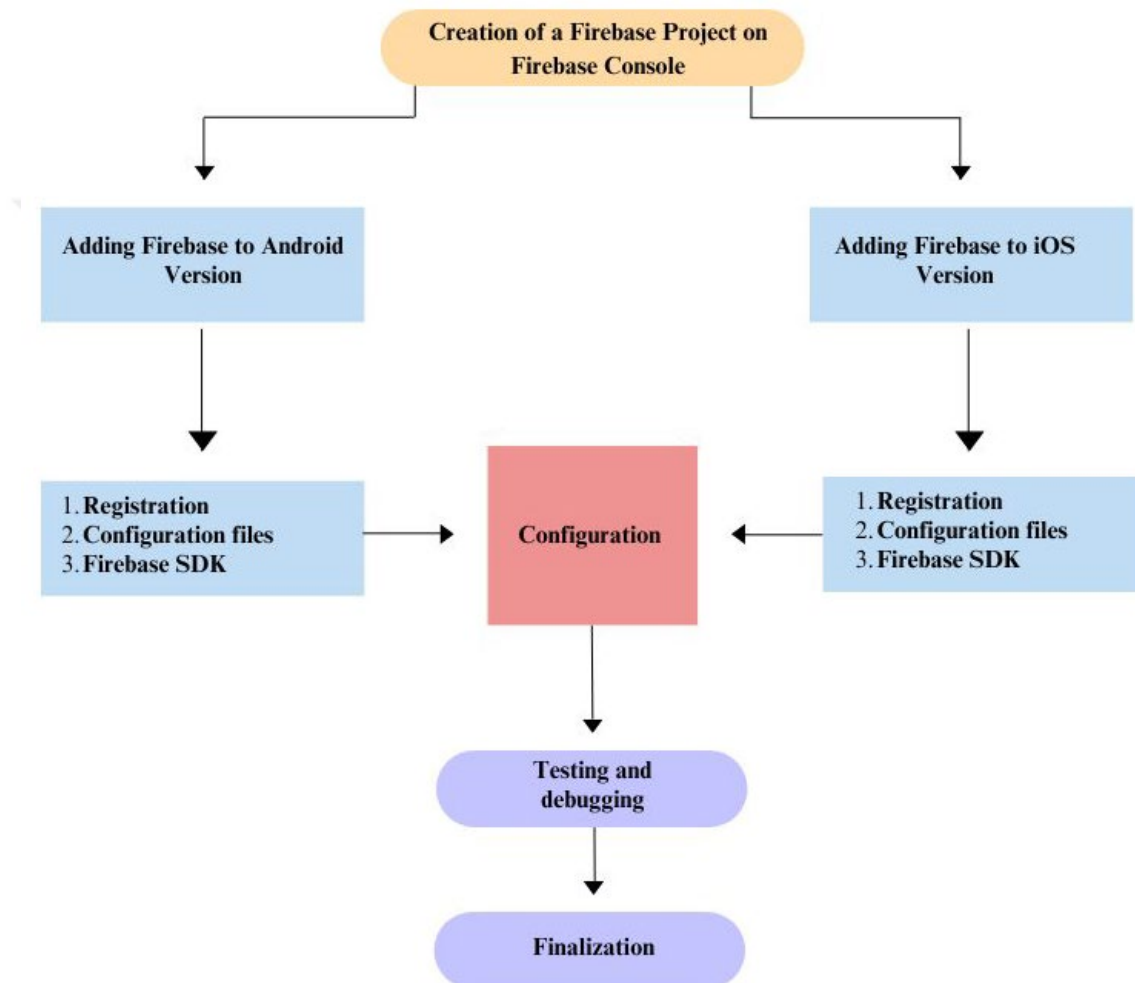


Figure 3.16. *Steps of the firebase integration*

As depicted in the figure above, firstly, a project on Firebase Console was created. The files and codes to be integrated into the application are provided by Firebase afterward. Once these were provided, the researcher added the components to the proper locations and tested the widgets through the simulator. With necessary revisions, the data storage processes were completed, which was then followed by the coding of the sign-up and sign-in pages.

On the sign-up page, the coding was written in a form that would necessitate an e-mail address, a password longer than seven characters, and a username. When the users click on signup, they are automatically led to MELTApp, and their usernames are displayed on the top of the screen. Through the “Sign Out” button on the menu, the users are allowed to log out, and then log in again through “Sign in”. The main screen that welcomes the users and the sign-in page is shown below:



Figure 3.17. *The main screens of MELTApp*

The screens seen in Figure 3.17. are the first pages of MELTApp when one installs it. The "Continue without signing in" option was not originally included in the application; however, Apple stated that it is required for mobile applications to offer this option. Following these configurations, MELTApp was sent to a Flutter expert for feedback.

3.3.2. Expert Feedback and Security Measures

Upon completing all the requisite modifications, the researcher proceeded to post an announcement on the platform known as Stack Overflow, with the intention of soliciting

comments from a proficient individual in the domain of MELTApp. The purposes of the application were explained on the platform and an expert on app development from Türkiye agreed to provide feedback on MELTApp. The expert stated that MELTApp has a user-friendly interface, and its coding system is quite satisfactory; therefore, it was agreed that its icons and the privacy policy could be prepared, and the application could be sent to Google Console and Apple for review.

To provide a secure digital environment, certain words were categorized as "banned." A coding system was implemented for Firebase Console and MELTApp to automatically ban users who utilize any of these words on the platform. This system employs live monitoring of user activity and content submissions, whereupon the detection of any prohibited phrases prompts an automated response to limit the user's access. By incorporating the robust database and cloud services of Firebase, the system instantaneously identifies and addresses any instances of incorrect or harmful language, thereby upholding a polite and secure environment for all users. A privacy policy (See Appendix E) was established to strengthen user trust by providing clear information on the information obtained, how it is used, and the parties it may be shared with. Furthermore, precautions made to protect user data and specifics about user rights over their information have been released in the policy.

3.3.3. Pilot Testing and Finalization

To be able to publish a mobile application on the Play Store for Android users, Google has several regulations named internal testing, closed testing, and open testing (Google, n.d.), all of which should be executed for the applications to be shown on the Play Store. For these tests, a minimum of 20 Android users who would continuously use the application for 14 days are needed; therefore, necessary permissions were taken from the Department of Foreign Languages Education in two state universities in Türkiye to involve the pre-service EFL teachers who use Android in the pilot testing. These testing procedures are internal testing, closed testing, and open testing. For each testing procedure, different individuals were required to install the app. Thus, a total of 115 testers downloaded the app and used it for 14 days, which lasted 52 days in total.

The researcher informed the participants of the purposes, usage, and details of MELTApp and identified the voluntary users for pilot testing. For those who agreed to take part in the testing of MELTApp, and for swift communication, a WhatsApp group was formed in which they could easily share their opinions for 14 days. All of the participants in general agreed that the mobile application is fruitful and highly user-friendly, while only one student asserted that “MELT Community” widget should be enhanced in terms of security and provided a list containing more of the undesired words. Upon collecting the views of the volunteers, MELTApp was once again revised. Lastly, the application icon was prepared through Canva:



Figure 3.18. *The app icon*

Above is the icon that would be seen on the users' home screens, which was included in the folder of the MELTApp codes. The prepared folder was thereafter dispatched to the Play Store and Apple for release.

To be able to release MELTApp on both the Play Store and App Store, several procedures were conducted in a stepwise fashion. First, necessary accounts were created on these platforms and the purpose, audience, and content of the application were introduced. For the Play Store, the ‘flutter build appbundle –release’ commands were typed in the Flutter terminal. This command generated a file to be uploaded to the required field on the Play Store. Then, a test link was created for the registered testers to download MELTApp. Due to the estimated duration of 2 months required for all users to test the application, the testing phase would not conclude until the data collection phase. Consequently, an APK file was

produced, and a link was provided to the study participants for convenient application download. In Xcode, MELTApp was configured to meet all iOS-specific requirements. Flutter's build commands, `flutter build ios --release`, were subsequently employed to construct the release build. Subsequently, the application was archived in Xcode and uploaded to App Store Connect by utilizing the built-in services of Xcode. Next, the application was submitted for Apple's review. Upon receiving approval, the application was published and made accessible for installation on the App Store.

3.4. The MELTApp Training

To develop systematic and comprehensive training for MELTApp, the researcher and the thesis advisor of the study who is also the instructor of the *Mindfulness Practices in English Language Teaching* course, thoroughly reviewed the course syllabus at the beginning of the semester. Considering the time needed for the release of the application, it was determined that the topics covered in the application would be taught using MELTApp during the final 5 weeks of the semester.

One of the reasons for designing the MELTApp training was that MELTApp is the first mobile application, available for both iOS and Android users, designed exclusively for language teachers who desire to integrate mindfulness into their teaching. Moreover, apart from the initial pilot testing, the app had not yet been implemented in language classes in a systematic manner. Therefore, it was considered beneficial to offer structured guidance to users to support effective and pedagogically meaningful use of the app. Thus, covering various aspects of MELT, a training was designed to integrate MELTApp in L2 teaching and learning contexts.

Taking into account that the integration of mindfulness into language teaching requires additional resources and more support for teacher competence in the integration (Moghadam et al., 2020; Önem, 2015; Sheikhzadeh & Khatami, 2017; Walman & Carmel, 2019), The MELTApp training has been designed to offer a comprehensive support system, efficient resources presented in a user-friendly platform, and structured instruction to guarantee the successful implementation and maximize the benefits of mindfulness practices

in language teaching using MELTApp. As a result, the MELTApp Training was meticulously designed to provide pre-service EFL teachers with the essential support and guidance to effectively integrate mindfulness into their teaching practices using MELTApp.

Drawing upon the current research regarding mindfulness in language teaching (Azizi & Kralik, 2020; Charoensukmongkol, 2019; Fallah, 2016; Kuru Gönen, 2022, 2024; Moghadam et al., 2021; Yuan et al., 2020), the MELTApp Training, a face-to-face training program tailored exclusively for the pre-service EFL teachers, was prepared and delivered by the researcher of the study under the close supervision of the thesis advisor. A total of 19 pre-service EFL teachers participated in the program. During and after each session, participants actively engaged with MELTApp to deepen their understanding of the concepts and practices. To reinforce their familiarity with the app, a follow-up task requiring interaction with a specific component of MELTApp was assigned at the end of each session. Participants were asked to complete the task and upload it to a designated Google Drive folder. Upon submission, they were also required to complete a reflective log, which they were expected to fill out to document their experiences after completing and uploading their task. Table 3.2. illustrates the research layout and steps for the training.

Table 3.2. *Steps of the MELTApp Training*

Week	MELTApp Training Procedure
Week 1	• Training on “Mindfulness and Our Bodies” via MELTApp • Introduction to the scientific background on the effects of mindfulness. • Changes in the physiological processes through mindfulness • Mindfulness and the nervous system • Mindfulness and the hormones • How to view mindfulness and the physiological processes via MELTApp.

Table 3.3. (Continued) Steps of the MELTApp Training

Week 2	• Training on “Breathing Exercises” via MELTApp. • Introduction to effective breathing • Effects of breathing on the mind and body • Simple breathing exercises • Breathing exercise with natural and geometric shapes • How to use animated breathing widgets on MELTApp • Integrating various types of breathing exercises via MELTApp
Week 3	• Training on “Meditation Practices” via MELTApp. • Introduction to meditation • Meditation cards • How to use the “Meditation Oasis” widget on MELTApp. • Integrating various types of meditation cards via MELTApp
Week 4	• Training on “the Nine Attitudes of Mindfulness” via MELTApp. • Introduction to the nine attitudes of mindfulness • Reviewing each attitude on MELTApp • Exploring the presence and absence of each attitude via MELTApp
Week 5	• Training on “MELT Practices” via MELTApp. • MELT practices for young learners • MELT practices for adults • How to use the “MELT Practices” widget on MELTApp

During the first week, MELTApp and the MELTApp Training were introduced. The second week commenced with a focus on "Mindfulness and Our Bodies", namely, the nervous system and the endocrine system. During the MELTApp Training, participants were required to actively participate in the course by using MELTApp. In accordance with the lesson's topic, participants were posed relevant questions and were required to answer them using MELTApp. In addition, they were requested to express their opinions regarding the utilization of the application throughout the course. Following the sessions, the weekly task aimed at encouraging the utilization of MELTApp was introduced. Subsequently, the pre-service teachers were instructed to submit their tasks to the assigned drive folder for the week. Additionally, they were required to meticulously complete the reflection logs pertaining to the lesson's content and their use of MELTApp.

Tasks of the MELTApp Training

In order to collect the participants' views regarding their use of the various aspects of the MELTApp after each session of the training, the participants were enrolled in weekly tasks. Therefore, a total of 5 tasks (See Appendix F) were meticulously created for the participants to effectively utilize the pertinent widgets of each week. These tasks encouraged the participants to focus on different aspects of the mobile application and use them in various aspects of a lesson. This way, it was aimed at ensuring the systematic integration of MELTApp into the participants' daily and professional lives. The table below displays the content of the tasks associated with each feature of MELTApp:

Table 3.4. *Content of the MELT Training Tasks*

Week	Features	Content of the Task
Week 1	Mindfulness and Our Bodies	The participants are asked to observe a student during specific moments, such as answering questions and indicate stress, anxiety, or relaxation, and then reflect on how mindfulness practices could benefit these situations using MELTApp.
Week 2	Breathing Exercises for Language Classes	The participants are required choose a breathing exercise from MELTApp and implement it by themselves and in their classes and observe their bodily changes and students' reactions.
Week 3	Meditation Practices for Language Classes	The participants are expected choose a meditation practice from MELTApp and implement it by themselves and in their classes and observe their bodily changes and students' reactions.
Week 4	The Nine Attitudes of Mindfulness through Interactive Stories	The participants are instructed to engage with the "The Attitudes of Mindfulness" section of MELTApp, reflect on their previous experiences with the attitudes by providing at least three examples, identify strategies to promote these attitudes, and write about their feelings while using MELTApp.
Week 5	MELT Practices	The participants are asked to prepare a MELT task, either for young learners or adults, aligned the curriculum in their teaching contexts by paying attention to the sample practices in MELTApp.

The participants were required to complete the weekly task and submit it to the specified Drive folder shared by the researcher (See Appendix G for the sample uploaded

task). Upon finishing the tasks, the participants responded to the questions on the reflective logs regarding their use of the various features of MELTApp weekly.

3.5.Data Collection Instruments

The primary foci of this study were to design and develop a mobile application (MELTApp) intended exclusively for language teachers who incorporate mindfulness into their language teaching practices and provide training on its usage for pre-service EFL teachers. It was also aimed to unveil whether the MELTApp training had any effect on the participants' mindfulness levels in general. To fulfill these aims, quantitative data were collected using The Five Facets of Mindfulness Scale (Baer et al., 2006), while qualitative data were obtained using weekly reflective logs and semi-structured interviews. Three experts from the ELT Department at Anadolu University were consulted throughout the design of the qualitative data collection tools. These experts were informed about the goal of the study and were asked for their input on the adequacy and applicability of the instruments. After carefully reviewing their suggestions, the necessary modifications were implemented. Table 3.4. presents the research questions, instruments used for collecting data, and how the data analysis was conducted.

Table 3.5. Research Questions

Research Questions	Data Collection Instruments	Data Analysis
RQ1. Is there any effect of the MELTApp training on the participants' mindfulness levels?	The Five Facets of Mindfulness Questionnaire (n=19) as pre and post test	SPSS Statistics V.27 • Descriptive statistics • The Wilcoxon signed-rank test
RQ2. What are the experiences and reflections of pre-service EFL teachers about the MELTApp training?	Weekly reflective logs (n=19) Semi structured interviews (n=11)	The Constant Comparison Method (Glaser & Strauss, 1967)
RQ3. What are the experiences and reflections of pre-service EFL teachers regarding the integration of MELTApp in their teaching and personal practices?	Weekly reflective logs (n=19) Semi structured interviews (n=11)	The Constant Comparison Method (Glaser & Strauss, 1967)

3.5.1. The Five Facets of Mindfulness Questionnaire

The Five Facets of Mindfulness Questionnaire (FFMQ) (See Appendix H), developed by Baer et al. (2006), was utilized in this study as a pre- and post-test tool to determine the possible impact of the MELTApp Training on participants' overall mindfulness levels. The FFMQ is a 39-item self-report questionnaire commonly employed for assessing mindfulness in different settings. Due to the absence of a questionnaire specifically addressing mindfulness practices in L2 teaching and learning environments, the FFMQ was selected for its strong psychometric qualities and its thorough methodology in assessing mindfulness as a complex phenomenon. The major objective was to ascertain whether the training, together with MELTApp, would result in significant changes in the participants' overall mindfulness levels, which are fundamental to the training content.

The FFMQ items are scored using a five-point Likert scale, with scores ranging from 1 (never or very rarely true) to 5 (very often or always true). They are categorized into five fundamental components of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. The *Observing* facet is the inclination to observe both internal and external experiences, such as physiological sensations, emotions, or sensory details. The *Describing* facet shows the ability to label internal events with words. *Acting with awareness* pertains to being aware of the present moment instead of functioning on autopilot. *Non-judgment of inner experience* entails adopting a neutral, welcoming attitude towards one's ideas and emotions, whereas *Non-reactivity* is the ability to permit thoughts and feelings to arise and fade without being overwhelmed by them. The five components are acknowledged as the fundamental parts of mindfulness, and their incorporation in this study was crucial to encompass the extent of participants' cognitive and emotional involvement with the training. Table 3.5. briefly describes the five facets in the FFMQ:

Table 3.6. *The five facets of mindfulness and their descriptions*

Facet	Brief Description
Observing	Noticing or attending to internal and external experiences
Describing	Labeling internal experiences with words
Acting with Awareness	Attending to one's activities instead of behaving mechanically
Non-judging	Taking a non-evaluative stance toward thoughts and feelings
Non-reactivity	Allowing thoughts and feelings to come and go, without getting caught up

Certain items in the questionnaire necessitated reverse scoring, which was incorporated during the data preparation phase. Certain items in the questionnaire necessitated reverse scoring, which was incorporated during the data preparation phase. Specifically, items 5, 8, 10, 13, 14, 16, 17, 23, 25, 28, 30, 34, 35, and 38 were reverse-scored in accordance with the original scoring guidelines of the FFMQ. This means that for these items, a response of 1 (never or very rarely true) was recoded as 5 (very often or always true), 2 as 4, 4 as 2, and 5 as 1.

The FFMQ was administered in English through Google Forms, as the participants had adequate language skills to understand the items. Furthermore, participants were provided assistance in comprehending any challenging items. Previous research has proven the internal consistency of the FFMQ, with Cronbach's alpha coefficients for the five subscales ranging from 0.75 to 0.91 in Turkish samples, indicating excellent reliability (Kınay, 2013). Consent to utilize the questionnaire was obtained from the original developers via e-mail correspondence (See Appendix I).

3.5.2. Reflective Logs

In order to obtain a comprehensive understanding of the participants' perspectives on Mindfulness-Enhanced Language Teaching, the training, and the integration of MELTApp into language teaching, weekly reflective logs were collected following each session of the MELTApp training. In reflective logs, six questions were asked regarding the participants' opinions, experiences, choices, purposes, and perceptions (see Appendix J). The questions were composed in the participants' native language in order to facilitate their ability to provide a detailed explanation. In each session, different topics were covered, and after each

session, different tasks were presented to encourage the participants to engage in MELTApp and its relevant features. Following the completion of the tasks, they were instructed to write reflective logs. The participants received the reflective logs via Google Forms following each session. That is, each participant was obligated to complete a reflective log after each session following the completion of the relevant task in order to ponder on their week by reviewing their experiences in the session and with MELTApp.

3.5.3. Semi-structured Interviews

The present study, due to its multi-layered nature, necessitated intricate remarks concerning MELT, MELTApp, and the training process. Conducting one-on-one interviews facilitates a profound comprehension of qualitative data (Creswell, 2009). Thus, it was determined that it would be worthwhile to investigate the pre-service EFL teachers' overall perceptions regarding the aims of the study. Therefore, following the training procedure, volunteer participants (n=11) were interviewed in semi-structured one-on-one interviews.

Taking into consideration the aims of the study, ten open-ended questions were formulated. Among these questions, five of them addressed questions regarding the overall perception of MELT, whereas the remainder addressed MELTApp in particular. The initial set of five questions was designed to elicit an overall grasp of MELT. In this part, the questions were designed to reveal the participants' comprehension, perspectives, and encounters with Mindfulness-Enhanced Language Teaching (MELT) and technology-supported mindfulness education in language teaching. The second set of five questions possesses more particular features. That is, the purpose of the subsequent five questions is to gauge how people perceive using the MELTApp app to teach English along with how they describe their experiences with the app in general. Three experts from Anadolu University were contacted to verify the validity of the questions. After receiving their approval, the questions were finalized (See Appendix K). The interviews were conducted in Turkish, the participants' native language, to minimize language barriers and maximize detailed explanations. The interview recordings were then transcribed verbatim for data analysis.

3.6.Data Collection Procedures

The current study consisted of an eight-week data collection process. Prior to the beginning of the data collection phase of the study, the Ethical Board of Anadolu University granted the appropriateness of the study with its data collection instruments and procedures (see Appendix L for Ethical Board Approval). Following the ethical board approval, the data collection procedures started. The given steps are taken in data collection:

- **Week 1:** The aims of the study and the procedures in general were explained to the participants. The pre-service EFL teachers' written consents were obtained, guaranteeing their voluntary participation in the study. The participants were ensured that their responses throughout the study would be analyzed anonymously, and they would contribute solely to research purposes. A background information form was sent to the participants via Google Forms to collect information about the participants' demographic information, their familiarity with the concept of mindfulness, and related mindfulness practices prior to the study. Subsequently, the Five Facets of Mindfulness Questionnaire (Baer et al., 2006) was distributed to the participants via Google Forms to identify their mindfulness levels prior to the MELTApp training. This week served as an introductory week to the training and the procedure.
- **Weeks 2-6:** The MELTApp training was initiated, and in each week of the training, a feature of MELTApp was introduced to the participants through a PowerPoint presentation. The participants were encouraged to use the relevant widgets of MELTApp and elaborate on the topic and its usage. Following each training session, a task promoting the utilization of MELTApp was introduced to the participants. Afterward, they were informed that upon uploading the relevant task on a Google Drive file, they were required to write a reflection log with open-ended questions delivered via Google Forms. The actual duration of the training lasted for five weeks. See Section 3.4. for the detailed steps of the training process.
- **Week 7:** After the training was completed, the Five Facets of Mindfulness Questionnaire (Baer et al., 2006) was re-sent to the participants to determine whether the training had any effect on their mindfulness levels regarding the five essential

components of mindfulness. The questionnaire was administered in English via Google Forms.

- **Week 8:** Semi-structured interviews were performed with each voluntary participant ($n = 11$) after the whole process to identify their opinions and experiences regarding Mindfulness-Enhanced Language Teaching, the MELTApp training, and the integration of the MELTApp in L2 teaching/learning contexts. The one-on-one interviews were documented on video and transcribed verbatim.

3.7. Data Analysis

The first research question of the study aimed to determine whether the MELTApp Training had a statistically significant effect on the participants' mindfulness levels. To investigate this, the Five Facets of Mindfulness Questionnaire (FFMQ), developed by Baer et al. (2006), was employed as a pre- and post-test instrument. The FFMQ measures five core components of mindfulness: *Observing*, *Describing*, *Acting with Awareness*, *Non-judging of Inner Experience*, and *Non-reactivity to Inner Experience*. The questionnaire includes 39 items, each scored on a 5-point Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true). Thus, the total score ranges from 39 to 195, with higher scores indicating higher mindfulness levels. Reverse scoring was applied to specific negatively worded items (i.e., Items 5, 8, 10, 13, 14, 16, 17, 23, 25, 28, 30, 34, 35, and 38) during the data preparation stage.

Initially, descriptive statistics (means and standard deviations) were calculated to observe any differences in participants' mindfulness levels before and after the training. To determine the appropriate statistical test, normality tests (Kolmogorov–Smirnov and Shapiro–Wilk) were conducted. Given the limited sample size ($n = 19$), the Wilcoxon signed-rank test, a non-parametric alternative to the paired samples t-test, was employed. The statistical analyses were performed using IBM SPSS Statistics version 27. This approach allowed for an objective and rigorous evaluation of changes in participants' mindfulness levels following the MELTApp training.

The second and third research questions focused on uncovering the participants' experiences with the MELTApp Training and MELTApp. To explore these areas in depth,

qualitative data were collected through the weekly reflective logs submitted by all participants (n=19) and the semi-structured interviews conducted with a subset of participants (n=11) after the training. These data sources aimed to reveal participants' perceptions and evolving views over the eight-week study (see participant reflections, Schön, 1983; Boud, Keogh & Walker, 1985). Given the emergent, exploratory nature of the qualitative data, the Constant Comparison Method (CCM) was selected for analysis. This approach was appropriate due to its capacity to identify and refine recurring patterns through continuous comparison of the data, ensuring a grounded and systematic analysis process. The qualitative data analysis process followed several systematic steps:

- Initial Coding: All reflective logs and interview transcripts were read multiple times and segmented into meaningful units. Each unit was assigned a preliminary code, which represents a keyword or phrase summarizing the essence of the unit.
- Reviewing and Refining Codes: Redundant or overlapping codes were merged, and clearer definitions were assigned to each code. In this study, a code represents a repeated idea, experience, or opinion across the data.
- Categorization: Codes were grouped into subcategories, which were then organized into main themes (categories) reflecting broader ideas and patterns related to participants' MELTApp and training experiences.
- Consensus Coding: To ensure inter-rater reliability, a second coder with experience in qualitative research independently analyzed the entire data set. Coding discrepancies were discussed until the consensus was reached.
- Peer Debriefing: To further enhance trustworthiness, peer debriefing was conducted with a subject expert in both English Language Teaching and mindfulness, who reviewed the emerging categories and subcategories and provided critical feedback three times.

This twofold analytical structure, namely, quantitative and qualitative, was necessary to explore both the effectiveness of the MELTApp training in enhancing mindfulness and the perceptions and experiences of the participants, ensuring a holistic understanding of the intervention. The embedded mixed-methods design (Creswell, 2012) was chosen precisely

to gain deeper insight by embedding quantitative results within the broader qualitative framework of participants' experiences. The qualitative analysis was conducted via MAXQDA 2022. MAXQDA is a software tool used for qualitative and mixed-methods data analysis. In this study, it was used to analyze participants' written reflections and interview transcripts, and it allowed for the coding, categorization, and interpretation of the data systematically.



CHAPTER 4

4.RESULTS

The main aim of this study was to explore pre-service EFL teachers' opinions and experiences regarding MELTApp and the MELTApp training. Additionally, the study sought to find out whether the MELTApp training had an impact on the participants' mindfulness levels. Parallel to these, the following research questions were formulated:

RQ1. Is there any effect of the MELTApp training on the participants' mindfulness levels?

RQ2. What are the experiences and reflections of pre-service EFL teachers about the MELTApp training?

RQ3. What are the experiences and reflections of pre-service EFL teachers regarding the use of MELTApp in their teaching and personal practices?

To address these questions, the MELTApp training was executed with 19 pre-service EFL teachers enrolled in the course Mindfulness Practices in English Language Teaching at Anadolu University. For the first research question, quantitative data were collected before and after the training through the Five Facets of Mindfulness Questionnaire developed by Baer et al. (2006). The change in the participants' mindfulness levels was analyzed first using descriptive statistics with mean scores, and further Wilcoxon signed-rank test was used to find out whether a significant difference existed between the pre- and post-tests. For the second and third research questions, and to have a profound understanding of the participants' interactions, weekly reflective logs were solicited from each participant, and semi-structured interviews were conducted with 11 of them based on their voluntary participation. The qualitative data were analyzed using the Constant Comparison Method.

The data analysis in this section commences with an examination of the changes in the pre-service EFL teachers' mindfulness levels. This is followed by an exploration of their perceptions of the MELTApp Training, and subsequently, their experiences with MELTApp.

4.1. RQ1. Is there any effect of the MELTApp training on the participants' mindfulness levels?

To explore the effect of the MELTApp training on participants' mindfulness levels, the Five Facets of Mindfulness Questionnaire (FFMQ; Baer et al., 2006) was utilized prior to and following the MELTApp Training. The FFMQ consists of 39 items evaluated on a five-point Likert scale, with ratings from 1 (never or very rarely true) to 5 (very often or always true). Descriptive statistics, namely, mean scores and standard deviations, were computed for each item to discern differences between the pre- and post-training responses, as shown in Table 4.1. The descriptive findings revealed an increase in mean scores across nearly all facets, indicating that participants' mindfulness practices improved after five weeks of MELTApp training.

Table 4.1. *Descriptive statistics related to the pre- and post-Five Facets of Mindfulness Questionnaire*

	Mean (Pre)	SD	Mean (Post)	SD	N
1. When I'm walking, I deliberately notice the sensations of my body moving.	2.68	1.16	3.58	0.84	19
2. I'm good at finding words to describe my feelings.	3.32	1.00	3.89	0.81	19
3. I criticize myself for having irrational or inappropriate emotions.	2.21	0.92	3.11	0.88	19
4. I perceive my feelings and emotions without having to react to them.	2.53	0.70	3.26	0.93	19
5. When I do things, my mind wanders off and I'm easily distracted.	2.16	0.76	2.79	0.98	19
6. When I take a shower or bath, I stay alert to the sensations of water on my body.	3.00	1.05	3.84	0.76	19
7. I can easily put my beliefs, opinions, and expectations into words.	3.32	0.89	3.89	0.88	19
8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	2.63	1.12	3.53	0.77	19
9. I watch my feelings without getting lost in them.	2.42	0.90	3.21	0.71	19
10. I tell myself I shouldn't be feeling the way I'm feeling.	2.26	0.87	2.79	0.98	19
11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	3.47	1.17	4.11	0.88	19

Table 4.2. (Continued) *Descriptive statistics related to the pre- and post-Five Facets of Mindfulness Questionnaire*

12. It's hard for me to find the words to describe what I'm thinking.	3.32	1.25	3.79	0.98	19
13. I am easily distracted.	2.21	0.79	3.00	0.75	19
14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	2.58	1.17	3.74	0.93	19
15. I pay attention to sensations, such as the wind in my hair or the sun on my face.	3.11	0.99	3.89	0.88	19
16. I have trouble thinking of the right words to express how I feel about things.	3.21	1.08	3.58	0.96	19
17. I make judgments about whether my thoughts are good or bad.	2.42	1.07	3.26	0.93	19
18. I find it difficult to stay focused on what's happening in the present.	2.68	1.16	3.47	0.84	19
19. When I have distressing thoughts or images, I 'step back' and am aware of the thought or image without getting taken over by it.	2.58	0.69	3.37	0.76	19
20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	3.26	0.87	4.11	0.74	19
21. In difficult situations, I can pause without immediately reacting.	2.68	0.95	3.63	1.07	19
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	3.16	1.07	3.63	0.83	19
23. It seems I am 'running on automatic' without much awareness of what I'm doing.	2.79	0.85	3.16	0.83	19
24. When I have distressing thoughts or images, I feel calm soon after.	2.63	0.96	3.58	0.84	19
25. I tell myself that I shouldn't be thinking the way I'm thinking.	2.42	1.02	3.37	0.83	19
26. I notice the smells and aromas of things.	3.21	1.03	4.26	0.99	19
27. Even when I'm feeling terribly upset, I can find a way to put it into words.	2.95	0.97	3.89	0.74	19
28. I rush through activities without being really attentive to them.	2.89	0.88	3.42	0.61	19
29. When I have distressing thoughts or images, I am able just to notice them without reacting.	2.42	0.77	3.21	0.98	19

Table 4.3. (Continued) *Descriptive statistics related to the pre- and post-Five Facets of Mindfulness Questionnaire*

30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.	2.42	1.07	3.32	1.06	19
31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	3.89	0.74	4.26	0.73	19
32. My natural tendency is to put my experiences into words.	3.26	0.87	3.79	0.85	19
33. When I have distressing thoughts or images, I just notice them and let them go.	2.32	0.75	3.16	0.96	19
34. I do jobs or tasks automatically without being aware of what I'm doing.	3.11	0.88	3.47	0.90	19
35. When I have distressing thoughts or images, I judge myself as good or bad depending what the thought or image is about.	2.79	0.98	3.16	1.07	19
36. I pay attention to how my emotions affect my thoughts and behavior.	3.42	0.90	4.00	1.00	19
37. I can usually describe how I feel at the moment in considerable detail.	3.00	0.88	3.74	0.93	19
38. I find myself doing things without paying attention.	2.37	0.90	3.53	0.84	19
39. I disapprove of myself when I have irrational ideas.	2.21	1.13	3.11	1.05	19

Among the five facets the questionnaire involves, in the *Observing* facet, improvements were particularly evident across several items. For example, item 1 (“When I’m walking, I deliberately notice the sensations of my body moving”) showed an increase from a pre-test mean of 2.68 (SD = 1.16) to a post-test mean of 3.58 (SD = 0.84). Similarly, item 26 (“I notice the smells and aromas of things”) rose from 3.21 (SD = 1.03) to 4.26 (SD = 0.99), and item 31 (“I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow”) increased from 3.89 (SD = 0.74) to 4.26 (SD = 0.73). These changes indicate a heightened awareness of physical and sensory experiences after the training. Additionally, in the *Non-reactivity to Inner Experience* facet, participants showed substantial improvements. Item 4 (“I perceive my feelings and emotions without having to react to them”) rose from 2.53 (SD = 0.70) to 3.26 (SD = 0.93), and item 24 (“When I have distressing thoughts or images, I feel calm soon after”) improved from 2.63 (SD = 0.96) to 3.58 (SD = 0.84). These changes reflect a strengthened ability to remain mindful in the face of emotional discomfort.

In the *Describing* facet, participants reported enhanced emotional articulation. Item 2 (“I’m good at finding words to describe my feelings”) rose from 3.32 (SD = 1.00) to 3.89 (SD = 0.81), while item 7 (“I can easily put my beliefs, opinions, and expectations into words”) also improved, from 3.32 (SD = 0.89) to 3.89 (SD = 0.88). These improvements reflect an increased ability to express internal states with greater clarity. Furthermore, the *Acting with Awareness* facet also exhibited notable development. For example, item 5 (“When I do things, my mind wanders off and I’m easily distracted”, reverse coded) improved from 2.16 (SD = 0.76) to 2.79 (SD = 0.98), and item 38 (“I find myself doing things without paying attention”, reverse coded) increased from 2.37 (SD = 0.90) to 3.53 (SD = 0.84). These shifts suggest that participants became more attentive and intentional in their daily activities. Lastly, in the *Non-judging of Inner Experience* facet, participants demonstrated reduced self-criticism. Item 10 (“I tell myself I shouldn’t be feeling the way I’m feeling”, reverse coded) increased from 2.26 (SD = 0.87) to 2.79 (SD = 0.98), while item 17 (“I make judgments about whether my thoughts are good or bad”, reverse coded) rose from 2.42 (SD = 1.07) to 3.26 (SD = 0.93), indicating greater emotional acceptance and reduced internal evaluation.

To determine if a statistically significant difference appeared between the pre- and post-test findings, further statistical analysis was conducted. Initially, normality tests were run to ascertain whether the data exhibited a normal distribution, thereby determining its suitability for parametric statistical analysis. Due to the limited number of participants (n=19), the Kolmogorov-Smirnov values were examined. The results of the tests of normality below can be seen in Table 4.2.

Table 4.4. *Tests of Normality*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	.167	17	.200*	.927	17	.191
Post-test	.175	17	.178	.962	17	.676

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4.2. illustrates that the Kolmogorov-Smirnov value displayed that the data follows a normal distribution ($p > .05$). However, two experts in ELT suggested that a non-parametric test should be run to avoid the violation of the results due to the small sample size. To comply with the experts' recommendation, a non-parametric Wilcoxon signed-rank test was performed. Table 4.3. shows the Wilcoxon signed-rank test results to compare pre- and post-tests within the same group.

Table 4.5. *The results of the Wilcoxon signed-rank test*

Ranks		N	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Post-test – Pre-test	Negative Ranks	3 ^a	4.83	14.50	-3.093	.002
	Positive Ranks	15 ^b	10.43	156.50		
	Ties	1 ^c				
	Total	19				

a. Post-test < Pre-test b. Post-test > Pre-test c. Post-test = Pre-test

The table above illustrates that there was a statistically significant difference between pre- and post-test results ($Z = -3.093$, $p < 0.01$). When analyzed in detail, it was visible that 15 of the participants had post-test scores that were higher than their pre-test scores, suggesting that there was an improvement following the MELTApp training. The post-test scores of three participants were lower, while the score of one participant remained unaltered. The statistical results highlighted that the MELTApp training had a significantly positive effect on the mindfulness levels of the majority of the participants. As a result, the quantitative data analysis offers a holistic portrayal of the impact of the MELTApp training on participants' mindfulness levels, which unveils a statistically significant change in their mindfulness practices prior to and subsequent to the training. This observed impact was further supported by participants' reflections on how they incorporated mindfulness into their everyday routines. P9 remarked, *“The 1-3-5-minute breathing exercises in the Simple Breathing Exercises section were the ones I used the most this week. I turned to these exercises many times while preparing an assignment, before my practicum, or when encountering any everyday problem* (The second week's reflective log). As evidenced by this expression, the training did not merely enhance mindfulness at a theoretical level but also

translated into practical behavioral changes, indicating the participants' growing ability to apply mindfulness strategies in a variety of real-life contexts.

4.2.RQ2. What are the experiences and reflections of pre-service EFL teachers about the MELTApp Training?

The second research question aimed to discover the experiences of the participant pre-service EFL teachers with the MELTApp training. Although the participants were asked to reflect on MELTApp Training exclusively, most of their comments predominantly centered on the utilization of MELTApp. Consequently, the number of codes associated with the MELTApp Training was relatively lower.

The participants received face-to-face training tailored for them for five weeks. In order for them to monitor their involvement, they were required to reflect on their experiences regarding the training process on a weekly basis. Additionally, 11 of the participants participated in the semi-structured interviews following the training. The qualitative analysis revealed a total of 155 codes for the participants' perspectives on the MELTApp Training. These codes established two primary categories: *Knowledge and Learning* (95 codes), experiences throughout the training, and *Emotional Impacts* (60 codes) of the training. Table 4.4. illustrates the primary categories formed, and the subsequent sections provide a detailed explanation of each subcategory under the main categories.

Table 4.6. *The main categories regarding MELTApp Training experiences*

Main Categories	Description	N*
Knowledge and Learning	Views on the informational content of the training	95
Emotional Impacts	Emotional responses and feelings during the training	60
Total		155

N*: Number of Codes

4.2.1. Knowledge and Learning

The MELTApp training significantly enhanced the participants' knowledge and understanding of mindfulness and its application in language teaching. As shown in Table 4.5., the qualitative analysis yielded 95 codes related to the category of *Knowledge and Learning*, which encompasses the participants' reflections on how the training contributed to their cognitive and pedagogical development. This category includes two subcategories that

reflect the nature and scope of the training's impact. The first subcategory, *Enlightening and Informative* (82 codes), refers to the participants' statements about the overall utility and relevance of the training for their teaching practices and professional growth, as the participants believed that the training was beneficial, informative, and awareness-raising. What is more, the second subcategory, *Engaging* (13 codes), captures the participants' views that the training was productive, interactive, and collaborative. These subcategories illustrate that MELTApp training served not only as a practical intervention but also as a meaningful learning experience that broadened participants' perspectives and prepared them to integrate mindfulness into educational settings.

Table 4.7. *The sub-categories related to the knowledge and learning aspect of the MELTApp training*

Sub-categories	N*
<i>The content of the MELTApp training was...</i>	
Enlightening and Informative	82
Engaging	13
Total	95

N*: Number of Codes

As shown in Table 4.5., the MELTApp training had a significant impact on the participants' knowledge and learning by providing valuable insights, raising awareness, and offering informative and fruitful experiences. Participants frequently emphasized that the training sessions introduced them to new concepts, deepened their understanding of mindfulness, and helped them recognize its relevance to both personal well-being and teaching practices. A common theme among participants was that the training was *Enlightening and Informative* (82 codes), which they found to be beneficial in introducing them to new perspectives on mindfulness, the brain-body connection, and how these concepts can be integrated into teaching. P2 and P4 reflected on their experience, stating:

"This week's session was very beneficial. I learned things I didn't know before. I didn't know that our body was so coordinated with our brain and directed us. Even though it manages us, I learned that it is also possible to take control. In line with all this I have learned, I think this session was productive for us teacher candidates from the very first week." (P2- The first week's reflective log)

"This week's MELTApp session had extremely beneficial content. It was very enjoyable to see meditation techniques that I had not seen before, to learn about them and to practice them."

While I was a little bored of trying the classical meditations known to everyone, I was happy to see such new and practical methods." (P4- The third week's reflective log)

As per P2, the training expanded participants' understanding of mindfulness beyond its common interpretations, and it helped them grasp how the mind and body work together and how mindfulness techniques can be actively used to regulate one's state of mind. P4 also shared a similar sentiment and appreciated the practical aspects of learning new meditation techniques. These statements highlight how the training not only provided theoretical knowledge but also introduced practical applications of mindfulness that were engaging and different from traditional approaches. The opportunity to actively practice and apply mindfulness techniques contributed to the participants' positive learning experiences. In addition to being beneficial, the training was perceived as awareness-raising and participants realized the importance of controlled breathing, meditation, and mindfulness in both personal and professional settings. The participants noted:

"I realized how important controlled breathing and meditation are for the human body and especially the mind. The subject of meditation was not of much interest to me before, or I was thinking of it in a different context, but I am happy with the results." (P8- The third week's reflective log)

"The most important content of our lesson was this week. I am happy that I finally learned the basics of how to integrate mindfulness into our lessons as a teacher." (P11- The fifth week's reflective log)

P8's reflection suggests that the training helped reshape participants' prior assumptions about mindfulness, demonstrating its scientific and practical benefits in ways they had not considered before. Additionally, P11's reflection emphasized how learning about mindfulness integration in teaching was a turning point in their training. These indicate that the training not only introduced participants to mindfulness but also provided them with practical methods for applying it in educational contexts, reinforcing its relevance for future teaching. As a result, training raised the participants' awareness of numerous aspects related to the effects of mindfulness practices. In the subcategory of *Enlightening and Informative*, the informative nature of the training was commonly mentioned, as participants appreciated the scientific explanations behind mindfulness practices and how they influence physiological and cognitive functions. One participant described how learning about the nervous system and hormones deepened their understanding of mindfulness-based practices:

"The session was very informative. After being informed about the developed application, we taught a lesson about the 'nervous system', 'our hormones', and 'mindfulness-based practices'. We've seen how a mindful state of mind affects our hormones and nervous system. It was a very productive lesson." (P5- The first week's reflective log)

This response highlights how the training went beyond practical exercises and included scientific explanations, allowing participants to have information on the physiological impact of mindfulness. By grounding mindfulness in biological and psychological concepts, the training reinforced its credibility and applicability in educational settings.

Lastly, the participants described the training as *Engaging* (13 codes), particularly in terms of collaboration, interaction, and opportunities for reflective dialogue. The training sessions were structured to foster active participation, where participants not only absorbed knowledge but also actively contributed to discussions. This interactive environment enabled them to explore how mindfulness practices could be meaningfully adapted to their own teaching contexts. The chance to voice their opinions, share personal insights, and hear diverse perspectives created a sense of inclusion and relevance. For example, P7 emphasized that the opportunity to reflect on previously covered content, collaboratively examine mindfulness-based classroom activities, and offer practical suggestions on implementation made the session both enjoyable and impactful:

"This week's session was very fruitful and enjoyable as always. I felt like this session summed up all we learned overall. We examined mindful enhanced activities and discussed how we could integrate them into language teaching in classrooms. It was a really positive experience to be given opportunities to discuss and make suggestions about implementation and to have our ideas taken into consideration. We didn't have any negative experiences." (P7- The fifth week's reflective log)

This statement underscores how active participation and discussion-based learning were key components of the training, making it an engaging and enriching experience. The emphasis on collaborative learning and real-world application suggests that technology-supported mindfulness training was not only educational but also interactive and dynamic, allowing participants to apply their knowledge in meaningful ways.

Overall, these findings indicate that technology-supported mindfulness training had a profound impact on pre-service English teachers' knowledge and learning by providing

them with new insights, practical applications, and scientific explanations of mindfulness. The training helped broaden their understanding, reshape prior assumptions, and equip them with tools for integrating mindfulness into teaching. Additionally, its interactive and discussion-based nature fostered a positive and engaging learning environment, reinforcing both theoretical and practical knowledge.

4.2.2. Emotional Impacts

The participants reported experiencing emotional effects as a result of the MELTApp training. Table 4.6. demonstrates that the qualitative analysis identified 60 codes related to *Emotional Impacts*. This suggests that the training not only enhanced the professional and cognitive development of the participants but also impacted on their emotional well-being, promoting feelings of pleasure, relaxation, and other emotions.

Table 4.8. *The sub-categories related to the emotional impacts of the MELTApp training*

Sub-categories	N*
<i>The MELTApp training was...</i>	
Pleasant	30
Relaxing	26
Others	4
Total	60

N*: Number of Codes

The findings suggest that the participants frequently described the lessons as enjoyable, calming, and valuable, reinforcing the idea that the training was not only educational but also emotionally fulfilling. One of the most emphasized aspects of the training was its *Pleasant* (30 codes) nature as participants found the sessions both engaging and rewarding. The integration of visuals, text-based scenarios, and interactive exercises contributed to a dynamic learning experience. One participant highlighted how these elements made the lessons enjoyable and meaningful:

"I can say that this week's session and content were the most enjoyable and pleasant for me. We used the application very actively and I liked seeing in detail which attitude we should use in which situation, and I am sure that I will use this in my professional life." (P6- The third week's reflective log)

This statement suggests that the training was not only engaging in the moment but also perceived as beneficial for future teaching practices, reinforcing its long-term applicability. By incorporating visual and written elements, the training provided multi-sensory learning experiences, making it more enjoyable and effective for participants.

Another important emotional impact was the *Relaxing* effect of the sessions (26 codes). Many participants found the training to be a stress-relieving and calming experience, likely due to the mindfulness exercises and discussion-based format. P5, in the fifth week's reflective log, stated, "*This week we talked about the techniques we can use in the application for adults and younger age groups. It was a fun and relaxing lesson as always.*". This suggests that learning about the integration of mindfulness activities into classes, whether through theoretical discussions or hands-on exercises, contributed to a calming learning environment, helping participants feel at ease while absorbing new information. The combination of structured learning and relaxation created a balanced and engaging atmosphere, making the training both informative and emotionally fulfilling.

Additionally, the "Others" category (4 codes) captured additional emotional responses that did not fit strictly under pleasant or relaxing experiences. Some participants described mixed emotions, such as sadness that the training was ending but happiness about how much they had enjoyed the sessions. That is, the training was not only a source of learning but also a meaningful and enjoyable experience, fostering a sense of community and connection among participants. Another participant reflected on the session's duration and purpose, explaining:

"Although it took a little long time, it was useful for the introduction of the application." (P11-
The first week's reflective log)

This highlights that while some sessions may have felt lengthy, they were still perceived as valuable and beneficial for understanding and implementing MELTApp. Overall, these findings suggest that technology-supported mindfulness training had a strong emotional impact on pre-service EFL teachers. The sessions were deemed pleasant, relaxing, and engaging, indicating that the integration of mindfulness into teacher education can contribute not only to professional development but also to emotional well-being

4.3. RQ3. What are the experiences and reflections of pre-service EFL teachers regarding the use of MELTApp in their teaching and personal practices?

The qualitative analysis identified 621 codes related to participants' experiences with MELTApp. The codes were classified into four major categories, namely, *Popular Widgets*, *Usage Purposes*, *Advantages and Benefits*, and *Suggestions and Challenges*. Each category emphasizes unique dimensions of the participants' engagement with the application. The main categories related to the participants' MELTApp experiences are displayed in Table 4.7., and the related sub-categories are presented in the subsequent sections.

Table 4.9. *The main categories regarding MELTApp experiences*

Main Categories	Description	N*
Popular Widgets	Effective app features for practicing mindfulness	218
Usage Purposes	Contexts of personal, academic, and professional use	178
Advantages and Benefits	Perceived personal and teaching-related benefits	171
Suggestions and Challenges	Reported issues and user recommendations	54
Total		621

N*: Number of Codes

4.3.1. Popular Widgets

The main category of *Popular Widgets* consisted of 7 sub-categories and a total of 218 codes. MELTApp included various widgets that guided the participants to exercise various mindfulness practices (see Section 3.3.2 for the details of the MELTApp features and widgets). The sub-categories related to the popular widgets from the participants' views pointed out that the most frequently used and valued features of MELTApp were techniques that supported mindfulness practices, such as breathing exercises and meditation sessions, as well as tools that encouraged professional growth, self-reflection, and personal growth, including MELT Practices, the Gratitude Zone, and the Attitudes of Mindfulness section. Additionally, features like affirmations were further mentioned as the favorite widgets, notwithstanding the fact that some of the participants stated that they highly appreciated all of the widgets.

Table 4.10. *The sub-categories related to the most popular MELTApp widgets*

Sub-categories	N*
<i>MELTApp widgets that were favorable and effective were....</i>	
Breathing Exercises	92
Meditation Oasis	56
MELT Practices	25
Attitudes of Mindfulness	14
Gratitude Zone	14
Affirmations	9
Others	8
Total	218

N*: Number of Codes

As seen in Table 4.8, the participants expressed that they found some features of the application favorable and effective. These widgets were preferred by the participants for various purposes in their daily lives. Even though MELTAPP was developed for enhancing L2 teachers' practices, widgets helped to practice mindfulness in the participants' daily lives, pinpointing the holistic nature of mindfulness interwoven in real-life fabric of daily practices. Accordingly, the most prominent widget was *Breathing Exercises* (92 codes), which involved various breathing practices such as simple breathing exercises, breathing exercises with natural shapes, and geometric shapes. What is more, the participants were able to engage in breathing exercises with time counters (e.g., 1 minute, 5 minutes) and the MELT light that helped to track when to breathe in, hold, and breathe out, which were highly appreciated. The quotes below embody the use of breathing exercises:

"A friend of mine and I found the square breathing technique effective and useful. It caused both of us to feel our heartbeat, focus on the changes in our bodies, and finally relax. Our breathing became deeper as we inhaled and exhaled, and we noticed the tight places in our bodies and relaxed both physically and mentally." (P2- The second week's reflective log)

"I especially use the breathing exercises. To be honest, I use them every day." (P3-Interview)

"I used the three-minute breathing exercise for myself. I thought it would be good because I had trouble falling asleep. I also used the Rainbow activity for my private lesson student. It attracted his attention because it was both colorful and unconventional." (P5- The second week's reflective log)

"I found the breathing exercises quite effective. Deep breathing, in particular, helped calm my mind and relieve stress. It felt serene." (P13- The second week's reflective log)

As visible from the extracts above, the participants deemed the breathing exercises in MELTApp to be exceptionally useful for relaxation and relieving stress while practicing them in their teaching and personal contexts. The square breathing technique facilitated awareness of their heartbeat, concentration on bodily sensations, and attainment of both mental and physical relaxation. Deep breathing was considered very effective in alleviating tension and fostering tranquility. The exercises were utilized in multiple contexts beyond personal use. For instance, P5 employed the three-minute breathing exercise to enhance sleep and integrated the Rainbow Breathing practice into their private lessons. Moreover, breathing exercises evolved into a daily practice for the participants, which underscores MELTApp's function in incorporating mindfulness into the daily routine.

Another prominent widget in MELTApp was *Meditation Oasis* (56 codes). This feature offered multiple meditation scenarios, particularly cards with visuals and instructions, and they included everyday activities, such as taking a shower or a relaxing atmosphere, including seaside and a rainy day. The following statements echo the participants' expressions related to the features of the MELTApp that exclusively offered guided meditation practices to be used in and out of the classroom context:

"Meditation Oasis was quite effective. As I said, taking a shower and being by the beach are already very good things for me, and applying these methods with such awareness felt good and relaxed for me. The smell of the shampoo in the shower hit my nose, and I felt like I was stepping on the sand on the beach." (P4- The third week's reflective log)

"Providing the Meditation Oasis was very valuable to me because I think meditation is an effective method for relaxation and mental focus. Each of the meditation cards presented a specific scenario or visualization exercise. Overall, it was interesting and helpful that these cards offered a variety of meditation scenarios." (P11- The third week's reflective log)

P4 noted that the meditation oasis was especially beneficial for improving sensory awareness and relaxation. Familiar and welcoming situations, such as showering or visiting the beach, facilitated deeper engagement in the experience. P11 similarly underscored the significance of meditation as a means of relaxation and mental concentration. The wide range of meditation cards was valued for offering structured direction through various visualization exercises, hence enhancing accessibility and engagement in meditation for users.

Apart from the use for personal aims, MELTApp was also appreciated for professional utilities. The third most popular widget was *MELT Practices* (25 codes), a widget designed exclusively for L2 teaching contexts that provided teachers with various MELT activities for young learners and adults with step-by-step instructions. These practices offered teachers lesson plans, materials, and activities that could be used in a language classroom with sound and visual effects. The following statements demonstrate participants' views regarding this widget:

"MELT Practices are highly beneficial, and dividing this section into Young Learners and Adults is a well-thought-out and logical approach." (P9- The first week's reflective log)

"MELT Practices provide ease of use for teachers as they come with pre-prepared instructions." (P10- The fifth week's reflective log)

The structured design and user-friendliness of MELT Practices were valued greatly by the participants, making this widget a popular one. As per P9, the division between Young Learners and Adults was a considerate approach, as it enabled the wise selection of activities that were specifically designed for each age group. Furthermore, P10 implies that the pre-prepared instructions simplified the implementation process, which may have reduced the amount of time that the participants spent on planning.

Notably, the *Attitudes of Mindfulness* (14 codes) and the *Gratitude Zone* (14 codes) widgets were valued equally. These two widgets are closely intertwined in fostering mindfulness as the attitudes of mindfulness encompass gratitude. In MELTApp, The Attitudes of Mindfulness widget guided the participants to view scenarios related to the attitudes of mindfulness, choose what to do in each scenario, and see the consequences of the options. The Gratitude Zone gave them the opportunity to reflect on their experiences in a private section. These practices are demonstrated by the following statements:

"I especially find the Gratitude Zone section very useful. For example, a user might write about a moment when he/she felt grateful for what happened. However, when he/she reads this again after some time, he/she may realize that despite the previous appreciation, that feeling changed. This enables the individual to become aware of the change in his/her feelings and thoughts." (P4- The fifth week's reflective log)

“Beginners' mind, gratitude, trust... I used these mindfulness attitudes while doing my daily work to be present and aware. I think this is also quite effective.” (P18- The fourth week's reflective log)

“By using the attitudes of mindfulness and integrating Beginner's mind and gratitude into my daily life, I tried to stay in the moment and notice many times while traveling, eating, in class, and walking to school.” (P19- The fourth week's reflective log)

Participants emphasized that the Attitudes of Mindfulness and the Gratitude Zone are synergistic in promoting mindfulness. The Attitudes of Mindfulness promoted presence and the incorporation of mindful principles into everyday life, whereas the Gratitude Zone offered a reflective area, assisting users in acknowledging emotional shifts over time. Another aspect mentioned by the participants was *Affirmations* (9 codes). In this section, affirmations for both teachers and learners were presented. P3 asserted, *“...I tried various affirmations with my colleagues, and the results were truly amazing.”* (The second week's reflective log). As seen, P3 used affirmations to foster well-being in a professional setting. This suggests that MELTApp's affirmation feature served as a valuable resource for both individual and collaborative mindfulness practices.

Lastly, codes that reflected participants' ideas related to other features of the MELT App, and that were non-recurring were named as *Others* (8 codes). These include other widgets, such as “Mindfulness and Our Bodies” and “MELT Tips”. The participants expressed their preferences as:

“The MELT Tips section in the app made it easier to access things we needed to remember or wanted to review.” (P9- The fifth week's reflective log)

“I used the Mindfulness and Our Bodies section within the app. During the training, learning about these parts of our body caught my attention. I can say that I used this section of the app more frequently to gain more detailed information.” (P16- The first week's reflective log)

As seen, P9 appreciated the MELT Tips section for its practicality and quick access to review materials. Similarly, P16 valued the Mindfulness and Our Bodies section for its informative content, which deepened their understanding of bodily awareness during

mindfulness training. This section allowed them to explore mindfulness from a physiological perspective, making it a frequently used feature for acquiring detailed information.

As mentioned above, some of the participants expressed that all of the widgets in the app were equally valuable. Instead of emphasizing particular features, they noted that each component of the app fulfilled a unique function, and they together improved their entire experience. P12 explains, “*I believe that everything in the app serves a purpose, and each feature is highly effective and aligned with its intended function*” (The fifth week’s reflective log). As mentioned, MELTApp provides a holistic approach that allows users to engage with different aspects of mindfulness seamlessly. These findings indicate that even the less frequently preferred widgets played a meaningful role in enhancing users’ overall experience with MELTApp.

4.3.2. Usage Purposes

The second main category of *Usage Purposes* (178 codes) highlights the various purposes and contexts in which participants utilized MELTApp. These purposes and contexts include personal, professional, and academic ones, such as daily life, teaching practices, assignments, and so forth. Table 4.9. displays the subcategories of the *Usage Purposes*.

Table 4.11. *The sub-categories related to the Usage Purposes*

Sub-categories	N*
<i>MELTApp was used for/in...</i>	
Daily Life	91
Teaching Practices	57
Concentration	19
Assignments	7
Others	4
Total	178

N*: Number of Codes

As displayed in the table above, the participants expressed multiple usage purposes of MELTApp. The most prominent one was *Daily Life* (91 codes), indicating that MELTApp held merit in helping participants manage stress and cultivate a sense of calm in their daily life contexts. These daily life instances are everyday activities, such as eating, walking, and experiencing problems. The statements below exemplify these findings:

"I resorted to the breathing exercises on MELTApp many times this week when I encountered any daily problems." (P10- The second week's reflective log)

"I used it during stressful moments of the day or when I needed to relax. Breathing exercises, especially during lunch breaks or evening rest periods, were very beneficial for me." (P13- The second week's reflective log)

"By integrating the Beginner's mind and gratitude attitudes in MELTApp into my daily life, I tried to realize them by staying in the moment many times while traveling, eating, in class, and walking at school." (P19- The fourth week's reflective log)

As indicated by P13, the participants deemed MELTApp an effective instrument for stress management and emotional regulation in their daily lives. The functionalities, especially breathing exercises and mindfulness techniques, assisted them in managing difficult situations by fostering a sense of tranquility and awareness. MELTApp offered users practical techniques to control their emotions more efficiently in their daily routines. Further, another problem, sleep deprivation, was reported to be lightened through the use of the app. The participants stated that they used the app before sleep. P8, in the second week's reflective log, mentions, *"I used the app before going to sleep. I had a hard time falling asleep because I was feeling anxious and stressed, so I decided to do a breathing exercise using the app."* P8 discovered that practicing breathing exercises prior to sleep alleviated anxiety and stress, helping to facilitate relaxation and enhancing the ability to fall asleep. This indicates that MELTApp not only promoted mindfulness in daily activities but also contributed to the enhancement of overall well-being by improving sleep quality. This underscores its function in promoting resilience and well-being across all facets of participants' daily lives.

Furthermore, many of the participants stated that they used MELTApp in their *Teaching Practices* (57 codes), which include its use in a variety of teaching and learning contexts. This sub-category covers a wide range of classroom applications, including incorporating mindfulness into lesson planning, applying mindfulness practices to control student behavior, increasing student engagement, mentally preparing before teaching, and even assisting colleagues during difficult situations. The participants noted utilizing MELTApp both independently for their own mental preparation and together with their students and colleagues. These instances show how MELTApp was not only a personal well-

being tool, but also an active part of their professional teaching environment, incorporating it into classroom routines and pedagogical tactics to improve focus, emotional regulation, and classroom dynamics. The reflections below demonstrate these various professional applications:

I use MELTApp at the start of every shift. I have approximately 5-minute breaks between my classes. I usually sit down and use the widgets in the app, such as breathing exercises, before going to class, and I've found it very helpful to me. (P3-Interview)

I used MELTApp while preparing for and during the lesson. The aim was to ensure that lessons were more effective and focused and to encourage students to participate better in the learning process. (P7-The third week's reflective log)

"I used MELTApp to calm myself and my colleagues during stressful moments at work and to keep them in the moment." (P14- The first week's reflective log)

Reflected by P3, P7, and P14, MELTApp has been used before and during the lessons to increase relaxation and concentration. The pre-service teachers in the study used MELTApp from lesson planning, making transitions between the stages of the lesson to enhancing interaction and lowering stress in the classroom. The participants used breathing exercises on their own, with their students, and with their colleagues. This underscores the app's practicality in professional settings for a more effective teaching experience. Similarly, lesson planning was another area in which MELTApp was used in the participants' teaching practices. P7 also expressed in the first week's reflective log, *"I used MELTApp whenever I found my focus wandering elsewhere or became cognitively blocked while writing a lesson plan."* This indicated that MELTApp was also employed as a lesson planning aid, as evidenced by the participant's statement, which facilitated the maintenance of focus and the surmounting of cognitive obstacles. The app's mindfulness techniques were employed by participants to improve productivity and regain clarity when they encountered difficulties with concentration or planning. Aligned with this, another important aspect of teaching practices, the practicum experience, appeared to be supported by the app:

"Before the practicum, reading positive and negative scenarios of attitudes helped me become more conscious in order to reduce my tension and approach my students in a more cheerful, energetic, and understanding way." (P6- The first week's reflective log)

P6 noticed that the scenarios in the Nine Attitudes of Mindfulness widget in MELTApp assisted them in mentally preparing for their practicum experiences. This enabled them to better manage stress, regulate their emotions, and approach students with a greater sense of energy, understanding, and confidence. In light of this, it appears that MELTApp played a significant part in creating both efficient lesson planning and an attentive teaching approach during actual classroom settings.

Further, MELTApp was frequently used by participants to enhance their *Concentration* (19 codes), particularly in moments characterized by mental fatigue, emotional overwhelm, or cognitive stagnation. This category encompasses participants' efforts to refocus their attention, regulate their emotions, and restore motivation during academic tasks, daily responsibilities, or periods of perceived monotony. In these instances, the app's mindfulness-based exercises, such as breathing techniques and reflective practices were employed not only to overcome distractions but also to foster mental clarity, emotional balance, and self-improvement.

"I have been very stressed and tired these last two weeks because I have been busy with my classes and responsibilities. I chose to use MELTApp when I got overwhelmed and bored while doing my homework. I observed that all three of them were good for my depression."
(P6- The second week's reflective log)

"I tried using Beginner's Mind when I found myself complaining that my life had become monotonous." (P7- The fourth week's reflective log)

"I used MELTApp for self-improvement, to increase motivation and support my self-confidence." (P9-The fifth week's reflective log)

The quotes provided indicate that MELTApp assisted participants in managing cognitive and emotional demands by providing them with resources to regulate their mental states, center their focus, and regain a sense of purpose. The application was a versatile tool for fostering psychological resilience and concentration, regardless of whether it was used to address boredom, academic stress, or the desire for self-improvement. Through participation in the app's exercises, the participants enhanced self-awareness, established personal objectives, and cultivated a sense of achievement. This indicates that MELTApp served not

only as a mindfulness instrument but also as a catalyst for personal development and emotional resilience across all facets of participants' lives.

Lastly, the category of *Others* (4 codes) included purposes such as language studies and gratitude practices. A few of the participants discovered that the app's functionalities extended beyond mindfulness, facilitating language learning and fostering grateful thinking.

“In my spare time in class, I study Spanish on Duolingo, and when I can't focus and make mistakes, I use simple meditation techniques that can be done in class. Even though this takes a few seconds, it helps me convince myself.” (P6-The third week's reflective log)

“While I was thinking about the things I didn't have in my life, with Gratitude practices, I realized that I had many things that I dreamed of 2 years ago. And I was filled with gratitude.” (P7- The fourth week's reflective log)

The statements indicate that MELTApp was regarded as a multifaceted tool that transcended its basic purpose, enabling users to incorporate it into diverse facets of their personal, academic, and professional lives. The participants did not view the app solely as an educational resource, but rather as a versatile support system that could be tailored to fit a variety of daily contexts, from managing stress during exam preparation to incorporating mindfulness into lesson planning and classroom routines. Its flexible structure allowed users to engage with the content in ways that met their individual needs and preferences, whether for relaxation, focus, or professional development. These collectively highlight the app's adaptability, relevance, and user-centered design, as well as the creative and purposeful ways in which participants interacted with the app to enhance both well-being and instructional practices.

4.3.3. Advantages and Benefits

The main category of *Advantages and Benefits* comprises 4 subcategories with 171 codes in total, referring to numerous advantageous aspects of using MELTApp. As per the subcategories, it is reflected that the most advantageous aspects of MELTApp are its *User-Friendliness* (108 codes), the chances it offers regarding *Professional Development* (27 codes), *Emotional Support* (18 codes), and *Variety of Activities* (18 codes). The subcategories are displayed in detail in Table 4.10.

Table 4.12. *The sub-categories related to the advantages and benefits of MELTApp*

Sub-categories	N*
<i>MELTApp has various advantages and benefits in terms of...</i>	
User-friendliness	108
Professional Development	27
Emotional Support	18
Variety of Activities	18
Total	171

N*: Number of Codes

As exhibited in Table 4.10., the most advantageous aspect of MELTApp was its *User-Friendliness* (108 codes). The participants valued the accessibility of the app on their phones, which rendered it a trustworthy tool even in the absence of an internet connection. This accessibility was regarded as very advantageous for both personal and professional purposes and it enabled the pre-service EFL teachers to interact with the application efficiently. MELTApp's interface, visuals, practicality, and clarity of instructions were the features that contributed to its perceived user-friendliness. The app was appreciated for being simple to navigate, visually engaging, and structured in a way that supported easy access to content. Participants highlighted features like the smooth transitions between widgets, organized layout, readable instructions, and interactive visuals such as the MELT light as enhancing both usability and mindfulness engagement. Some also appreciated the scientific grounding of the app, which they felt added credibility and made it easier to explain its benefits to others. Overall, the design was seen as intuitive and accessible, helping users engage with mindfulness practices effectively across personal and professional contexts. The statements below echo these findings:

"I found the app to be quite user-friendly. Navigating from one section to another is very easy. It is practical for everyone. The visuals are vibrant and effective." (P5- The first week's reflective log)

"I can find whatever I want easily, which is good because when an application is complicated, people lose motivation and become less interested. MELTApp is a simple and well-organized application, so I think everyone of every age can easily use it." (P6- The first week's reflective log)

According to P5 and P6, being able to effortlessly locate desired features was a contributing factor to a positive experience, as applications that are excessively complex

frequently result in a loss of motivation and interest. These observations suggest that MELTApp's user-friendly design significantly contributes to improving user engagement and accessibility. The software offers user interaction with its functions through a coherent structure, simple navigation, and visually appealing parts, thus reducing discomfort and misunderstanding. Other comments on the user-friendliness of MELTApp include:

"The advantages primarily revolve around its easy accessibility. Having a wide variety of activities and being just a phone away makes it beneficial for us as teachers. Additionally, the visuals used in the app are engaging and appealing." (P5- The third week's reflective log)

"I find the app useful because people almost always have their phones in their hands. Even without an internet connection, we still have our phones with us, making such an app easily accessible at any time. The fact that the app is readily available when I'm feeling down is one of the aspects that truly makes me happy." (P6-Interview)

As seen, P5 and P6 are for the idea that MELTApp is an easily accessible tool that will help them regardless of time and the Internet connection. Similarly, the app was seen as user-friendly due to its capacity to be personalized, which allowed users to tailor their experience based on individual needs and preferences, as noted in P13's interview statement, *"The Gratitude Zone. I really loved that part because it felt personal to us, which was especially nice. Also, being able to look back and see those beautiful things we felt that day was truly wonderful."* These expressions show that MELTApp's personalized design enabled users to discover mindfulness techniques that suited their specific tastes and made their experience more meaningful and engaging.

Moreover, the app's features were seen as fitting smoothly into various segments of a class and addressed the requirements of students and the dynamics of the classroom, as seen in the category of *Professional Development* (27 codes). Some participants stated that the app may be effectively employed in collaborative tasks or as a mechanism for controlling student involvement and concentration through exercises such as breathing techniques. Notably, several participants emphasized that MELTApp could be integrated into the teaching of all four core language skills, highlighting its flexibility and pedagogical potential. Their reflections are illustrated in the following statements:

"I think MELTApp is quite simple to integrate into the lesson. We have already tested this with the app in the lessons. As you know, in a class of 20 students, as long as everyone has a phone and clear instructions are provided, we have seen that it can be done collectively."
(P6-Interview)

As I said, I can integrate the approaches, meditation cards, and breathing exercises into every part of the lesson and every skill. I believe I will benefit from them a lot in my future teaching experience as well. (P8-Interview)

"I believe it can be easily integrated into every part, every section of the lesson. For instance, as I mentioned, if our class is very active, the app offers breathing exercises that we can use at the beginning of the lesson to prepare students, keep them engaged, and help them stay focused." (P11-Interview)

As mentioned by P6, P8, and P11, the participants had the opportunity to utilize MELTApp in their lessons and found it both practical and easy to incorporate into various teaching contexts and instructional stages. The inclusion of mindfulness-based tasks was perceived not only as supportive of classroom management and focus but also as a meaningful supplement to language teaching practices across all language skills. Given that mindfulness is still a new concept for many, having step-by-step guidance within the app was seen as a major benefit. P8 participant expressed that MELTApp's structured presentation of mindfulness principles made it easier to understand and apply, stating:

"Well, since this mindfulness concept is still relatively new to us, the app's presentation is quite useful. Teachers can look at it to understand how to apply mindfulness and use MELTApp, which provides guidance. I think it's really good, and it's also very practical for use in classrooms." (P8-Interview)

P8 signified that MELTApp offered professional assistance by serving as a practical and accessible resource for comprehending and using mindfulness in educational environments. The app's organized and intuitive design facilitated participants' understanding of essential mindfulness ideas and their incorporation into teaching methods more effectively. MELTApp provided the pre-service teachers with systematic guidance and practical resources, enhancing their professional growth and equipping them to cultivate a more aware and emotionally responsive teaching methodology. In a similar fashion, P12 described how the app helped maintain student engagement and focus, stating, *"We often lose*

control of the class; I have experienced this with eighth graders. When they get distracted, activities we have in MELTApp, especially unit-focused ones, help keep them engaged and on track with the content." in the interview. This highlights how MELTApp served not only as a personal mindfulness tool but also as a teaching resource that supported classroom management and lesson planning.

MELTApp also held merit in serving as an *Emotional Support* (18 codes) mechanism, offering pre-service teachers tools to manage stress, remain focused, and cultivate both self-awareness and self-confidence. Beyond its instructional content, the app provided a safe and supportive space where users could engage with mindfulness practices that addressed emotional well-being. Participants noted that MELTApp's features, such as affirmations, gratitude journaling, and calming visual and auditory prompts, contributed to their emotional regulation and overall mental resilience, particularly during stressful academic or teaching moments. P5 highlighted the motivational aspect of MELTApp, drawing a parallel between its features and positive reinforcement strategies encountered in previous educational settings:

"Motivationally speaking, I can say that techniques like breathing exercises, though not exactly in the breathing section, but rather in the MELTivation part—could be helpful. For example, motivational phrases or exercises can be displayed on classroom walls. Back when I was a high school student, our language class had similar motivational posters on the walls, and they really resonated with us. Such elements truly have the potential to boost motivation."
(P5-Interview)

This suggests that MELTApp's features helped users maintain motivation, build confidence, and reinforce a growth-oriented mindset. Likewise, the motivational affirmations embedded in the app also contributed to self-confidence and emotional resilience, as noted in P4's statement in the interview: *"MELTApp contains phrases designed to boost your confidence to its peak. For example, there are statements that encourage you to think, 'I am enough as I am,' or 'This is who I want to become.'"* This indicates that MELTApp functioned as a tool for both professional mindfulness practices and personal growth, fostering confidence, motivation, and self-reflection.

Lastly, the participants believed that MELTApp was also beneficial thanks to its *Variety of Activities* (18 codes), which included breathing exercises, guided meditation, sensory prompts, reflective journaling, and attitude-based practices. This subcategory reflects the app's ability to cater to different preferences, time constraints, and emotional needs. Participants appreciated the flexibility of choosing from shorter or longer activities, as well as the diversity in formats (e.g., visual, auditory). This variety helped maintain engagement and made the app adaptable for both individual use and classroom integration, as illustrated in the quotes below:

The advantage, as always, is that both the app itself and the activities within it are very easy and practical to use. Having a variety of options, available both visually and in written form, are features that significantly simplify our work." (P4- The third week's reflective log)

"When we think about it, the number and variety of activities are actually quite extensive. As I mentioned, we can create a reflective environment by incorporating elements such as an image they see, a sound, or even a scent." (P11-Interview)

P4 and P11's statements indicate how MELTApp encouraged creative and immersive mindfulness experiences, making the app more engaging for users. By integrating visual, auditory, and sensory elements, the app allowed for personalized reflection and deeper engagement with mindfulness practices.

All in all, the participants noted numerous major advantages of MELTApp, such as its ease of use, variety of activities, and easy pedagogical integration, which made it suitable for usage both personally and in classroom settings. The app also provided valuable emotional and professional support, assisting users in stress management and the successful application of mindfulness techniques in their personal and professional lives. Finally, its perspective-shifting quality prompted participants to reconsider and expand their understanding of mindfulness. These findings demonstrate MELTApp's usefulness as a practical and comprehensive tool for pre-service EFL teachers.

4.3.4. Suggestions and Challenges

The last main category was *Suggestions and Challenges* (54 codes). Notably, the majority of participants reported favorable expressions about MELTApp and stated that they widely consider the app accessible, user-friendly, and effective. This is shown in statements like P13's: "*There is no difficult point, MELTApp is quite accessible and easy.*" Notwithstanding the fact that most of the participants did not pinpoint any shortcomings, a few participants suggested areas for development or mentioned minor difficulties. As shown in Table 4.11., 28 codes were related to ideas for improvement, while 26 codes addressed specific difficulties.

Table 4.13. *The sub-categories related to Suggestions and Challenges*

Sub-categories	N*
<i>Participants had views regarding...</i>	
Suggestions for MELTApp	28
Challenges of MELTApp	26
Total	54

N*: Number of Codes

Suggestions for MELTApp (28 codes) generally emphasized the improvement of user experience through supplementary features, such as sound integration, dark mode, and notifications. The most commonly mentioned enhancement suggestion was the necessity for effectively increasing the sensory experiences. Participants contended that including environmental sounds could enhance immersion, rendering activities more engaging and authentic. These are echoed in the responses:

"I would like to have a sound button to describe the environment in the activities in the MELT Practices section. I think this will make students feel more like they belong in that environment." (P9- The fifth week's reflective log)

"Sample sounds can be integrated into the page for some situations along with meditation cards." (P12- The third week's reflective log)

P9 proposed the integration of a sound button into MELT Practices to articulate the activity setting, therefore enhancing students' sense of presence and connection. P12 suggested incorporating sample sounds into the meditation cards to enhance the mindfulness

experience through auditory components. The ideas reveal that participants appreciated a multimodal approach and considered that acoustic signals may augment mindfulness exercises and learning activities within the application.

In addition to sound integration, participants indicated a need for a Dark Mode option. During Breathing Exercises, P4 observed that the screen brightness remained very strong, despite adjustments to the settings, and asserted in the interview, *“While doing the Breathing Exercises, I found myself in a dark room and thought, “Wouldn’t it be nice if there were a Dark Mode?” The screen was very bright, and even though I adjusted the brightness, a Dark Mode could have made the experience more comfortable.”* The participants proposed that Dark Mode would enhance comfort, particularly in low-light conditions, hence increasing MELTApp's accessibility and user-friendliness across various locations. Another commonly proposed recommendation was the incorporation of a notification feature. Participants contended that reminders could assist users in sustaining consistency in their mindfulness practice. P5 indicated that notifications could serve as reminders for gratitude practices, encouraging people to contemplate their daily sources of gratitude:

“I think a notification feature can be added to the application. This notification can act as a reminder, reminding us of the things we are grateful for.” (P5- The fourth week’s reflective log)

The findings indicate that users were actively involved in pinpointing areas for enhancement and desired additions that would increase usability, accessibility, and the overall mindfulness experience within MELTApp. Their recommendations indicate a preference for a more tailored and engaging application that addresses varied needs and interests.

Pertaining to the *Challenges of MELTApp* (26 codes), some of the participants stated the density of theoretical knowledge, low text readability, low-quality images in some parts, and ambiguous navigation elements, such as arrows and buttons. One notable challenge that emerged was the overwhelming presence of theoretical content, particularly in the introductory sections of the app. While the scientific background and physiological explanations were designed to inform users about the mechanisms behind mindfulness, some

participants found this information to be overly detailed or abstract, leading to disengagement. This is exemplified in P15's comment:

"I found the initial part about the nervous system somewhat ineffective or too theoretical. To be honest, I got a bit bored during that section." (P15-Interview)

As P15 stated, MELTApp included the function of the nervous system in detail, which some participants found excessive or difficult to engage with. The presence of too much theoretical knowledge was perceived as a challenge, as it made certain sections feel less interactive and more lecture-like. Additionally, the participants asserted that the text readability in certain sections is low and requires improvement. This concern is reflected in the following statements:

"In the Meditation Oasis section, the text was not very legible. I believe an audio narration instead of text could be more reinforcing and relaxing." (P8- The first week's reflective log)

"In the 'Attitudes of Mindfulness' section, although the quality of the visuals is excellent, the text appears a bit blurry. I think it would be better if the text were clearer and sharper." (P11- The first week's reflective log)

As P8 and P11 mentioned, in the Meditation Oasis and Attitudes of Mindfulness sections, the images earned praise for their high quality, yet the text was regarded as unclear and difficult to understand. Participants indicated that augmenting font sharpness and clarity would improve readability and accessibility. Finally, the participants claimed that the appearance of the buttons was not clear and caused them to be confused about what to press. This issue is demonstrated as:

"First, after deciding to apply the attitudes, the arrow and continue options that appeared were not very clear. I found it a bit difficult to understand which one to press and for what purpose." (P7- The fourth week's reflective log)

P7's statement highlights a common usability challenge encountered during the use of MELTApp. Specifically, the participant refers to the "arrow" and "continue" buttons that appeared after selecting to apply one of the mindfulness attitudes, noting that it was unclear which button to press and what each button was intended to do. This confusion illustrates

how insufficient visual or textual guidance within the app interface can disrupt the user's flow and cause hesitation.

In sum, the findings regarding the MELTApp experiences demonstrate the numerous ways in which pre-service EFL teachers perceived and used the application. Based on the data, *Popular Widgets* was instrumental in promoting mindfulness practices by providing interactive and engaging features that were tailored to the diverse requirements of users. The *Usage Purposes* category highlighted how MELTApp was easily integrated into personal routines, academic tasks, and professional teaching techniques, which demonstrates its practical relevance in a variety of settings. Furthermore, the *Advantages and Benefits* highlighted the app's impact on users' emotional management, self-awareness, and pedagogical development. While the majority of responses were positive, the *Suggestions and Challenges* section highlighted areas for development, such as density of information, graphical clarity, and technical design features. These categories provide a rich understanding of the participants' experiences, demonstrating that, while MELTApp has significant promise as a digital mindfulness resource in teacher education, ongoing revisions based on user feedback are required to maximize its impact and usability. The subsequent figure depicts a comparison of the two primary categories and encapsulates the qualitative findings of the research in a diagram.

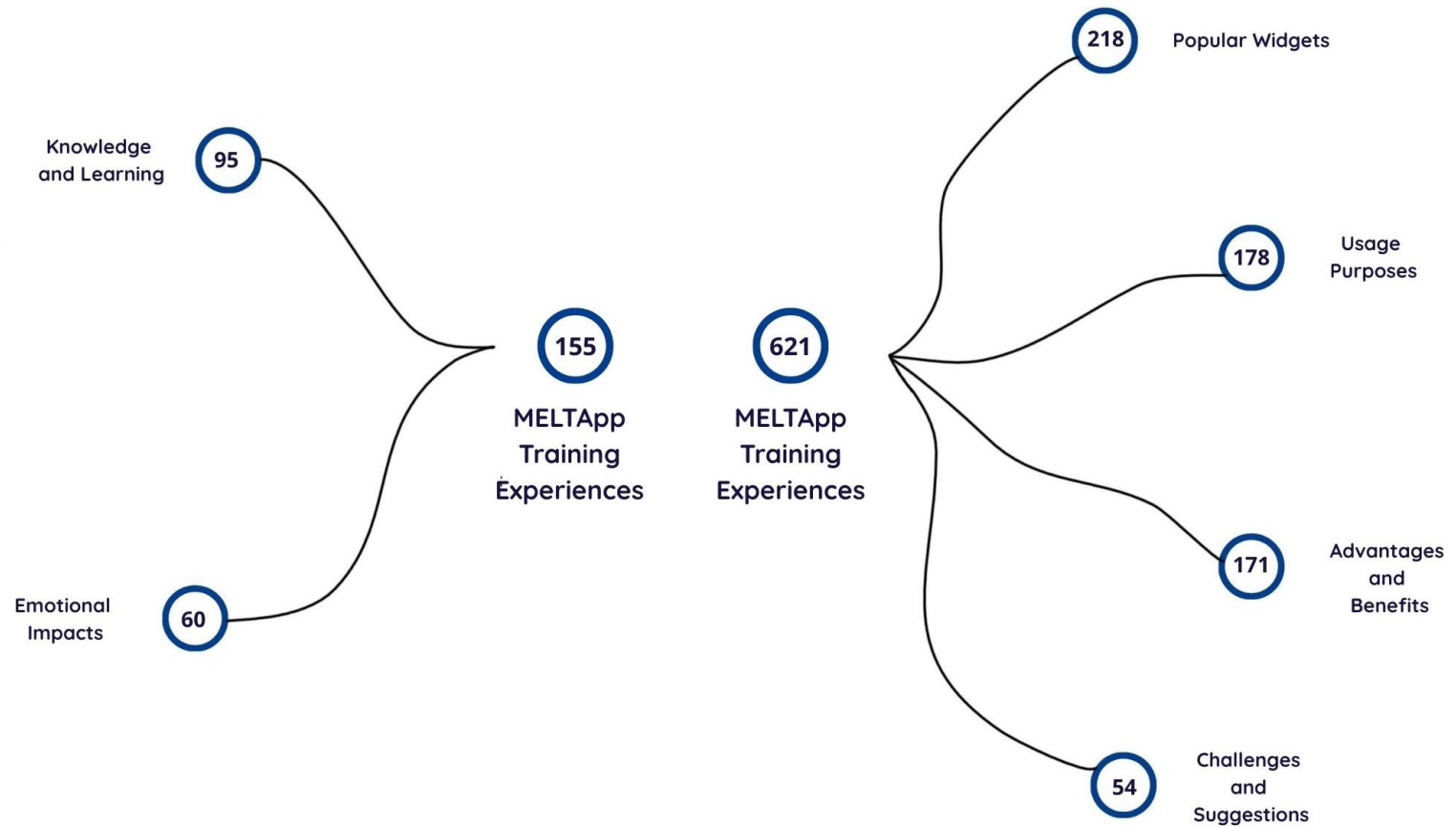


Figure 4.1. *Summary of the qualitative findings of the study*

CHAPTER 5

5.DISCUSSION

The primary purposes of this study were to discover pre-service EFL teachers' perceptions of MELTApp and the MELTApp training. Parallel to this, the study also sought to examine whether the training had any significant effect on the participants' mindfulness levels. In order to achieve these, the first research question intended to determine whether there was any impact of the training on the pre-service EFL teachers' mindfulness levels, the second research question aimed to unearth the participants' opinions of the MELTApp Training, and the third research question attempted to reveal participants' experiences of MELTApp. Given that no previous study has developed a mobile application for the integration of mindfulness into language classes and provided pre-service EFL teachers with training on its usage, the findings of the present research propose essential insights into the function of technology-integrated mindfulness in language teaching. This chapter presents the study findings with regard to the current literature.

The first research question of this study aimed to determine whether the MELTApp Training had any effect on the participants' mindfulness levels. Guided by Kabat-Zinn's (1994, 2013) conceptualization of mindfulness, particularly the foundational attitudes of acceptance, patience, and non-judgment, and Kuru Gönen's (2022) implications of the nine attitudes of mindfulness in language teaching, the training was designed to cultivate a more reflective and emotionally balanced approach to teaching and learning. The results of the pre- and post-tests employed in the study revealed that the training had a significant positive effect on the pre-service EFL teachers' levels of mindfulness. This indicates an improvement in mindfulness practices across the sample, confirming the MELTApp Training's effectiveness quantitatively. The qualitative results of the present study corroborated the substantial difference in the mindfulness states of the participants prior to and following the training, as visible in participants' expressions as well. For instance, P7 expressed how the training, particularly the attitudes of mindfulness, cultivated awareness: *"Overall, I thought this session was very informative and inspiring. It helped me understand how adopting these attitudes when practicing mindfulness can be effective in reducing stress and anxiety in daily life. On a positive note, I felt these attitudes increased my awareness and helped me feel*

calmer and more balanced.”. Similarly, P13 benefited from the attitudes of mindfulness and experienced their effect. She commented, “*I used the patience attitude on myself while doing one of my final papers. Because my homework was extremely challenging, my focus would shift to other places after a while. With the Patience approach, I was able to bring my focus back to the assignment and felt my awareness increase.*”. In this aspect, Kabat-Zinn (2013) underscores the importance of patience as a fundamental attitude in mindfulness. This attitude involves comprehension and acceptance that events proceed in their own time, which is essential for stress management and the improvement of overall well-being. These indicate that the participants’ mindfulness levels were boosted during the training, and a favorable shift occurred.

The statistically significant enhancement in participants' overall mindfulness levels post-MELTApp Training can be explored further by analyzing the individual variations across the five mindfulness facets. Notably, significant improvements were found in the *Observing* and *Describing* facets. The focus on bodily awareness, sensory engagement, and emotion labeling, as well as exercises like simple breathing and meditation cards that encouraged users to recognize and explain their inner experiences, may have caused these changes. Similarly, the *Acting with Awareness* facet showed significant improvement, which could be attributed to the repeated utilization of mindfulness practices in both the app and training sessions. This may have encouraged participants to anchor their attention in the present moment while performing everyday chores. Additionally, the training seems to have a favorable effect on the aspects of *Non-Reactivity to Inner Experience* and *Non-Judgment of Inner Experience*. Participants were progressively guided through weekly attitude-based training and reflective exercises to notice their thoughts and emotions without quick reactions or self-judgment. For example, adopting attitudes such as acceptance, patience, and non-striving may have mitigated severe self-assessments and enhanced emotional control. Considering these results, it might be assumed that the structure and content of both the MELTApp and MELTApp Training provided participants with conceptual understanding and practical strategies to enhance moment-to-moment awareness, emotional equilibrium, and self-compassion, collectively leading to elevated mindfulness levels.

The quantitative findings of this research align with previous research on mindfulness interventions for pre-service EFL teachers in that they exhibit a notable increase in mindfulness levels, indicating that a systematic mindfulness intervention serves as a catalyst for personal and professional development (e.g., Aslan Gördesli, 2022; Hue & Lau, 2015; Kerr et al., 2017; Waldman, 2020). This study's results are in accordance with prior research that has shown that mindfulness training leads to improved emotional regulation, reduced stress, and an overall sense of well-being. For instance, the findings of Lucas and Kerr (2018) and Poulin et al. (2008) demonstrate that mindfulness encourages relaxation and life satisfaction, which is consistent with the participants' observations of greater tranquility and self-awareness in the present study. Additionally, the reported enhancements in participants' professional development are consistent with the findings of Cochran and Peters (2023) regarding the increased efficacy of teachers as a result of mindfulness interventions. In the same vein, the applications of mindfulness attitudes by participants during academic tasks echo Waldman and Carmel's (2020) research findings, which demonstrated that mindfulness training enhanced the self-efficacy of EFL pre-service teachers in teaching writing by reducing anxiety and promoting cognitive clarity. Furthermore, the current study lends credence to Suganda et al.'s (2023) assertion that mindfulness interventions with mobile applications can substantially enhance cognitive engagement and mindfulness levels. The structured and interactive nature of MELTApp seems to be consistent with other technology-supported mindfulness training programs, which have shown statistically significant improvements in self-efficacy, well-being, and mindfulness (Hue & Lau, 2015; Waldman & Carmel, 2020). Nonetheless, MELTApp distinguishes itself from conventional delivery formats through its mobile accessibility, enabling participants to engage in mindfulness-enhanced language teaching activities consistently and at their own pace. The digital format of MELTApp facilitated self-regulated learning, provided on-demand access to language teaching materials, and allowed flexible incorporation into everyday routines, attributes that likely contributed to the sustained engagement noted during the training. This customized and flexible design embodied fundamental principles of efficient technology integration and likely enhanced the effectiveness of the mindfulness content.

Secondly, the experiences of pre-service EFL teachers about the 5-week MELTApp training underlined two primary issues related to the effects of the training procedure, namely its effects on *Knowledge and Learning* and *Emotional Impacts*. In terms of improvements in knowledge and learning, participants reflected on the informational content provided throughout the training. Many found the sessions to be instructive, illuminating, and beneficial in deepening their understanding of mindfulness practices, which they began to explore not only in professional contexts but also in their personal lives. What is more, the emotional impacts of the training captured how participants emotionally responded to the training process. They frequently described their experiences as calming, enjoyable, and mentally refreshing. In particular, the participants overwhelmingly viewed the MELTApp Training as beneficial and awareness-raising in terms of knowledge and learning. Numerous participants indicated that the training program offered them coherent, organized, and pragmatic knowledge that enhanced their comprehension of mindfulness and its use in educational contexts. One reason for this might stem from the fact that this was their initial encounter with mindfulness in a structured and methodical fashion; thus, the experience might be perceived as enlightening. The integration of academic frameworks and weekly practical assignments enabled them to integrate the fundamental concepts of mindfulness rather than engaging with the concepts at a purely theoretical level. This controlled exposure might have enhanced their understanding of the connectivity between thoughts, feelings, and behaviors, as well as the role of mindfulness in facilitating emotional regulation and teaching a foreign language (Charoensukmongkol, 2019; Choomchaiyo & Varma, 2021; Mortimore, 2017). Throughout the training, the participants developed an understanding of their mental and emotional processes and recognized how mindfulness could improve both their personal well-being and their pedagogical methods. In terms of being informative, the participants frequently mentioned the systematic and research-driven methodology for mindfulness presented during the sessions. A multitude of participants valued the chance to understand the scientific foundations of mindfulness, for example, its connection to the nervous system and hormones. This might have helped learners to contextualize mindfulness within a comprehensive educational and psychological framework. Overall, the MELTApp training might have been perceived as a positive experience as it translated abstract concepts into practical classroom resources, effectively

bridging the gap between theory and practice, and assisting pre-service teachers in establishing a robust basis for mindful language teaching.

In general, the participants described the sessions as pleasant and relaxing, attributing this to the structured yet flexible design of the training, which combined guided mindfulness practices with opportunities for self-reflection and learner autonomy. This balance between consistency and adaptability might likely have contributed to participants' emotional regulation and engagement, factors consistently highlighted in the literature as central to effective mindfulness-based interventions (Kerr et al., 2017; Hirshberg et al., 2020). For instance, P7 reflected, *"It was a productive and pleasant lesson as always. We saw different scenarios in pictures and in writing, and learned how to use them. I think it will be very useful to me in the future."* This statement illustrates how participants not only viewed the sessions as calming but also recognized their pedagogical applicability. Such responses echo findings from Suganda et al. (2023), who emphasized the dual role of mobile mindfulness applications in supporting both emotional well-being and instructional readiness among pre-service teachers. Furthermore, the visual and scenario-based elements mentioned by P7 align with Mayer's (2009) cognitive theory of multimedia learning, suggesting that incorporating diverse sensory stimuli into mindfulness training can enhance comprehension and retention. Overall, these insights underscore the emotional and cognitive value of embedding mindfulness into teacher education, fostering not only momentary calm but long-term professional competence. The results indicate that the five-week MELTApp Training program was both educational and awareness-raising for the participants. The training greatly enhanced their comprehension of mindfulness ideas and illustrated their practical application in language classes. Participants valued the organized yet flexible program, which encompassed theoretical instruction, practical activities, and systematic integration. The training was perceived by many as emotionally empowering, motivating, and calming, as it equipped them with the necessary tools to manage anxiety, improve their focus, and improve their overall emotional well-being. Interaction with colleagues and consistent reflective practices through the app and during the sessions enhanced the learning process, enabling participants to internalize and customize the mindfulness practices presented. Overall, it can be asserted that the MELTApp Training might have effectively facilitated cognitive and

emotional development, providing pre-service EFL instructors with the mindfulness knowledge and skills essential for supporting themselves and their future students.

The third research question was posed to explore pre-service EFL teachers' experiences with the use and integration of MELTApp. The examination of the qualitative data on the most popular widgets in MELTApp revealed that participants used a variety of features, each providing a particular mindfulness requirement and preference. *Breathing Exercises*, *Meditation Oasis*, *MELT Practices*, *Attitudes of Mindfulness*, and the *Gratitude Journal* were the widgets that were utilized the most frequently by the participants. This is a reflection of the various ways in which the participants expressed their engagement with the application. The results shed light on the ways in which these widgets assisted self-regulation, emotional awareness, and the integration of mindfulness in both personal and professional settings. With regard to the *Popular Widgets*, the participants regularly utilized the Breathing Exercises widget to help them relax their minds, better control their feelings of stress, and increase their ability to concentrate, which led to it becoming one of the most valued features. The exercises' comprehensive relevance was underscored by the fact that numerous participants reported engaging with them before sleep, during stressful moments, or in classroom settings. The implementation of breathing exercises for stress management underscores the necessity for pre-service teachers to be equipped with straightforward, embodied self-regulation techniques, consistent with the research of Meghanathi and Suresh (2024) and Örün et al. (2021) about the pedagogical efficacy of breathing exercises in high-pressure contexts. This indicates that mindfulness training, such as the MELTApp training, when structured around accessible bodily processes, can facilitate emotional regulation and attentional control in both personal and professional settings.

The results of the study indicated that sensory-rich experiences, such as the ones in the Meditation Oasis module of MELTApp, might have a facilitating effect on the participants' ability to remain present and modulate their emotions during periods of cognitive overload or anxiety. This finding demonstrates the crucial role of immersive, multi-sensory tools in facilitating emotional regulation, particularly for pre-service EFL teachers who are confronted with unpredictable classroom dynamics. Prior research has demonstrated that visual and auditory mindfulness aids enhance relaxation and increase engagement by

stimulating affective and attentional systems (Suganda et al., 2023; Hue & Lau, 2015). Participants' experiences with the Meditation Oasis in this study were consistent with the findings of Jain et al. (2007), which demonstrated that mindfulness meditation significantly reduced emotional distress and promoted positive mood states by interrupting ruminative and distractive thought patterns. Similarly, numerous studies in foreign language education have shown that meditation-based mindfulness practices positively influence both learners' and teachers' emotional regulation, attention, and classroom engagement (e.g., Charoensukmongkol, 2019; Fallah, 2016; Öz, 2017). In line with these findings, the current study revealed that meditation was among the most favored components of the MELTApp, as participants consistently reported its benefits in both personal well-being and professional teaching contexts. Furthermore, the MELT Practices widget was acknowledged for its pedagogical value, particularly for those who are interested in practical methods of incorporating mindfulness into their classes. The participants found it beneficial to have access to ready, structured practices that they could implement prior to teaching sessions in order to mentally prepare and alleviate apprehension. This is consistent with the notion that the implementation of sustainable practices in teacher education programs can be facilitated by the reduction of cognitive burden, the cultivation of teaching confidence, and the scaffolding of mindfulness through pre-designed activities (Jennings & Frank, 2015; Korthagen, 2017; Roeser et al., 2013; Waldman & Carmel, 2019). What is more, MELTApp was particularly commended for the clear distinction between practices intended for young learners and those for adults, as it enabled users to adjust mindfulness strategies to various age groups, a critical element of age-appropriate pedagogical planning.

The participants also placed importance on the Attitudes of Mindfulness and Gratitude Journal modules, which demonstrate the significance of self-reflection and emotional awareness in the practice of mindfulness. This observation is consistent with prior research which demonstrates that mindful journaling can serve as a meaningful pedagogical tool in mindfulness-based interventions, supporting both personal and educational development (Crawford et al., 2021). The participants also mentioned that affirmations were a useful feature, and they used it to support positive self-perception and motivation. Some of the participants mentioned using affirmations in educational settings in order to foster an

environment that is mindful and supportive for learning. Prior research on self-affirmation interventions in educational contexts has yielded mixed results. While some studies have reported positive outcomes such as reduced achievement gaps and enhanced academic performance (Easterbrook et al., 2021), others have failed to replicate these effects or found minimal benefits (Hanselman et al., 2016). A recent meta-analysis by Escobar-Soler et al. (2023) synthesized these findings and concluded that although the overall effect of self-affirmation interventions is modest, they may still be beneficial when adapted appropriately to specific learner contexts and needs. In the present study, the *Affirmations* module was among the most frequently used and appreciated widgets within MELTApp. Although the app did not include a standalone self-affirmation intervention, participants' responses suggested that exposure to affirming and encouraging messages contributed to emotional regulation and motivation. This outcome may reflect the contextual adaptation and multimodal nature of the affirmations presented in the app, features that potentially increased their relevance and resonance with pre-service teachers. Therefore, while the broader literature on self-affirmation remains inconclusive, this study highlights that when embedded within a larger mindfulness framework, affirmation-based content can meaningfully support users' emotional engagement and classroom preparedness.

The findings of the study pinpoint that the pre-service EFL teachers utilized MELTApp for diverse personal, professional, and educational purposes, which showcases its applicability and adaptability across various situations. That is, the participants frequently integrated MELTApp into their daily routines, emphasizing its practicality beyond professional settings. Many reported using the app to manage stress and improve emotional awareness, particularly during evening hours as part of their wind-down routine. What is more, mindfulness activities in MELTApp were often employed to interrupt ruminative thinking and facilitate sleep. These findings align with research showing that even brief mindfulness interventions can enhance sleep quality by reducing pre-sleep arousal and stress levels (Li et al., 2018; Caldwell et al., 2010). The systematic integration of MELTApp into participants' personal lives highlights its accessibility and perceived value as a daily tool for emotional regulation.

Beyond personal use, MELTApp played a significant role in participants' teaching practices, particularly during the practicum. They reported using the app to mentally prepare before teaching, manage anxiety, and maintain emotional stability in the classroom. The practicum is often an emotionally taxing experience for pre-service teachers (Li et al., 2023), and mindfulness-based interventions have been recommended to support emotional readiness and classroom performance (Alamri, 2018; Lucas & Kerr, 2018). The participants' reflections reinforce the role of MELTApp as a supportive tool in navigating the cognitive and emotional demands of real teaching experiences, echoing recent findings on the benefits of mobile mindfulness apps in pre-service language teacher education (Suganda et al., 2023). Many participants also reported using MELTApp to enhance concentration during academic work. Its short, structured exercises helped them regulate attention, reduce distractions, and manage cognitive fatigue. These findings echoed the findings of previous research on mindfulness-based cognitive training, which has been shown to improve executive functioning and attentional control (Jha et al., 2007; Kerr et al., 2017). For pre-service teachers managing multiple academic and teaching-related responsibilities, MELTApp served as a practical tool for sustaining focus and task engagement.

Relatedly, the app was often used during assignments to manage stress, increase motivation, and sustain clarity. Participants described how mindfulness activities supported their persistence during high-pressure academic tasks, particularly when overwhelmed. Similar patterns were observed in the literature that mindfulness activities can reduce academic stress by improving emotional regulation and cognitive flexibility (e.g., Gu et al., 2015; Sharma & Rush, 2014). Some participants engaged with MELTApp during monotonous or transitional periods, such as commuting or waiting. Although these moments were less frequently reported, their use suggests a growing internalization of mindfulness habits for various purposes. Practicing mindfulness during these low-demand times may contribute to long-term habit formation and an increased ability to stay present throughout the day.

The success of mobile apps is largely dependent on their content design, and well-organized material promotes regular use (Huddleston, 2017). The straightforward layout and sequential direction of MELTApp facilitated participant engagement, demonstrating

excellent design principles like vividness, feedback, and personalization (Kim et al., 2013). Participants valued the app's on-demand accessibility, which is consistent with research that emphasizes convenience as a critical factor in maintaining user engagement. Conventional UI approaches frequently prove insufficient for mobile applications, rendering user-friendly and intuitive design crucial (Subramanya & Yi, 2006). These requirements were satisfied by MELTApp's design, which improved usability. The incorporation of MELTApp into classroom procedures was also praised, with participants finding it simple to modify its activities across different teaching levels and the four language skills. MELTApp was esteemed not just for its structure but also for its diversity, motivational attributes, and practical applicability in classroom settings, illustrating how deliberate content and interface design may enhance engagement and instructional significance.

Pre-service EFL teachers have acknowledged MELTApp for its intuitive content design and efficacy in incorporating mindfulness into pedagogical activities. Participants stressed its intuitive interface, noting that its coherent layout, systematic organization, and effortless navigation enhanced accessibility and efficiency in the user experience. An organized interface is crucial in digital learning aids, as intuitive navigation minimizes cognitive overload and improves engagement (Nielsen, 2000). The capacity to seamlessly transition between various portions was especially respected since complex navigation frequently results in irritation and disengagement (Norman, 2013). The organized design of MELTApp enabled users to swiftly access mindfulness exercises and educational resources, corroborating research that indicates that straightforward, well-structured applications enhance user happiness and learning results (Dillon & Song, 1997). In addition to the interface, participants emphasized the significance of images in promoting mindfulness activities. Numerous users indicated that vibrant and high-resolution visuals augmented their experience with the app, rendering it more immersive and captivating. Visual components are crucial in digital learning settings, since they enhance memory retention, cognitive processing, and overall understanding (Mayer, 2009). Research suggests that appealing visuals enhance attentional focus and foster a more dynamic learning atmosphere (e.g., Sweller, 2010). This may explain why many participants in the current study emphasized the value of clear, high-resolution visuals in MELTApp, noting that such design features

increased their motivation, improved their comprehension of mindfulness practices, and contributed to a more engaging user experience.

Several participants identified low-quality visuals as a major negative, asserting that the images inadequately supported or aligned with the instructional content of MELTApp. Superior visual design has been shown to augment user engagement, especially in digital learning and interactive settings like tablet-based gaming (Kokil & Harwood, 2022). Moreover, aesthetic appeal significantly influences initial perceptions, users tend to regard applications as more usable and engaging when they are visually appealing, regardless of their actual usability (Chaparro & Phillips, 2009). In certain instances, effectively designed images can alleviate the adverse effects of inadequate usability by facilitating task completion and improving the overall experience (Moshagen et al., 2009). However, the relationship between perceived usability and visual design is not always clear; while appealing imagery can increase initial engagement, it does not consistently improve perceived usability in all circumstances (Kokil & Harwood, 2022). These insights elucidate why participants underscored the necessity for more sophisticated, high-resolution images inside MELTApp and indicate that augmenting the app's visual quality could markedly improve both engagement and user satisfaction. However, it is crucial to emphasize that despite the inexperience in the development of an educational mobile application, every effort was made to ensure that the content was rooted in well-established mindfulness theory and that it was pedagogically relevant. Although there is room for development in the areas of textual clarity and simplification, this version of MELTApp is a significant and early step in the integration of educational technology and mindfulness.

The participants suggested many design upgrades to augment usability and engagement, such as sound integration and a dark mode option. These recommendations correspond with optimal practices in educational technology and reflect a preference for enhanced personalization and accessibility (Kang & Namkung, 2019). Also, research indicates that consistent audio-assisted mindfulness sessions lead to diminished stress, enhanced well-being, and improved emotional regulation among diverse populations (Atreya et al., 2018; Robin et al., 2019; Yang et al., 2018). Although several studies indicate difficulty in integrating audio-guided mindfulness with other interventions due to possible

concentration issues (Cavallero et al., 2021), sound integration is generally recognized for enhancing mindfulness experience and sustaining participation. Another often-suggested feature was dark mode, which enables users to decrease screen brightness and eye strain. This feature is particularly advantageous for individuals who utilize mindfulness applications during their evening routines. The participants considered it crucial for comfort and accessibility. Research substantiates these inclinations, indicating that dark mode improves usability in low-light environments and corresponds with user comfort (Andrew et al., 2024). Nonetheless, its implementation is inconsistent, and developers frequently encounter design issues, including maintaining readability and selecting suitable color schemes (Ma et al., 2023; Yang et al., 2024). Notwithstanding these obstacles, dark mode remains a cherished attribute for enhancing digital encounters.

In brief, the core goals of the present study were to explore pre-service EFL teachers' experiences with the MELTApp training and MELTApp and assess whether the training resulted in a change in their mindfulness levels. The first research question sought to determine if the MELTApp Training had an effect on the mindfulness levels of pre-service EFL teachers. Quantitative results indicated significant enhancements in all five facets, namely, *observing, describing, acting with awareness, non-judging, and non-reactivity*. The improvements indicate that the systematic incorporation of mindfulness techniques, such as breathing exercises and meditation practices, might significantly influence participants' capacity to maintain presence, stabilize their emotions, and decrease reactivity to internal sensations. This demonstrates the potential for technology-supported mindfulness interventions to foster emotional control and cognitive clarity in aspiring teachers and is in line with the growing body of studies highlighting the efficacy of mindfulness interventions in educational settings.

The participant's interactions with the MELTApp were examined comprehensively. MELTApp was generally viewed as user-friendly, engaging, and beneficial for personal, academic, and professional use. The application's use was praised, particularly regarding its user-friendly design, systematic layout, and adaptability for everyday and professional purposes. Participants indicated that they used MELTApp not only for personal improvement but also integrated it into professional teaching contexts, indicating various benefits of

MELTApp, such as alleviating stress, enhancing concentration, organizing lesson planning, and addressing practicum-related difficulties. They recognized the emotional support provided by the app through its affirmations, breathing techniques, and meditation scenarios. Despite some design-related recommendations, such as augmenting images, strengthening textual clarity, and integrating features like audio instruction and dark mode, the app received an extremely favorable reaction overall. All in all, MELTApp was regarded as a multifaceted, seamlessly integrated digital resource that facilitated mindfulness cultivation both within and beyond the language classroom.



CHAPTER 6

6.CONCLUSION

This chapter outlines the conclusions derived from the findings of the study. It starts with a brief overview of the findings and an outline of the research, thereafter progressing to the principal conclusions. The following sections present the main conclusions derived from the study's findings, outline the pedagogical implications, and offer recommendations for future research based on the results.

6.1.Summary of the Findings

The current study sought to develop a mobile application named MELTApp with the aim of incorporating mindfulness into English language teaching, as well as to investigate whether the MELTApp training had a substantial impact on the participants' mindfulness level, and analyze pre-service EFL teachers' experiences and impressions of the MELTApp Training and MELTApp. To this end, 19 pre-service EFL teachers participated in the study. Over the course of five weeks, the participants received face-to-face MELTApp training and utilized the app in personal, academic, and professional settings. The data were gathered via a pre-post mindfulness questionnaire, weekly reflective logs, and semi-structured interviews. The quantitative data was analyzed using the Wilcoxon signed-rank test, while the qualitative data was examined with the Constant Comparison Method.

The eight-week study commenced with an introductory session that introduced MELTApp and the training to the pre-service EFL teachers. Participants completed consent forms, a demographic information form, and the Five Facets of Mindfulness Questionnaire using Google Forms. Weekly in-person MELTApp training sessions were conducted from the second to the sixth week, each focusing on a unique theme: "Mindfulness and Our Bodies", "Breathing Exercises", "Meditation Practices", "The Nine Attitudes of Mindfulness", and "MELT Practices." Following each session, the participants interacted with the relevant elements of MELTApp, completed a task to consolidate their learning, uploaded their work to a shared Google Drive folder, and wrote a reflective log. In the seventh week, the Five Facets of Mindfulness Questionnaire was re-administered to assess changes in mindfulness levels. In the final week, voluntary participants (n=11) took part in one-on-

one semi-structured interviews to gain deeper insights into their perceptions of the app and training process.

The quantitative findings revealed a statistically significant increase in participants' overall mindfulness scores following the training ($Z = -3.093$, $p < 0.01$), indicating the positive impact of the intervention. Notable improvements were observed in all of the five facets of the questionnaire, namely, Observing, Describing, Acting with Awareness, Non-judging of Inner Experience, and Non-reactivity to Inner Experience. These results suggest that the MELTApp training supported the development of multiple dimensions of mindfulness, enhancing participants' ability to attend to present-moment experiences, articulate internal states, regulate emotional responses, and approach thoughts and feelings with greater acceptance and awareness.

Qualitative data, gathered through reflective logs and post-training interviews, revealed a range of favorable experiences related to both the MELTApp Training and MELTApp. The participants' experiences of the MELTApp training were generally positive. Each themed session combined app-based tasks with reflective activities and was consistently described as informative, relaxing, and well-structured. The pre-service EFL teachers appreciated the explicit organization of the sessions, the scientific background of mindfulness, the practicality of the tasks, and the emphasis on reflection, all of which were viewed as instrumental in fostering both pedagogical insight and mindfulness.

What is more, the analysis yielded four main categories regarding MELTApp: *Popular Widgets*, *Usage Purposes*, *Advantages and Benefits*, and *Suggestions and Challenges*. The participants described the app as organized, practical, and accessible, with many citing increased self-awareness, emotional control, and stress management as key outcomes. The participants emphasized MELTApp's role in supporting their mindfulness practices both individually and professionally. The multimodal structure, with components like Breathing Exercises, Meditation Oasis, MELT Practices, Gratitude Journal, and Attitudes of Mindfulness, allowed for adaptable and engaging use across various contexts, including assignments, teaching practices, and daily routines. They noted that the app's structured layout and diverse content facilitated routine integration and supported self-awareness, stress relief, and emotional regulation. These features contributed to the app's perceived value in both personal and instructional settings, indicating its function as a multifaceted instrument

in pre-service teachers' lives. The findings collectively indicate that MELTApp significantly supported participants' personal and professional development, while shaping their views on integrating mindfulness into educational contexts.

While the participants generally viewed the app as favorable, some design-related issues were reported. Several users found the theoretical content overly dense and suggested more interactive or simplified delivery. Others cited technical concerns, including poor text legibility, unclear navigation buttons, and low-quality images, which at times hindered engagement. Participants recommended several enhancements, such as adding audio guidance for meditation, a dark mode to reduce eye strain, and reminder notifications to encourage consistent use, proposals that point to the importance of multi-sensory engagement in digital mindfulness tools.

Overall, this study demonstrated that a mobile application specifically designed for mindfulness-enhanced language teaching can support the integration of mindfulness into both personal routines and professional practices of pre-service EFL teachers. The participants' experiences reflect a growing recognition that mindfulness not only supports emotional regulation but also fosters reflective and resilient teaching. Through structured content, guided application, and reflective engagement, MELTApp enabled pre-service EFL teachers to internalize mindfulness principles in meaningful and context-relevant ways. While user feedback highlighted the need for design improvements, the overwhelmingly positive reception suggests that mobile tools like MELTApp hold strong potential for bridging theory and practice in teacher education. Future iterations may benefit from more adaptive content and multi-sensory features to maintain engagement. Ultimately, this study contributes to the expanding of literature by demonstrating that the systematic delivery of mindfulness-enhanced digital interventions can enrich pre-service language teacher education and promote holistic professional growth.

6.2. Conclusion

Given the overall results, it can be inferred that the MELTApp training and MELTApp had a beneficial impact on the participants' perceptions of incorporating mindfulness into language instruction. Although the training lasted only five weeks, it effectively promoted mindfulness among pre-service EFL teachers and offered the systematic integration of

mindfulness into language classes. The participants reported predominantly favorable opinions regarding both MELTApp and the training, valuing the app's practical design, diverse features, and applicability to personal and professional contexts. The qualitative and quantitative findings highlighted the effectiveness of mindfulness interventions in enhancing well-being, emotional regulation, and teacher efficacy (e.g., Hue & Lau, 2015; Suganda et al., 2023). Although there have been studies on mindfulness-based teacher training, to the best of the researcher's knowledge, no study has previously developed a mobile application that is specifically designed for Mindfulness-Enhanced Language Teaching (MELT) and investigated its integration through a structured training program in the Turkish EFL context. Consequently, this study makes a valuable contribution to the expanding body of mindfulness research in language teacher education by providing a practical digital tool and a hands-on training model that can be utilized to guide future interventions designed to improve the professional skills and personal well-being of EFL teachers.

The qualitative findings indicate that the participants held highly favorable views of the MELTApp Training and MELTApp. Aligned with the previous research endeavors underscoring the effectiveness of mindfulness-based interventions in teacher education (e.g., Hue & Lau, 2015; Suganda et al., 2023), the participants indicated improvements in emotional regulation, self-awareness, and focus during the five-week training period. The content and design of MELTApp have been described as accessible, organized, and user-friendly, facilitating participants' integration of mindfulness into their personal lives and future teaching practices. The participants particularly appreciated features like Breathing Exercises, Meditation Oasis, and Attitudes of Mindfulness, which facilitated emotional balance and offered practical tools for stress management. The findings echoed previous research findings indicating that mindfulness practices assist educators in managing classroom-related anxiety and enhancing their overall well-being (Poulin et al., 2008; Lucas & Kerr, 2018). The incorporation of task-based learning and reflective writing in the training enhanced participant engagement, helping to facilitate the implementation of mindfulness in language teaching and promoting reflection on professional development.

The participants' favorable opinions of the training and app regarding design, usability, and impact suggest that both elements played a significant role in fostering mindfulness-enhanced language teaching practices. Participants noted that the training structure, which

included weekly sessions, guided tasks, app-based exploration, and reflective logs, enhanced their theoretical understanding and provided practical strategies for implementation in classroom settings. The mobile tool received praise for its convenience and ease of access, providing mindfulness resources at any time and place. Most participants, as pre-service teachers, had minimal prior structured experience with mindfulness training. Consequently, the opportunity to engage with an open-access, mobile-supported resource like MELTApp was deemed highly beneficial and practical for real-world applications. The training addressed a deficiency in the current curriculum by providing tools for stress management, improving emotional awareness, and fostering classroom presence for pre-service EFL teacher education. The findings indicate that MELTApp and the training provided pre-service EFL teachers with significant exposure to mindfulness, transcending theoretical understanding and allowing them to perceive mindfulness as both a practice for personal well-being and a pedagogical strategy.

While the potential benefits and effectiveness of MELTApp and its associated training are suggested by participants' experiences, several limitations have been identified. The participants expressed appreciation for the structured content but pointed out obstacles, such as an excess of theoretical knowledge, unclear textual content, poor visuals, and difficulties with app navigation. The identified concerns suggest that although MELTApp offered practical and accessible mindfulness tools, specific design and content aspects may have constrained user engagement. To be clearer, it was seen that the theoretical sections were regarded as dense, likely due to insufficient interactivity or a lack of simplified explanations designed for novice users. Participants also indicated challenges with readability and low-resolution images, which adversely impacted their experience with the app. Several participants indicated a need for notifications to maintain consistent practice, highlighting a general interest in in-app features that facilitate habit formation. As a first-time app developer with no prior programming or design experience, the researcher encountered challenges in implementing complex technological capabilities and high-end visual design. This may clarify why features such as sound integration, dark mode, and more intuitive navigation, typically present in established wellness applications, were identified as missing components. The subsequent versions of MELTApp should incorporate collaboration with experienced

programmers to enhance usability, aesthetics, and user interaction, thereby better addressing the needs of language teachers and learners.

In conclusion, the MELTApp training and MELTApp offered diverse opportunities for pre-service EFL teachers to incorporate mindfulness into their personal and professional practices. While the training offered a guided explanation of the integration of MELTApp, MELTApp itself provided easily available and adaptable resources to cater to continued mindfulness practices for language teachers. The current study underscores the potential for integrating mindfulness via mobile technologies in teacher education programs, considering the positive outcomes and areas identified for improvement. This study advances the field by proving that teacher-researchers can launch successful initiatives that connect educational technology and well-being, even with limited technical knowledge. To further improve such initiatives, teacher-researchers may consider receiving basic training in developing technological platforms or collaborating with technical experts to ensure higher-quality outputs. Besides, future implementations must consider technical and pedagogical feedback from users to enhance functionality and engagement in educational mindfulness applications.

6.3.Implications

This study's findings yield various pedagogical implications for the integration of mindfulness in language teacher education. The data gathered from pre-service EFL teachers at a Turkish state university indicated the advantages and obstacles of integrating a mobile application such as MELTApp with formal mindfulness training. This study revealed that the implementation of mindfulness-based educational technology can enhance teacher candidates' personal and professional growth by improving their self-awareness, emotional regulation, and stress management abilities. Consequently, it is proposed that mindfulness-oriented applications such as MELTApp be further refined and tailored to meet the requirements of language teachers, language learners, and teacher educators across various educational settings.

While the general involvement with both the MELTApp training and app was pleasing, several individuals encountered difficulties in sustaining regular interaction, especially during academically demanding periods such as practicum commitments, graduation responsibilities, and concurrent coursework. These problems illustrate the significant

cognitive and emotional pressures frequently imposed on pre-service teachers toward the end of their studies. Consequently, one implication of the study is that mindfulness programs, particularly those utilizing digital resources, may be more effectively integrated if carefully scheduled within the teacher education curriculum to prevent coinciding with high-stress academic periods. Although the program constituted a graded course, individuals encountered challenges in reconciling mindfulness techniques with their current obligations. This indicates that the implementation of mindfulness training necessitates careful planning, organizational support, and an adaptable pace to align with the overall workload. While mindfulness fosters an intrinsic drive, initial scaffolding, emotional support, and structured assistance are essential for maintaining engagement, especially for those who are unfamiliar with mindfulness practices. This finding reflects on previous studies suggesting that successful mindfulness integration must be customized to the psychological preparedness of learners and the contextual requirements (Jennings et al., 2017; Meiklejohn et al., 2012).

This study proposes several pedagogical implications that highlight the importance of enhancing teacher education programs by equipping both pre-service and in-service teachers with the knowledge, tools, and practical strategies necessary to integrate mindfulness into their instructional practices. The findings revealed that many participants found the training beneficial and enlightening, despite having limited prior experience with mindfulness-based techniques. However, it also became evident that further practical training and experiential learning opportunities are essential to deepen their understanding and promote the sustainable application of mindfulness in educational settings. For pre-service teachers, structured professional learning opportunities such as semester-long elective courses, multi-week training modules, or integrated workshops within methodology courses may provide both theoretical background and hands-on experience. These sessions could include the use of digital tools like MELTApp, classroom simulations, collaborative peer discussions, and reflective journaling practices. For in-service teachers, targeted professional development programs such as institution-wide workshops, mindfulness-based seminars, and certified MELT training sessions can support the ongoing integration of mindfulness into existing teaching practices. These programs should be designed to include context-specific examples, age-appropriate adaptations, and guidance on incorporating mindfulness into curriculum design and classroom management. Additionally, both pre-service and in-service teachers

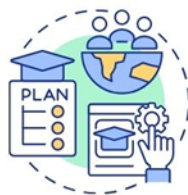
should be familiarized with a range of mindfulness-based educational platforms and digital tools that can be adapted to suit the emotional and developmental needs of their learners. Within the MELT framework, participants emphasized the value of age-appropriate and accessible mindfulness activities for both children and adults, underlining the importance of context-driven design in mindfulness resources for diverse educational environments. Moreover, teacher educators and curriculum developers must recognize that although mindfulness can serve as an effective pedagogical instrument, its successful incorporation necessitates technology proficiency and deliberate instructional design. This study indicates that teacher-researchers lacking prior programming or app development skills can nevertheless contribute to the area by collaborating with developers, utilizing no-code platforms, or receiving training in educational technology design. Teacher training programs may incorporate fundamental instruction on the construction and assessment of digital technologies to enable teachers to customize or create resources suited to their classroom requirements. MELTApp exemplifies the integration of educational technology and well-being, achievable even with minimal technical proficiency, by incorporating user input, pedagogical principles, and contextual requirements in its design and execution. This study affirms that teachers and researchers may accelerate educational innovation by developing practical, research-based instruments for teacher education. Further, policymakers and administrators can play an essential role by ensuring access to mindfulness-integrated teaching materials through investment in infrastructure, resources, and national training projects that make tools like MELTApp available to both public and private institutions. Supporting teacher access to digital devices, app licenses, and related workshops will significantly strengthen the long-term success of such programs.

The positive feedback regarding MELTApp's content design and accessibility also suggests that digital tools that are based on mindfulness need to be pedagogically meaningful, visually engaging, and user-friendly. Participants frequently underscored the significance of high-quality visuals, readable text, and a clean interface in order to maintain their interest and engagement with the application. The findings highlight the necessity for educational applications to adhere to universal design principles to minimize cognitive load and improve user satisfaction. Also, the incorporation of multimedia elements, including audio guidance, affirmations, and gratitude journals, received positive feedback from users. This suggests that

a multimodal approach may effectively address varied learner preferences and enhance emotional engagement in mindfulness practices. Teacher education programs seeking to implement similar interventions should emphasize multimodal content delivery to accommodate diverse learning styles and enhance the effectiveness of mindfulness instruction. Additionally, coursebook writers and publishers could adopt this innovative approach by embedding mindfulness-integrated content into their materials, both print and digital, thus reaching wider populations of learners and teachers and promoting holistic learning environments.

This study contributes to the existing body of literature by demonstrating the advantages of integrating mindfulness into education via technology in pre-service language teacher education. This underscores the necessity of incorporating these programs into curricula, enhancing teacher training in mindfulness and educational technology, and developing user-centered digital tools. Language educators and researchers can improve the emotional and professional well-being of future teachers while providing them with innovative tools and strategies to support learners in complex and demanding educational environments. The implications of this study radiate beyond individual teacher development, indicating a broader objective of fostering mindful school cultures that support the flourishing of both teachers and learners. Figure 6.1. presents an outline of the implications of the study.

Curriculum Designers & Decision-makers



- Integrating structured mindfulness training and app-based interventions like MELTApp into pre-service language teacher education curricula
- Scheduling mindfulness programs during low-stress academic periods to optimize participation and benefits
- Providing institutional and technological support to facilitate sustainable use of digital mindfulness tools
- Encouraging teachers/researchers to collaborate with programmers to create practical, pedagogy-driven digital tools.

Pre-service EFL Teacher Education



- Offering elective courses, workshops, or seminar series on mindfulness in education and digital mindfulness tools
- Guiding teacher candidates in applying mindfulness to lesson planning, classroom management, and practicum experiences
- Supporting the use of tools like MELTApp to cultivate personal mindfulness habits and explore classroom applications
- Facilitating peer discussion and reflective practices to promote sustainable and context-aware mindfulness use

In-service EFL Teacher Training



- Promoting professional development through structured training on mindfulness practices and digital mindfulness tools
- Supporting emotional well-being and classroom effectiveness in high-pressure teaching contexts
- Introducing practical, user-friendly apps like MELTApp to foster independent practice
- Building communities of practice around mindful pedagogy and digital integration

Coursebook Writers & Publishers



- Embedding mindfulness-informed content into language teaching materials, both in print and digital formats
- Designing activities that integrate mindfulness practices with language skills to foster emotional engagement and reflective learning
- Collaborating with educators and researchers to produce level-appropriate, classroom-tested mindfulness resources
- Publishing supplementary teacher guides and student workbooks that model mindfulness integration in diverse ELT contexts

Figure 6.1. *The outline of the implications of the study*

6.4. Suggestions for Future Research

The current study's findings shed light on the utilization of MELTApp and the implementation of its training and their effects on pre-service EFL teachers' mindfulness levels and experiences. The study reveals participants' perspectives on the app and training while also emphasizing pedagogical implications and identifying areas for further research. In light of these findings, several recommendations for future research are presented.

More research on mindfulness-enhanced language teaching with larger participant samples is suggested in a variety of educational settings. Longitudinal studies extending over a semester or academic year can provide valuable insights into the effects of sustained exposure to mindfulness tools such as MELTApp on teachers' well-being, classroom practices, and mindfulness development over time. Future research may benefit from the implementation of delayed post-tests to assess the long-term effects and retention of mindfulness practices introduced via mobile-based training. Also, future studies could enhance their findings by employing a wider array of data collection methods, including teacher field notes, classroom observations, and think-aloud protocols, to obtain a more detailed understanding of the application and experience of mindfulness in teaching environments.

Although this study primarily included senior pre-service EFL teachers, future research could investigate the effects of MELTApp and mindfulness-based training programs across various stages, as well as in international or multicultural teaching contexts. Comparative studies across educational levels or between novice and experienced teachers may elucidate the impact of age, experience, and teaching context on the effectiveness and reception of mindfulness training. Examining the relationship between mindfulness and various affective and cognitive factors, such as teaching anxiety, emotional exhaustion, learner autonomy, motivation, and instructional self-efficacy, may yield a comprehensive understanding of mindfulness's role in teacher development.

Future research might also investigate integrating MELTApp into language teaching curriculum and examining how structured and technology-enhanced mindfulness education inclusion could enhance results, consistency, and engagement. This study was conducted during a demanding academic period with practicum obligations and graduation pressures. Incorporating mindfulness practices into mandatory coursework in less anxiety-provoking

time periods could provide more enduring support. Furthermore, the participants proposed various design enhancements, such as sound integration, dark mode, and notifications. MELTApp could be further developed to support specific language skills such as speaking and writing, which are often described as anxiety provoking, by incorporating tailored mindfulness activities that range from general foreign language learning strategies to skill specific idea generation tasks. Future research could investigate the impact of these features on user engagement and learning outcomes. Researchers may explore the potential of adaptive or personalized features within the app to address diverse user needs and educational contexts.

Future research should not only focus on enhancing pre-service teacher education but also investigate the systematic application of MELTApp training for in-service teachers. In-service educators frequently encounter ongoing stress, emotional exhaustion, and difficulties in classroom management. Therefore, incorporating structured mindfulness interventions into professional development programs could enhance their well-being and teaching effectiveness. Longitudinal research can investigate the impact of MELTApp-based mindfulness training on in-service language teachers' emotional regulation, resilience, and instructional practices over time. Incorporating this training into official in-service teacher development frameworks, such as workshops, institutional seminars, or continuous professional development, can enhance accessibility and promote sustained engagement. Examining the adaptability of MELTApp across different educational levels, such as K-12 and higher education, as well as its alignment with diverse institutional cultures, would yield valuable insights regarding its scalability and flexibility. Additionally, research may investigate the impact of enhanced teacher mindfulness on classroom climate, student engagement, and learning outcomes, thereby fostering a more comprehensive and emotionally supportive educational setting. Equipping in-service teachers with guided, research-based mindfulness tools such as MELTApp may promote personal development and enhance pedagogical practices.

Finally, future research could address the challenges identified in this study to further improve the usability and efficacy of mindfulness applications in educational settings. For example, deeper engagement may be facilitated by enhancing visual and aural design, optimizing navigation, and improving content clarity. Future iterations of MELTApp could

integrate videos, real-life teaching scenarios, and classroom-based applications, as some participants found the theoretical content overwhelming and requested more practical and interactive guidance. Additionally, researchers may examine the comparative effectiveness of various mindfulness delivery methods (e.g., synchronous versus asynchronous, app-based versus in-person) in the context of language teacher education. Collectively, future research has the potential to enhance our comprehension of the ways in which mindfulness-based mobile applications can facilitate the integration of emotional resilience into educational practices, as well as the instructional effectiveness and well-being of teachers.



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APPENDICES

APPENDIX-A. Sample Consent Form

GÖNÜLLÜ KATILIM FORMU

Bu çalışma, “Bilinçli Farkındalıkla Zenginleştirilmiş Dil Öğretimi Mobil Aracının Tasarımı ve Kullanımı Üzerine Bir Çalışma: Hizmet Öncesi İngilizce Öğretmenlerinin Algıları” başlıklı bir araştırma çalışması olup bilinçli farkındalıkla zenginleştirilmiş dil öğretimi bağlamında bir mobil araç tasarlamak, bu mobil araç hakkında hizmet öncesi aday İngilizce öğretmenlerine eğitim vermek ve onların bu uygulamayı kullanma sürecine dair tecrübelerini ve algılarını belirleme amaçlarını taşımaktadır. Çalışma, Dicle Sarıkaya ve Doç. Dr. S. İpek Kuru Gönen tarafından yürütülmekte ve sonuçları ile bilinçli farkındalıkla zenginleştirilmiş dil öğretimi uygulamalarının teknoloji entegrasyonu ile gelişimine ışık tutulacaktır.

- Bu çalışmaya katılımınız gönüllülük esasına dayanmaktadır.
- Çalışmanın amacı doğrultusunda, yansıtma sorularına cevap vermeniz istenerek sizden veriler toplanacaktır.
- İsmınızı yazmak ya da kimliğinizi açığa çıkaracak bir bilgi vermek zorunda değilsiniz/araştırmada katılımcıların isimleri gizli tutulacaktır.
- Araştırma kapsamında toplanan veriler, sadece bilimsel amaçlar doğrultusunda kullanılacak, araştırmanın amacı dışında ya da bir başka araştırmada kullanılmayacak ve gerekmesi halinde, sizin (yazılı) izniniz olmadan başkalarıyla paylaşılmayacaktır.
- İstemeniz halinde sizden toplanan verileri inceleme hakkınız bulunmaktadır.
- Sizden toplanan veriler korunacak ve araştırma bitiminde arşivlenecek veya imha edilecektir.
- Veri toplama sürecinde/süreçlerinde size rahatsızlık verebilecek herhangi bir soru/talep olmayacaktır. Yine de katılımınız sırasında herhangi bir sebepten rahatsızlık hissederseniz çalışmadan istediğiniz zamanda ayrılabilirsiniz. Çalışmadan ayrılmanız durumunda sizden toplanan veriler çalışmadan çıkarılacak ve imha edilecektir.

Gönüllü katılım formunu okumak ve değerlendirmek üzere ayırdığınız zaman için teşekkür ederim. Çalışma hakkındaki sorularınızı Yıldız Teknik Üniversitesi Yabancı Diller Eğitimi Bölümünden Dicle Sarıkaya’ya yöneltebilirsiniz.

Araştırmacı Adı : Dicle Sarıkaya

Adres:

Cep Telefonu

E-posta:

Bu çalışmaya tamamen kendi rızamla, istediğim takdirde çalışmadan ayrılabilceğimi bilerek verdiğim bilgilerin bilimsel amaçlarla kullanılmasını kabul ediyorum.

Katılımcı Ad ve Soyadı:

İmza:

Tarih:

APPENDIX-B. Demographic Information Form

Demografik Bilgi Formu

B *I* U  

Sevgili Katılımcılar,
Bu çalışma, Anadolu Üniversitesi Lisansüstü Eğitim Enstitüsü Yabancı Diller Eğitimi Anabilim Dalı Tezli Yüksek Lisans programındaki bir Yüksek Lisans Tezi kapsamında yürütülmektedir. Bu formda vereceğiniz yanıtlar kesinlikle üçüncü şahıslarla paylaşılmayacaktır ve verileriniz bilimsel bir araştırma için kullanılacaktır. Verdiğiniz içten yanıtlar ve katılımınız için teşekkür ederiz.

Arş. Gör. Dicle Sarıkaya
Yıldız Teknik Üniversitesi
Eğitim Fakültesi
İngilizce Öğretmenliği Bölümü

Doç. Dr. S. İpek KURU GÖNEN/Tez Danışmanı
Anadolu Üniversitesi
Eğitim Fakültesi
İngilizce Öğretmenliği Bölümü

Tüm sorularınız için diclesrky@gmail.com adresinden iletişim kurabilirsiniz.

**Bu çalışmaya tamamen kendi rızamla, istediğim takdirde çalışmadan ayrılabilceğimi bilerek *
verdiğim bilgilerin bilimsel amaçlarla kullanılmasını kabul ediyorum.**

☐ Evet

☐ Hayır

Adınız-Soyadınız *

Short answer text

Yaşınız *

Short answer text

Cinsiyet *

☐ Kadın

☐ Erkek

Uygulama öğrenciliğinizi (stajınızı) hangi düzeyde yapıyorsunuz? *

☐ İlkokul

☐ Ortaokul

☐ Lise

Sınıfllarınızda ortalama mevcut ne kadar? *

- ☐ 15 öğrenciden az
- ☐ 15-25 öğrenci arası
- ☐ 25 öğrenciden fazla

Öğrencilerinizin İngilizce dersine karşı ilgili/yüksek motivasyonlu olduğunu düşünüyor musunuz? *

- ☐ Kesinlikle Hayır
- ☐ Kısmen Hayır
- ☐ Kararsızım
- ☐ Kısmen Evet
- ☐ Kesinlikle Evet

Sizce öğrencilerinizin İngilizce dersine yönelik daha ilgili/motivasyonlu olmaları için program dışı/ders kitabı içeri dışında etkinliklerin kullanılmasına ihtiyaç var mı? *

- ☐ Evet
- ☐ Hayır
- ☐ Kararsızım

İNÖ471-İngilizce Öğretiminde Bilinçli Farkındalık Uygulamaları dersinden önce bilinçli farkındalık kavramına aşina mıydınız? *

- ☐ Evet
- ☐ Hayır

Bir önceki soruya 'Evet' yanıtını verdiyseniz kısaca bu kavram hakkında bildiklerinizi yazınız. *
"Hayır" yanıtını verdiyseniz 'Yok' yazınız.

Long answer text

Bilinçli Farkındalık (Mindfulness) pratiklerini (nefes, meditasyon, konsantrasyon, vb.) günlük hayatınızda uyguluyor musunuz? *

- ☐ Evet
- ☐ Hayır

Bir önceki soruya 'Evet' yanıtını verdiyseniz nasıl pratikler uyguladığınızı kısaca yazınız. "Hayır" *
yanıtını verdiyseniz 'Yok' yazınız.

Long answer text

Teknoloji destekli "bilinçli farkındalık ile zenginleştirilmiş dil öğretimi" kavramının eğitim/ *
öğretim ortamlarında kullanımı hakkında bilginiz var mı?

☐ Evet

☐ Hayır

Bir önceki soruya 'Evet' yanıtını verdiyseniz kısaca bu konu hakkında bildiklerinizi yazınız. *
'Hayır' yanıtını verdiyseniz 'Yok' yazınız.

Long answer text

Daha önce bilinçli farkındalığa dair bir mobil uygulama kullandınız mı? *

☐ Evet

☐ Hayır

Yukandaki soruya yanıtınız "Evet" ise, hangi mobil uygulamayı kullandığınızı belirtiniz.

Short answer text

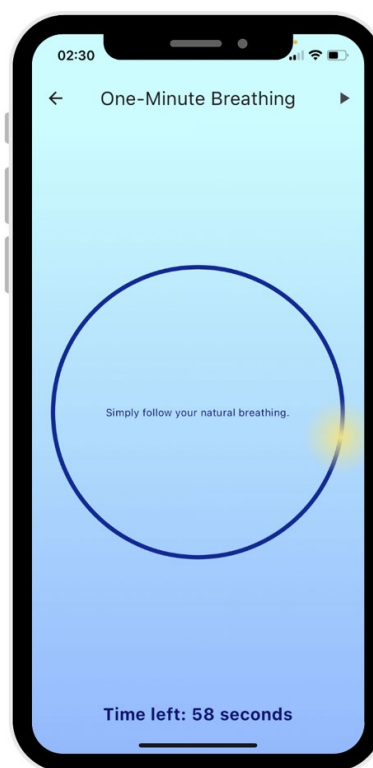
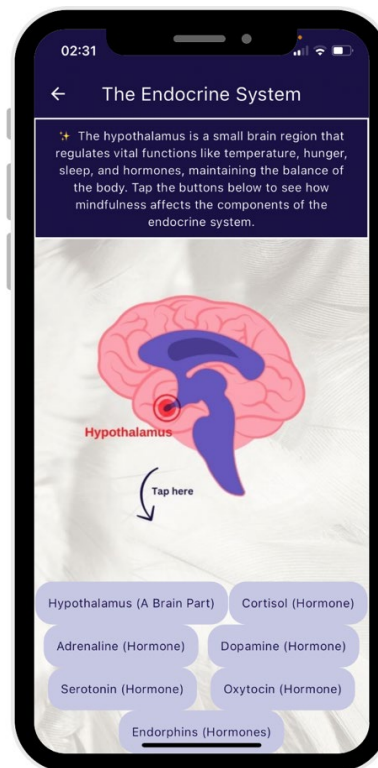
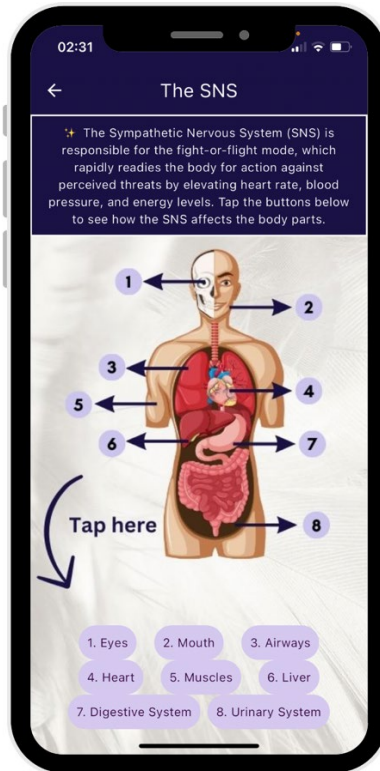
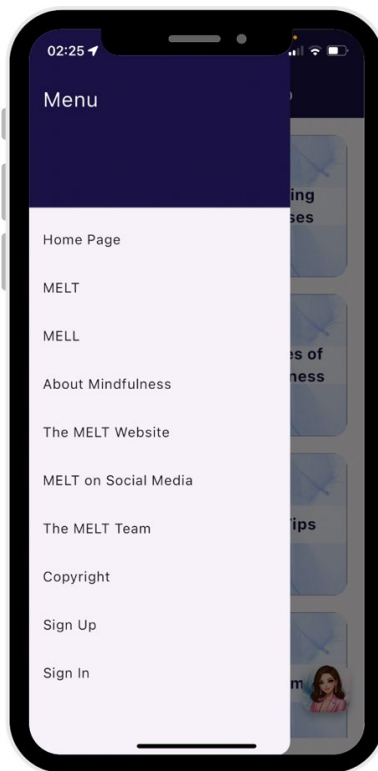
Telefonunuzun işletim sistemini (iOS/Android) belirtiniz. *

Short answer text

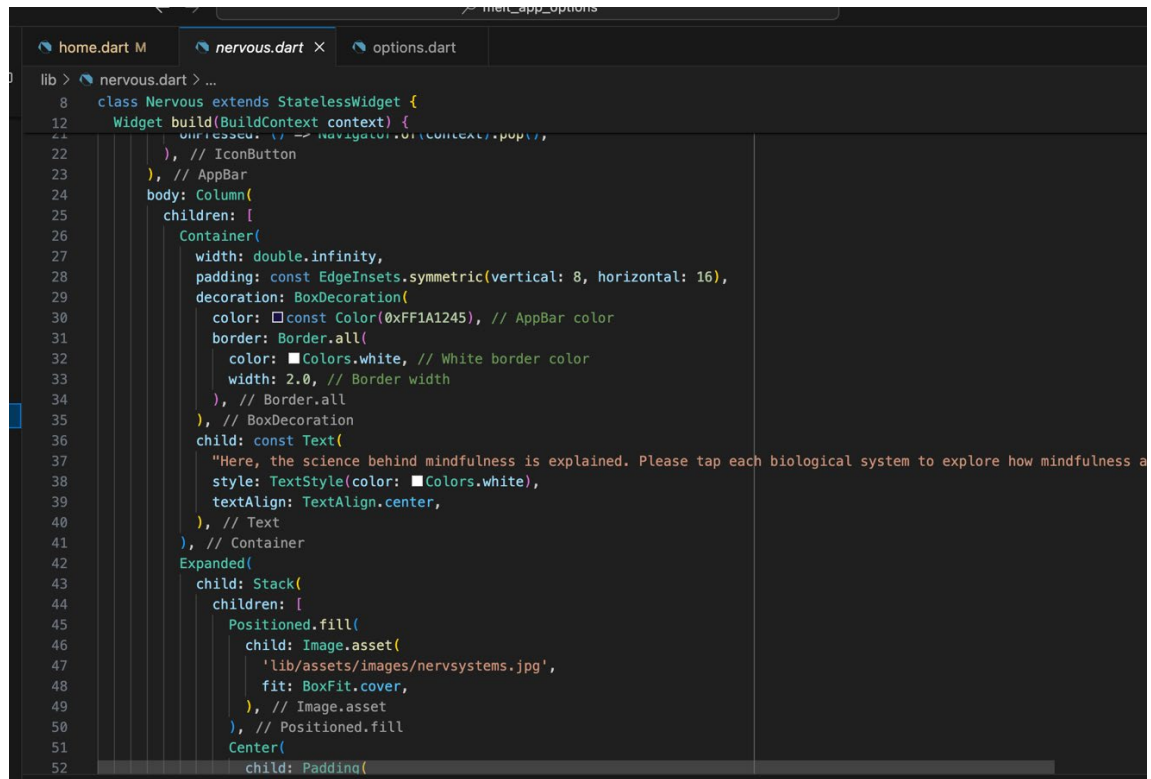
E-posta adresiniz *

Short answer text

APPENDIX-C. Sample screenshots from MELTApp



APPENDIX-D. The Sample Coding System of Mindfulness and Our Bodies



```
lib > nervous.dart > ...
8   class Nervous extends StatelessWidget {
12   Widget build(BuildContext context) {
22   }, // IconButton
23   ), // AppBar
24   body: Column(
25     children: [
26       Container(
27         width: double.infinity,
28         padding: const EdgeInsets.symmetric(vertical: 8, horizontal: 16),
29         decoration: BoxDecoration(
30           color: const Color(0xFF1A1245), // AppBar color
31           border: Border.all(
32             color: Colors.white, // White border color
33             width: 2.0, // Border width
34           ), // Border.all
35         ), // BoxDecoration
36         child: const Text(
37           "Here, the science behind mindfulness is explained. Please tap each biological system to explore how mindfulness a
38           style: TextStyle(color: Colors.white),
39           textAlign: TextAlign.center,
40         ), // Text
41       ), // Container
42       Expanded(
43         child: Stack(
44           children: [
45             Positioned.fill(
46               child: Image.asset(
47                 'lib/assets/images/nervsystems.jpg',
48                 fit: BoxFit.cover,
49               ), // Image.asset
50             ), // Positioned.fill
51             Center(
52               child: Padding(
```

APPENDIX-E. Privacy Policy

Privacy Policy for MELTApp

Effective Date: [30.03.2024]

Welcome to MELTApp, specially tailored for language teachers to integrate mindfulness into their teaching and personal lives. This Privacy Policy details our practices regarding the collection, use, safeguarding, and handling of your personal data within our app.

Information Collection and Use

To enrich your experience and provide personalized services, MELTApp collects the following data:

- **Email Address:** Utilized for communication with users and account management purposes.
- **Username:** Enables a customized user experience within the app.

This data collection supports the provision of customized mindfulness exercises and practical insights for language teaching.

Data Storage and Security

Your personal data, including email addresses and usernames, is securely stored within Firebase. We have established stringent protocols to:

- Ensure that entries in the "Gratitude Zone" remain confidential and are not accessible to other users.
- Guarantee that contributions to the Community Page are visible and interactive solely for our registered community.

Protecting your data is our top priority. We adopt best practices in data security to shield your information against unauthorized access, use, or disclosure.

User Interaction

The Community Page offers a platform for users to connect by liking and commenting on posts, fostering a collaborative and supportive environment for language educators.

Third-Party Services

MELTApp is committed to your privacy. We do not share your personal data with any third-party services, ensuring your information is used solely to enhance your app experience.

Audience

MELTApp is designed for adult users, specifically targeting language teachers interested in incorporating mindfulness into their educational methods.

Policy Updates

We may revise this Privacy Policy to reflect changes to our data practices or for other operational, legal, or regulatory reasons. Updates will be promptly communicated via the description of the app on the iOS App Store, keeping you well-informed.

Contact Information

Should you have any inquiries about this Privacy Policy or your personal data, please contact us at mindfulnessined@gmail.com. Your privacy concerns are important to us.



APPENDIX-F. Tasks of the MELTApp Training

WEEK 1: MINDFULNESS AND OUR BODIES

In this assignment, you are expected to engage in the “Mindfulness and Our Bodies” part of MELTApp. Read the instructions carefully and fill the related table. You can add more rows to your table.

Here are the steps to be followed:

1. Interactive Exploration:

- Use the app to review the effects of mindfulness on the peripheral, respiratory, and endocrine systems, as well as brain and its components. Tap each part of the systems to see the details.

2. Practicum Observation:

- During your practicum, choose a student. Observe his or her behaviors, bodily reactions, and so forth in specific moments, such as answering questions, presentations and exams. Pay special attention to moments that might indicate stress, anxiety, or lack of focus among students. You can also underline the moments that depict relaxation and happiness.
- Without intervening, try to indicate which system of the peripheral nervous system is activated and reflect on how mindfulness practices could potentially benefit these observed situations. Consider how exercises aimed at calming the nervous system, improving respiratory efficiency, or balancing the endocrine system might influence classroom dynamics and student well-being.

3. Mindful Reflection and Planning:

- After your observations, reflect on the specific instances where mindfulness could be integrated into classroom routines. How might brief mindfulness exercises at the beginning of the class, after revisions, or before tests impact student behavior and engagement?

Keeping the steps in your mind, fill in the table below and upload it to the drive folder provided under it:

Young Learner or Teenager?	Trigger (e.g. question answering, presentation ...)	Bodily Reactions	Possible Peripheral Nervous System Activated	How can the MELT practices affect these bodily changes?	When can these MELT practices be used (at the beginning, in the middle, etc.)?

Click [here](#) or use this link to the drive folder:

https://drive.google.com/drive/folders/1aFBnA_zKsUUaTf93bYZXIB291bKNqxKR?usp=sharing

WEEK 2: BREATHING EXERCISES

In this assignment, you are expected to engage in the “Mindfulness and Our Bodies” part of MELTApp. Read the instructions carefully and fill the related table. You can add more rows to your table.

Here are the steps to be followed:

1. Exploration:

- Use MELTApp to practice the breathing exercises on your own and prepare for your upcoming lesson. Tap each exercise to see the details.

2. Pre-practicum:

- Before your practicum, go to MELTApp and choose a breathing exercise. You can choose a card or the MELT Light to practice the breathing exercise on your own. Pay specific attention to the arrows or the movement of the light. Repeat the exercise several times.
- Note down how you feel before and after the breathing exercise.

3. During the Practicum:

- Choose a breathing exercise you can use with your students during the practicum presented in MELTApp (*If you are not in your practicum phase, you can practice the exercise on your own*). Use it at a suitable phase of your lesson. Observe the reactions of the students and how you feel during the process.

4. Mindful Reflection and Planning:

- After your observations, reflect on your experiences.

Keeping the steps in your mind, fill in the table below and upload it to the drive folder provided under it:

The Practice I Used as a Teacher Candidate:	How I Felt Before and After:	The Practice I Chose for My Lesson:	How My Students Reacted:	My Feelings About My Students' Reactions:	My Feelings About the MELTApp(Breathing Exercises Part)

Click [here](#) or use this link to the drive folder:

https://drive.google.com/drive/folders/10nkMweYOxXzSgkoDm6y1U_4C4HWjCElq?usp=drive_li
nk

WEEK 3: MEDITATION OASIS

In this assignment, you are expected to engage in the “Meditation Oasis” part of MELTApp. Read the instructions carefully and fill in the related table. You can add more rows to your table.

Here are the steps to be followed:

5. Exploration:

- Use MELTApp to practice the meditation card on your own and prepare for your upcoming lesson. Tap each exercise to see the details.

6. Pre-practicum:

- Before your practicum, go to MELTApp and choose a meditation card. Pay Repeat the exercise several times.
- Note down how you feel before and after the meditation card.

7. During the Practicum:

- Choose a meditation card you can use with your students during the practicum presented in MELTApp (*If you are not in your practicum phase, you can practice the exercise on your own and with your friends*). Use it at a suitable phase of your lesson/a time you think it is suitable for you to have your friends practice the meditation card. Observe the reactions of the students/peers and how you feel during the process.

8. Mindful Reflection and Planning:

- After your observations, reflect on your experiences.

Keeping the steps in your mind, fill in the table below and upload it to the drive folder provided under it:

The Practice I Used as a Teacher Candidate:	How I Felt Before and After:	The Practice I Chose for My Lesson/Peers:	How My Students/Peers Reacted:	My Feelings About My Students'/Peers' Reactions:	My Feelings About the MELTApp(Meditation Oasis Part)

Click [here](#) or use this link to the drive folder:

https://drive.google.com/drive/folders/1C7eWJkLrmp-fvDrv4l_FUTiNFkCXiPWl?usp=drive_link

After this, complete the reflective journal: <https://forms.gle/hyTS6HqCzPCHcTpg7>

WEEK 4: THE NINE ATTITUDES OF MINDFULNESS

In this assignment, you are expected to engage in the “The Attitudes of Mindfulness” part of MELTApp. Read the instructions carefully and fill in the related table. You can add more rows to your table.

- Use MELTApp to revise the attitudes on your own.
- Think of your experience regarding teaching/learning English. What were the times that you experienced impatience, boredom, distrust, holding on, and so on?
- For each experience, write the possible mindfulness attitudes(s) you can promote to minimize the bad consequences of it. Use MELTApp to remember the possible consequences.
- Write how you can promote/enhance each attitude (journaling, asking questions, etc.). Again, use MELTApp to see the strategies.
- Write how you felt using the MELTApp while revising the attitudes.
- Fill in the table below and upload it to the drive folder provided under it:

Incident	Possible mindfulness attitude to handle the problem	Ways to promote this attitude	My Feelings About the MELTApp (Attitudes of Mindfulness Part)
e.g. Today, everything felt so boring while I was teaching.	Beginner’s mind	Asking questions,...	

Click [here](#) or use this link to the drive folder:

https://drive.google.com/drive/folders/1hYKUPi0y2T4wy7hqLDDCOPnsWCD8Lnws?usp=drive_1ink

After this, complete the reflective journal: <https://forms.gle/eYqXZXFQmWumLzvt8>

WEEK 5: MINDFULNESS-ENHANCED LANGUAGE TEACHING (MELT)

THE FINAL ASSIGNMENT

THE MELT PRACTICE:

Prepare a Mindfulness-Enhanced Language Teaching (MELT) task. The task needs to be aligned with the learning outcomes, the curriculum and the ideas in the units you have taught nowadays. First, visit the MELT website (www.mindfulnessinelt.com) and the MELTApp and analyze the tasks for young learners and teenagers. Inspired by the format of the language tasks on the website and the app, please prepare your activity accordingly following a similar format.

Include the following:

- **Name-Surname:**
- **Topic:**
- **Language skill(s)/area(s) targeted at:**
- **Level/Class:**
- **Name of the MELT Activity (Give a name):**
- **Include a Visual:**
- **(If possible) include sound (give link):**
- **Write step-by-step instructions by giving a number to each step:**
 1.
 2.
- **Write a rationale at the end and explain:**
 - **what makes this activity a MELT activity**
 - **how would you use this activity in your class (at which part)**
 - **how this activity fosters language learning**

Upload this to the given Google Drive Folder:

https://drive.google.com/drive/folders/117hjOMXM5Kr1p03QQZYzuoszS4IZj3QG?usp=drive_link

APPENDIX-G. Sample Task from a Participant

The Practice I Used as a Teacher Candidate:	How I Felt Before and After:	The Practice I Chose for My Lesson/Peers:	How My Students/Peers Reacted:	My Feelings About My Students'/Peers' Reactions:	My Feelings About the MELTApp(Breathing Exercises Part)
Square Breathing	Before doing this exercise, I was very nervous about a lesson because that student was really difficult to manage. However, after applying this exercise, I felt very calm and almost ready to enter the lesson.	Infinity Breathing	I faced a reaction that I didn't encounter. The student really enjoyed the exercise. Our topic in the lesson was about art and drawings and the student told me that he loves drawing that's why he left his chair and went to look for some of his drawings and he ran a lot. When he came back, he was very exhausted by running. Then I thought, yes, that's the time for trying this exercise. After	Even though I expected the student to find it a little bit funny, he really enjoyed doing the exercise. When I see him enjoying the exercise, I also enjoy doing the exercise with him.	It's a great opportunity to be able to have an easy access for the exercise when we need it. If I had tried to use the website for it, it would take a few minutes for me to access to the Breathing Exercises. That's why I believe the app was really helpful in that situation.

APPENDIX-H. The Five Facets of Mindfulness Questionnaire

Five Facet Mindfulness Questionnaire (FFMQ)

Please rate each of the following statements with the number that best describes <i>your own opinion</i> of what is <i>generally true</i> for you.		Never or very rarely true	Rarely true	Sometimes true	Often true	Very often or always true
FFQM 1	When I'm walking, I deliberately notice the sensations of my body moving. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 2	I'm good at finding words to describe my feelings. (D)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 3	I criticize myself for having irrational or inappropriate emotions. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 4	I perceive my feelings and emotions without having to react to them. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 5	When I do things, my mind wanders off and I'm easily distracted. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 6	When I take a shower or bath, I stay alert to the sensations of water on my body. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 7	I can easily put my beliefs, opinions, and expectations into words. (D)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 8	I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 9	I watch my feelings without getting lost in them. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 10	I tell myself I shouldn't be feeling the way I'm feeling. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 11	I notice how foods and drinks affect my thoughts, bodily sensations, and emotions. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 12	It's hard for me to find the words to describe what I'm thinking. (D-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 13	I am easily distracted. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 14	I believe some of my thoughts are abnormal or bad and I shouldn't think that way. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 15	I pay attention to sensations, such as the wind in my hair or sun on my face. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 16	I have trouble thinking of the right words to express how I feel about things. (D-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 17	I make judgments about whether my thoughts are good or bad. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 18	I find it difficult to stay focused on what's happening in the present. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

		Never or very rarely true	Rarely true	Sometimes true	Often true	Very often or always true
FFQM 19	When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 20	I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 21	In difficult situations, I can pause without immediately reacting. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 22	When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words. (D-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 23	It seems I am "running on automatic" without much awareness of what I'm doing. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 24	When I have distressing thoughts or images, I feel calm soon after. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 25	I tell myself that I shouldn't be thinking the way I'm thinking. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 26	I notice the smells and aromas of things. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 27	Even when I'm feeling terribly upset, I can find a way to put it into words. (D)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 28	I rush through activities without being really attentive to them. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 29	When I have distressing thoughts or images, I am able just to notice them without reacting. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 30	I think some of my emotions are bad or inappropriate and I shouldn't feel them. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 31	I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 32	My natural tendency is to put my experiences into words. (D)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 33	When I have distressing thoughts or images, I just notice them and let them go. (NR)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 34	I do jobs or tasks automatically without being aware of what I'm doing. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 35	When I have distressing thoughts or images, I judge myself as good or bad depending what the thought or image is about. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 36	I pay attention to how my emotions affect my thoughts and behavior. (OBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

		Never or very rarely true	Rarely true	Sometimes true	Often true	Very often or always true
FFQM 37	I can usually describe how I feel at the moment in considerable detail. (D)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
FFQM 38	I find myself doing things without paying attention. (AA-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
FFQM 39	I disapprove of myself when I have irrational ideas. (NJ-R)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

Scoring:

(Note: R = reverse-scored item)

Subscale Directions	Your Score TOTAL	Your score item Avg.
Observing: Sum items 1 + 6 + 11 + 15 + 20 + 26 + 31 + 36		
Describing: Sum items 2 + 7 + 12R + 16R + 22R + 27 + 32 + 37.		
Acting with Awareness: Sum items 5R + 8R + 13R + 18R + 23R + 28R + 34R + 38R.		
Nonjudging of inner experience: Sum items 3R + 10R + 14R + 17R + 25R + 30R + 35R + 39R.		
Nonreactivity to inner experience: Sum items 4 + 9 + 19 + 21 + 24 + 29 + 33.		
TOTAL FFMQ (add subscale scores)		

NOTE: Some researchers divide the total in each category by the number of items in that category to get an average category score. The Total FFMQ can be divided by 39 to get an average item score.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27-45.

APPENDIX-I. Permission to Use the FFMQ



Ruth Baer <ruth.baer@psych.ox.ac.uk>

Kime: ☺ Dicle Sarikaya



18.02.2024

Hello,

You're welcome to use the FFMQ.

Best of luck with your project,

Ruth

Ruth Baer, PhD

Director, Master of Studies in Mindfulness-Based Cognitive Therapy
University of Oxford

<https://www.ox.ac.uk/admissions/graduate/courses/mst-mindfulness-based-cognitive-therapy>



APPENDIX-J. Reflective Logs

Eğitim Sonrası Yansıtılmalı Günlük

Sevgili Katılımcılar,

Aşağıdaki soruları bu haftaki MELTApp eğitim oturumunu ve MELTApp içerisindeki "Attitudes of Mindfulness" kısmını düşünerek yanıtlayınız. Eğitim oturumu sonrasındaki hafta içerisinde öğrendiğiniz bilgileri uygulamanız ve bu yansıtıcı günlüğü doldurmanız gerekmektedir.

Genel ifadeler yerine bu hafta tam olarak ne düşünüp ne hissetiyorsanız samimi ve ayrıntılı bir şekilde yazmanız son derece önemlidir. Yazdıklarınız sadece bilimsel amaçlar için isimsiz bir şekilde veri havuzuna aktarılabilecek olup üçüncü şahıslar ile paylaşılmayacaktır. İçten yanıtlarınız için teşekkürler.

Arş. Gör. Dicle Sarıkaya
Yıldız Teknik Üniversitesi
İngiliz Dili Eğitimi

Doç. Dr. S. İpek Kuru Gönen
Anadolu Üniversitesi
İngiliz Dili Eğitimi

Her türlü sorunuz için diclesky@gmail.com adresinden iletişim kurabilirsiniz.

Bu haftaki MELTApp Oturumu ve içeriği hakkında genel olarak neler düşünüyorsunuz ve hissediyorsunuz? Ayrıntılı olarak (olumlu/olumsuz) belirtiniz. *

Long answer text

Bu haftaki MELTApp eğitimi sonrasında uygulama içerisindeki hangi etkinliği/etkinlikleri kullandınız? *

Short answer text

Bu haftaki MELTApp eğitimi sonrasında kullanmayı seçtiğiniz etkinliği/etkinlikleri ne zaman/hangi amaçla kullandınız? *

Long answer text

Bu hafta uygulamayı seçtiğiniz MELTApp etkinlikleri arasından etkili bulduğunuz uygulama(lar) var mı? Varsa nedeni ile birlikte belirtiniz. Yoksa 'Yok' yazınız. *

Long answer text

MELTApp uygulamasını kullanırken tecrübe ettiğiniz avantajlar/kolaylıklar var mıdır? Varsa nelerdir? (Yoksa, "Yok" yazınız.) *

Long answer text

MELTApp uygulamasını kullanırken tecrübe ettiğiniz dezavantajlar/zorluklar var mıdır? Varsa nelerdir? (Yoksa, "Yok" yazınız.) *

Long answer text

APPENDIX-K. Semi-structured Interview Questions

YARI YAPILANDIRILMIŞ GÖRÜŞME PROTOKOLÜ

Değerli katılımcılar,

Yarı-yapılandırılmış görüşme soruları, aldığınız MELTApp eğitimi hakkında görüş, duygu ve düşüncelerinizi öğrenmek amacıyla hazırlanmıştır. Sizlere aldığınız eğitim hakkında genel sorular ve MELTApp uygulamaları hakkında sorular yönelteceğiz. Bu görüşme sorularına içtenlikle vereceğiniz yanıtlar MELTApp uygulamasının geliştirilmesi ve bilinçli farkındalıklı bakış açısının İngilizce eğitimine teknoloji yoluyla entegre edilmesi için son derece önemlidir. Katılımınız ve içten yanıtlarınız için teşekkür ediyoruz.

Arş. Gör. Dicle Sarıkaya
Yıldız Teknik Üniversitesi
Eğitim Fakültesi
İngilizce Öğretmenliği Bölümü

Prof. Dr. S. İpek KURU GÖNEN/Tez Danışmanı
Anadolu Üniversitesi
Eğitim Fakültesi
İngilizce Öğretmenliği Bölümü

Tüm sorularınız için diclesrky@gmail.com adresinden iletişim kurabilirsiniz.

Genel Görüşler

- Mindfulness-Enhanced Language Teaching (Farkındalıkla Zenginleştirilmiş Dil Öğretimi) kavramını kendi kelimelerinizle tanımlayabilir misiniz?
- Aldığınız teknoloji destekli bilinçli farkındalık eğitimi hakkında neler düşünüyorsunuz?
- Aldığınız teknoloji destekli bilinçli farkındalık eğitimi sizde kişisel ve/veya profesyonel olarak herhangi bir değişim/farklılık yarattı mı? Evet ise ayrıntılı olarak açıklayınız.
- Öğrendiğiniz teknoloji destekli bilinçli farkındalık uygulamalarının İngilizce öğretiminde sizce herhangi bir rolü var mıdır? Varsa açıklayınız.
- Teknoloji destekli bilinçli farkındalık uygulamaları arasından etkili ve etkisiz bulduklarınız var mı? Varsa açıklayınız.

MELTApp Uygulaması Hakkında

- MELTApp mobil uygulaması hakkında genel olarak ne düşünüyorsunuz?
- MELTApp uygulamasının sınıf öğrenme öğretme ortamlarında İngilizce öğretimine entegre edilmesi hakkında ne düşünüyorsunuz?
- Kullandığınız MELTApp uygulamasındaki etkinlikler arasından uygulama açısından etkili ve etkisiz bulduklarınız var mı? Varsa lütfen örnekler vererek açıklayınız.
- MELTApp mobil uygulamalarının bir öğretmen olarak profesyonel ve kişisel gelişiminiz üzerinde herhangi bir etkisi var mıdır? Varsa açıklayınız.
- MELTApp uygulamasını bundan sonraki öğretmenlik hayatınızda kullanmak ister misiniz? Yanıtınız evet ise bu uygulama dil öğretiminde hangi dil becerisi ve alanlarında kullanılabilir?

APPENDIX-L. The Ethical Committee Approval of Anadolu University

Evrak Kayıt Tarihi: 13.02.2024	Protokol No: 696663	Tarih: 26.02.2024
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ANADOLU ÜNİVERSİTESİ
SOSYAL VE BEŞERÎ BİLİMLER BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU
KARAR BELGESİ

ÇALIŞMANIN TÜRÜ:	Yüksek Lisans Tez Çalışması
KONU:	Eğitim Bilimleri
BAŞLIK:	Bilinçli Farkındalıkla Zenginleştirilmiş Dil Öğretimi Mobil Aracının Tasarımı ve Kullanımı Üzerine Bir Çalışma: Hizmet Öncesi İngilizce Öğretmenlerinin Algıları A Study on the Design and Use of a Mindfulness-Enhanced Language Teaching Mobile Tool: Pre-Service EFL Teachers' Perceptions
PROJE/TEZ YÜRÜTÜCÜSÜ:	Doç. Dr. Safiye İpek KURU GÖNEN
TEZ YAZARI:	Dicle SARIKAYA
ALT KOMİSYON GÖRÜŞÜ:	-
KARAR:	Olumlu

Prof. Dr. Saim ÖNCE
(Başkan-İkt. ve İdari Bil. Fak.)

Prof. Dr. M. Erkan ÜYÜMEZ (Başkan Yardımcısı -İkt. ve İdari Bil. Fak.)	Prof. Dr. Fatime GÜNEŞ (Edebiyat Fak.)
Prof. Dr. Yıldız UZUNER (Eğitim Fak.)	Prof. Dr. Erkan YÜKSEL (İletişim Bil. Fak.)
Prof. Dr. Handan DEVECİ (Eğitim Fak.)	Prof. Dr. Kamil ÇEKEROL (Açıköğretim Fak.)

CURRICULUM VITAE

Name Surname : Dicle SARIKAYA

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Work Experience

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