

Pre-Service Teachers' Use of Mobile-Based Mindfulness Practices During Covid-19 Pandemic Era

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Abstract: Mindfulness is the basic human ability to be fully present, aware of where they are and what they are doing, and not overly reactive or overwhelmed by what is going around them. The growing evidence of the use of mindfulness practice on promoting psychological wellbeing and self-regulation is in line with the increasing use of mobile applications in this digital era nowadays especially during the COVID-19 pandemic era. This study aims to find out the influence of two mobile-based mindfulness apps, Calm and Headspace, on the pre-service teachers of English as a Foreign Language (EFL) in Indonesia studying online during COVID-19 pandemic era. The 43 subjects were given 20-session-mindfulness intervention (guided and independent trainings) using the two mobile-based mindfulness apps. The data from the Five Facet Mindfulness Questionnaire (FFMQ), the classroom observations, and the written interviews were analysed quantitatively and qualitatively. The results from the t-test analysis on the FFMQ show that there was an improvement on the subjects' mindfulness level after the intervention. Furthermore, the results of the observation and the interview show that the oral narrations of the contents in the apps were found useful as a means to provide positive learning environment before and during the learning practice. Moreover, the oral narrations of the contents in the apps were specifically found useful as a means to practice listening comprehension. Therefore, besides being served as a means to practice and improve the pre-service teachers' mindfulness level, mobile-based mindfulness apps could also be used to enhance one's English listening comprehension skills. The use of mobile-based mindfulness applications can be promising for pre-service teachers in Indonesia who need to have balance academic and social-emotional skills to support their role in teaching students in the future.

Keywords: apps; COVID-19; mindfulness; mobile-based; pre-service teachers

Penggunaan Praktik Berkesadaran Penuh (*Mindfulness*) Berbasis Seluler oleh Calon Guru di Era Pandemi Covid-19

Abstrak: Kesadaran penuh (*mindfulness*) adalah kemampuan dasar manusia untuk sadar dan hadir sepenuhnya terhadap dimana mereka berada dan apa yang mereka lakukan, serta tidak reaktif terhadap kejadian di sekitar mereka. Bukti yang berkembang terkait penggunaan *mindfulness* untuk meningkatkan kesejahteraan psikologis dan pengaturan diri sejalan dengan meningkatnya penggunaan aplikasi seluler di era digital saat ini terutama selama pandemi COVID-19. Penelitian ini bertujuan untuk mengetahui pengaruh dua aplikasi *mindfulness* berbasis seluler (*Calm* dan *Headspace*) bagi calon guru Bahasa Inggris yang menjalani pembelajaran secara online selama pandemi COVID-19. Empat puluh tiga calon guru dalam penelitian ini diberikan pelatihan *mindfulness* selama 20 sesi (pelatihan terpandu dan independen) menggunakan *Calm* dan *Headspace*. Data dari *Five Facet Mindfulness Questionnaire* (FFMQ), observasi kelas, dan wawancara tertulis dianalisa secara kuantitatif dan kualitatif. Hasil analisis uji-t pada FFMQ menunjukkan tingkat mindfulness subjek meningkat setelah menjalani intervensi. Hasil observasi dan wawancara menunjukkan bahwa narasi lisan dari konten dari dua aplikasi tersebut bermanfaat memberikan lingkungan belajar yang positif selama pembelajaran, sekaligus meningkatkan keterampilan mendengar Bahasa Inggris (*listening comprehension*) mereka. Penggunaan aplikasi ini dapat memberikan bekal keterampilan akademik dan sosial-emosional yang seimbang bagi calon guru di Indonesia untuk mendukung peran mereka dalam mengajar siswa di masa depan.

Kata kunci: aplikasi; COVID-19; mindfulness; berbasis seluler; calon guru

INTRODUCTION

Mindfulness is likely to act on the perceptions of stress and coping with stress (Flook et al., 2013). It entails observing and noticing without reacting to or intentionally altering direct experience in the moment (Segal et al., 2002, cited in Flook, et al., 2013, p. 2). Keng et al. (2011) claim that there is a clear convergence of findings from correlational studies, clinical intervention studies, and laboratory-based, experimental studies of mindfulness suggesting that mindfulness is positively associated with psychological health, and training in mindfulness may result in positive psychological effects ranging from increased subjective well-being, reduced psychological symptoms and emotional reactivity, to improved regulation of behavior.

There are two features that appear in most definitions of mindfulness in the scientific literature (Qualia, 2015). First, mindfulness grounds attention and awareness in one's present moment experience that take the forms of one's body sensations, emotional reactions, mental images, mental talk, and perceptual experiences like sounds. Second, mindfulness adopts an attitude of openness or acceptance toward one's experience with a curious, detached, and nonreactive orientation. Therefore, mindfulness' most common definition is from Kabat-Zinn (2003) that generally includes "the self-regulation of attention to the experience of the present moment and decentered, non-judgmental awareness, referring to openness to one's internal experiences and external events." The ability to direct one's attention in this way can be developed through the practice of meditation that should be seen as a universal practice having nothing to do with organized religion or dogma.

Baer et al. (2006) devised Five Facets Mindfulness Questionnaire (FFMQ) which assesses five dimensions, namely observing (attending or noticing internal and external stimuli, such as sensations, emotions, cognitions, sights, sounds, and smells), describing (noting or mentally labelling this stimuli with words), acting with awareness (attending to one's current actions, as opposed

to behaving automatically or absent-mindedly), non-judging of inner experience (refraining from evaluation of one's sensations, cognitions, and emotions), and non-reacting to inner experience (allowing thoughts and feelings to come and go, without attention getting caught up in them). These five facets significantly improved after within certain time spent in a series of mindfulness training (Carmody & Baer, 2008). Hyland (2011) explained that a number of mindfulness practice such as breath meditation, walking meditation, mindful movement and everyday mindfulness, has indicated the contribution to the enhancement of mental and physical health and well-being.

Mindfulness training enhances attention by bringing awareness to the object of attention whether it is the breath, other body sensations, external stimuli, thoughts, or emotions (Flook, et al., 2013, p. 2). Interest in mindfulness training has increased rapidly, particularly in the fields of education because mindfulness is significantly related to several indicators of successful education. Preliminary researches in this field also suggest that mindfulness has the potential to improve classroom management, teacher-student relationships, instructional strategies, intellectual skills, as well as social emotional skills (Albrecht et al., 2012; Schonert-Reichl et al., 2015; Maynard et al., 2017). It is likely to have beneficial effects on the emotional wellbeing, mental health, ability to learn and the physical health of school students. It also has effects on very useful underlying emotional and social skills including the ability to feel in control, to make meaningful relationships, to accept experience without denying the facts, to manage difficult feelings, and to be calm, resilient, compassionate and emphatic (Baer, 2003; Salmon et al, 2004). Moreover, mindfulness also has an impact on intellectual skills, such as improving sustained attention, visuo-spatial memory, working memory, and concentration (Jha et al., 2007; Chambers et al., 2008; Zeidan et al., 2010) as students, teachers and parents also reported subjective improvements in students' motivation and confidence,

competence and effectiveness (Hennelly, 2011).

Mindfulness interventions have an impact fairly quickly, can fit into a wide range of contexts and are enjoyable and civilizing, for pupils and staff (Weare, 2013). Beginning teachers who share their lived experiences of using mindfulness in their first year of teaching claim that their personal wellbeing was enhanced, stress was reduced, and they could focus greater attention on their lesson planning and their students. In other word introducing mindfulness in teacher education could enhance the wellbeing of student teachers and beginning teachers and enhance job retention (Bernay, 2014).

On the other hand, Covid-19 has affected thousands of peoples, who are either sick or are passed away due to the spread of this disease. COVID-19 has rapidly affected day to day life and is slowing down the global economy, businesses, as well as the world trade and movements. The study from Zhu et al. (2021) found that their 7145 participants showed a relatively mild level of mental disorders, in which negative emotions and alienation were both predictors for Post-Traumatic Stress Disorder (PTSD) symptoms, and their direct and indirect effects were all moderated by the level of anxiety. The containment measures like school and activity centers closures for long periods together expose the children and youth to the debilitating effects on educational, psychological, and developmental attainment as they experience loneliness, anxiety, and uncertainty (Singh, et al., 2020).

In the field of education, students have had to rely more on their own resources to continue learning remotely through the Internet, television or radio. Meanwhile, teachers also had to adapt to new pedagogical concepts and modes of delivery of teaching, for which they may not have been trained. Moreover, the value offered by a university education which includes networking and social opportunities as well as educational content was questioned (Schleicher, 2020). The closures of schools and colleges have negatively impacted over 91% of the world's

student population (Lee, 2020). Shah, et al. (2020) claim that the transition away from the transition physical classes has significantly disrupted the students and their family's life and posed a potential risk to the mental wellbeing of students. An abrupt change in the learning environment and limited social interactions and activities posed an unusual situation for their brains.

To cope with the impacts of COVID-19 in education field, schools and universities need to reinvent their learning environments so that digitalization expands and complements student-teacher and other relationships. Besides, the learning environments must be able to overcome challenges faced by students academically, emotionally, and socially. Students need to be supported with a full awareness of what is being experienced and happened in order to overcome the challenges and difficulties caused by various psychological problems, such as anxiety, stress and depression. This awareness is commonly known and previously described as mindfulness.

On the other hand, in the digital era nowadays the growth of technology is found in almost all aspects of life. The interest of mobile-based mindfulness usage is also increasing because this kind of mindfulness-based interventions is highly acceptable and has positive impacts on youth nowadays especially in the field of health (Mani et al., 2015; Turner & Hingle, 2017). Headspace and Calm, which are provided in English, are two of the mobile applications (apps) that feature a mindfulness-based component. Headspace is an English American online healthcare company, specializing in meditation, while Calm is a software company based in San Francisco, California. Both Headspace and Calm provide mindfulness-based guided meditation resources online, accessible to users through the company's website and via mobile app on the iPhone and Android platforms. Users can access ten days of free content, after which they have the option to take out a monthly or annually subscription or continue with the free trial material. It is set up in series, in which users complete one session

(one meditation) every day for ten days. These two applications have the following common types of guided meditations: (1) Breathing - deep breathing with awareness of the in and out breathes, (2) Sitting meditation - breathing meditation in a sitting posture, with awareness of the body, (3) Loving kindness meditation - a meditation practice to accept, love, and show kindness to oneself and others, (4) Thoughts and emotions - acknowledging thoughts and emotions non-judgmentally, as they come and go.

These two apps can be a supporting mindfulness practice for focusing attention on present moment experience in a non-judgmental way for EFL pre-service teachers in Indonesia because the content in the apps is narrated in English. Using these two apps of mobile-based mindfulness practice is assumed to be a strategy to support the pre-service teachers who commonly face academic, emotional, and social challenges in their learning during COVID-19 pandemic as the online learning during the pandemic have implications that go beyond academics and affect social connections, motivation, and healthy behaviors (Gonzales-Ramirez et al., 2021). The use of the apps is hoped to increase their mindfulness level and decrease the negative mental states that they experience as it is common for pre-service teachers to face complex social-emotional experiences as students.

Before entering the real teaching profession, pre-service teachers usually need the education and training which typically occur within a college or university setting for which a set program of coursework and experiences is delineated by state-level requirements for teacher certification. Zeichner and Paige (2007) state, "Obtaining a degree in teacher education generally requires a minimum grade point average (GPA); completion of a bachelor's degree; knowledge about how social, institutional, and state policy affect the educational process; an understanding of how learning occurs and how to teach effectively; and successful completion of supervised field experiences." Specifically, the pre-service teachers of

English in Indonesia are required to have the skills of English and education to become the English teachers in schools. They should take the teacher professional program for one year to get a certificate for being a teacher. They face various uneasy problems starting from adjustment to struggle in dealing with academic and social challenges.

Therefore, it is necessary for pre-service teachers who are later going to be the future teachers to have good social emotional skills, as Jennings and Greenberg (2009) claim "Socially and emotionally competent teachers set the tone of the classroom by developing supportive and encouraging relationships with their students, designing lessons that build on student strengths and abilities, establishing and implementing behavioral guidelines in ways that promote learning motivation, coaching students through conflict situations, encouraging cooperation among students, and acting as a role model for respectful and appropriate communication and exhibitions of pro-social behavior." (p. 492). Mobile-based mindfulness practice might also be one possible solution to build pre-service teachers' social-emotional skills.

The research on the design and potential uses of mindfulness-based mobile apps on education field in Indonesia is not yet available. Therefore, this study tries to find out how the two mobile-based mindfulness apps (Headspace and Calm) could be applied to the EFL pre-service teachers studying in the English Education department at a university in Indonesia. The main objective in this study is to find out the influence of the two mobile-based mindfulness apps on the pre-service teachers by seeing the use of the apps to practice mindfulness in the online learning class context during the COVID-19 pandemic era.

METHODS

This study was conducted in the English Department of one university in Indonesia. The subjects of the study consist of 43 students who were pre-service teachers of English ranging from the age 18 to 20 years old. They were given 20-session-mindfulness

intervention using two mobile-based mindfulness apps named Headspace and Calm. Ten sessions were guided trainings conducted within the online synchronous class hours, while ten other sessions were assigned as independent activities outside the class hour. During the class hour, the subjects were given audio recordings in a class setting which were used as a part of the material discussed in a Listening Comprehension class. In each meeting before the class began, they were given 10 to 12 minutes mindfulness practice using different audio recordings from Calm. Meanwhile, outside the class the participants were asked to practice mindfulness for another ten sessions by accessing the two applications independently outside the class hours.

The Five Facet Mindfulness Questionnaire (FFMQ), classroom observations, and an interview were used to collect the data. The data of the questionnaire were analysed quantitatively, while the data from the in-depth interview with two subjects and the three classroom observations were analysed qualitatively. The FFMQ was used to obtain the information of the participants' mindfulness that primarily focuses on the intrapersonal aspects of mindfulness. It was constructed from Baer et al. (2006), and it consists of 39 items divided into the five dimensions, namely observing, describing, acting with awareness, non-judging of inner experience, and non-reacting to inner experience. The items are rated on a Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true). In terms of the validity and reliability, FFMQ has been proven of having good internal consistency and significant relationships in the predicted directions with a variety of constructs related to mindfulness (Baer et al., 2006). The classroom observation data were taken from the ten-session intervention during the class hour. Independent practice data were derived from the practice log in which participants recorded the number of mindfulness practice they did everyday using the applications and/or the three videos given as a class assignment. The interview was given to the

subjects after they finished the intervention. It includes seven questions related to their experiences while practicing mindfulness during the intervention. After getting the results of the written interview, a follow-up in-depth interview was given to two subjects who were considered special.

To analyze the data of the questionnaire, analysis of frequency was used to reveal the mean score, the standard deviation, and the data distribution. This study also used t-test to describe and measure the significant difference between the subjects' mindfulness before and after the intervention using the two mobile-based mindfulness apps. Prior to the data analysis, normality and homogeneity tests were conducted by using the Kolmogorov-Smirnov test and the Levene's test. The results of normality test for the FFMQ show that the significance values of the mindfulness were .064, which means it is distributed normally because the significance values are higher than .05. The results of the homogeneity test show that the significant value was .052, meaning that the data set has the same distribution, which means it is homogeneous.

The classroom observation focused on seeing how the subjects' enthusiasm (from their body language and eagerness during discussion) toward the ten times guided class-hour intervention. While, the interview focused on finding out how they feel, what the benefits of the interventions are, and how the audio content related to their listening comprehension ability.

RESULTS AND DISCUSSION

Five Facet Mindfulness Questionnaire Results

The statistical data were classified into two: the score distribution of mindfulness and its five dimensions. As shown in Table 1, the mean score for subjects' mindfulness before the intervention is 120.49 and the standard deviation is 9.326. There is only one subject in low category (2.33%) and the other 42 subjects are in moderate category (97.67%).

Table 1 The Score Distribution of Students' Mindfulness before the Intervention Total(N=43)

Interval	Category	%	Mean	Std.
39 - 90	Low	2.33		
91 - 142	Moderate	97.67	120.49	9.326
145 -195	High	0		

Meanwhile, as shown in Table 2, the mean score for students' mindfulness after the intervention is 123.12 and the standard deviation is 10.922. There is no more subject in low category, and 42 subjects are in moderate category (97.67%) while one subject is in high category (2.33%).

Table 2 The Score Distribution of Students' Mindfulness after the Intervention Total (N=43)

Interval	Category	%	Mean	Std.
39-90	Low	0		
91-142	Moderate	97.67	123.12	10.922
145-195	High	2.33		

Although most subjects are still in moderate level of mindfulness, 26 subjects (60.47%) score results were increasing after the intervention. However, the results of 14 subjects (32.86%) were decreasing.

Table 3 Paired Sample t-test

	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
pre-post	-2.62	14.933	2.277	-7.224	1.968	-1.154	42	.255

The paired sample t-test was conducted to compare the pre- and post-test scores of the subjects' FFMQ. The result shows that there was no significant difference in their mindfulness level before and after the intervention. However, there was still an improvement on their mindfulness level after the intervention.

Five Dimensions of Mindfulness Results

There are five dimensions of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reacting to inner experience. Among the five

dimensions, table 4 shows the means difference of each of the dimension before and after the intervention. After the intervention, the subjects' highest mean score was describing (M = 19.38), followed by non-judging (M = 18.66), non-reacting (M = 0.5), acting with awareness (M = 0.27) and observing (M = 0.16). It means that the majority of 43 subjects had significantly increased their describing and non-judging dimensions.

Table 4 The Five Dimensions of Mindfulness

Dimensions of Mindfulness	Before	After	Means
Observing	26.79	26.95	0.16
Describing	24.41	43.79	19.38
Acting with awareness	25.32	25.59	0.27
Non-judging	23.27	41.93	18.66
Non-reacting	21.25	21.75	0.5

Observation Results

The observation was conducted during the ten-session mindfulness practice in the class hour. Before the class began, the subjects were given 10 to 12 minutes mindfulness practice with different audio recording from Calm in each meeting. They were asked to listen to the audio recording and follow the narration or the audio content to sit in their comfortable position, close their eyes, manage their mind based on the content in the narration, and finally open their eyes again. After this practice, there was a follow up discussion related to their understanding about the audio content.

Comparing the first to the tenth meeting, progress was seen from observing the subjects' sitting position and enthusiasm. The first two meetings showed that almost all of the subjects seemed confused about this mindfulness training. However, the majority subjects looked enthusiastic because it was something new for them, but some still could not sit still and kept moving their legs, hands, and fingers once and a while showing that their degree of concentration was still low. The "comfortable and relaxed" sitting position they chose was still a bit

inappropriate and did not really support the essence of mindfulness practice; therefore, some of them would fall asleep during the practice. Moreover, in general the males looked less serious than the females.

There was always a follow-up discussion after the audio from the apps finished. The follow up discussions were also used to discuss the subjects' comprehension about the audio which mostly described about how to practice mindfulness by focusing on the narration and the background sound. The discussions showed that (1) some of the subjects could understand what they might do during the practice because they understood the content of the narration in the audio from Calm, (2) some others claimed that they could not pay attention fully on the audio content and they only focused on the calming back sounds (birds chirping, waves, and rain) in the audio recordings, so they actually missed the essence of the narration/audio content. However, since they were having discussion in the class, the subjects who previously had problem in understanding the content could slowly recognize the content, and they gradually started to comprehend the content by themselves. Specifically in the third observation, the subjects who were 97.67% Muslims claimed that the mindfulness practice shared one same concept with their religion, which is having full concentration while reciting the Qur'an (*ṣiqir*). In the fourth meeting, all the subjects had started to comprehend the audio content better. They could retell the audio content during the class discussion enthusiastically.

Interview Results

The interview covers the responses to the following statements: (1) How many videos related to mindfulness that the subjects watched from the two mobile-based applications, (2) How many times the videos watched, (3) How long they usually spent their time to watch the videos, (4) How was their feeling after watching the videos, (5) What problems they encountered while having the mindfulness practice using the videos from the applications, (6) How the videos helped to

improve their English ability, and (7) What benefits of doing the mindfulness practice using the videos they got. The subjects' responses to statement 1 to 3 reveal the results of their independent practice of mindfulness. The data from the interview were mostly analysed qualitatively.

Table 5 Independent Practice

	Number of videos used		Frequency of time spent	
	< 5	> 5	< 5	> 5
Subjects	37	6	42	1
%	86.05	13.95	97.67	2.33

The interview results reveal that 43 subjects generally practiced mindfulness independently by watching the videos for 3 to 10 times. They spent 5 to 12 minutes to watch each video. There were 37 (86.05%) subjects practiced using more than five videos, while only 6 (13.95%) students practiced using more than five videos. Most of them (97.67%) had less than five times using the videos to practice independently and only one (2.33%) subject spent more than five times using the videos. The subjects admitted that they spent less time in the independent practice that they should have done at home. They claimed that they had problem accessing the application because of the limited internet access. The amount of money they needed to spend to buy the internet quota was their biggest concern.

Furthermore, the subjects claimed the following benefits after having the mindfulness practice both in and out the classroom settings: (1) having a calmer and more relax feelings, (2) being able to control/manage emotion, (3) training a better concentration/focus, (4) having better sleep quality, and (5) being able to listen to the motivational and positive audio content. In relation to their English listening comprehension ability, the subjects claimed that they benefited from getting (1) new vocabulary items, (2) native speakers' pronunciation and authentic material, (3) gentle tones and slow articulation listening practice, and (4) the English subtitles from the videos in the applications.

The results of the interview also reveal two females (S2 and S29) among the 43 subjects who had particular personal case/conditions making them slightly different from the rest of the subjects. S2 admitted that she had a mental issue called PTSD (Post-Traumatic Stress Disorder). She said that she had watched this kind of videos for more than two years because her psychiatrist told her that she needed to know this kind of meditation to help her reduce her depression and control her emotion. During the intervention period, she had watched 6 videos for more than 5 times independently. She spent for about 5 minutes to watch each video. She said that she felt calm and relaxed after watching the videos. She felt that all her problems had just been tossed into the sea. She was no longer having insomnia when she had to sleep. Meanwhile, the oral narration in the videos was slow and it could make her expand her listening skills. Lastly, from doing the mindfulness practice using the videos from the applications, she claimed of getting two benefits: (1) More concentration and less nervousness while doing something and (2) Sleep better.

Meanwhile, S29 admitted that she needed to undergo a series of surgery in her hip due to an accident she had had. Before having the intervention, she said that she could not focus on her study because her mind was bothered by the negative thought (fear and anxiety) of having the follow-up surgeries. During the intervention period, she had watched 5 videos for 2 - 3 times independently. She also said that she felt calm and relaxed after watching the videos. Moreover, she claimed that she could now concentrate more on the lessons rather than kept thinking about her surgeries and health issue.

Discussion

Although the paired sample t-test results show that there was no significant difference in the subjects' mindfulness level before and after the intervention, there was still an improvement on their mindfulness level after the intervention as shown in the mean scores before and after the interventions. It is

assumed that the use of mobile-based mindfulness apps give positive results for the pre-service teachers in terms of introducing them with mindfulness that can be a useful tool for them to practice managing their emotion, relaxing their mind, and training their concentration, as mindfulness can strengthen one's emotional and social skills which include the ability to feel in control, to make meaningful relationships, to accept experience without denying the facts, to manage difficult feelings, and to be calm, resilient, compassionate and emphatic (Baer, 2003h). In relation to the use of mobile-based mindfulness apps, Calm and Headspace can clearly explain the philosophy and practice of mindfulness for educating the users on mindfulness (Mani et al., 2015, p 7) in order to make them gain the benefits.

The findings also show that the subjects' describing and non-judging dimensions increase significantly. The increase of the describing dimension shows that they could note or mentally label any sensations, emotions, and sounds with words, which can be seen clearly during every discussion session in the class meetings. An increase in self-reported describing experience was linked to greater sustained attention on an objective measure (Flook et al., 2013, p. 9) in which the subjects were mostly given practice to focus intensively on the audio content and the back sound voice of the videos in the apps. Moreover, the subjects' non-judging dimension also increased significantly since the apps have the guided meditation types of loving kindness meditation and thought and emotions. These two types of guided meditation in the apps not only give positive statements to understand how to practice accept, love, and show kindness to themselves and others, but also lead them to acknowledge their thoughts and emotions non-judgmentally. The increase in non-judgmental attention is in relation to qualities of internally focused attention to social emotions, like compassion, as well as patterns of resting state brain activity that are tied to mental health and aspects of cognition (Flook et al., 2013, p. 10).

Meanwhile, since the two apps are provided in English, they also gave positive influence for the subjects who were EFL pre-service teachers in Indonesia. The features in the apps could be used as a media to practice and enhance their English ability. The oral narrations in the apps were found useful to practice comprehension for both the vocabulary and the content of the audio. The 20 times intervention can be considered as positive exposure for the pre-service teachers of English who are non-native speaker of English to practice their English skills, especially listening. Moreover, listening comprehension subject is commonly seen as a challenging and stressing subject in EFL context as Hamouda (2013) found accent, pronunciation, speed of speech, insufficient vocabulary, different accent of speakers, lack of concentration, anxiety, and bad quality of recording were the major listening comprehension problems encountered by EFL learners. Mindfulness practice can be a good alternative solution to manage one's negative feelings in which mindfulness has been found to reduce psychological distress and optimize psychological functioning in young people (Coffey et al., 2010), as it is effective to reduce depression (Khoury et al., 2013 cited in Mani et al., 2015) related to the challenges during the Listening Comprehension classes.

However, this study also showed that the subjects spent different amount of time in doing the independent practice apart from the regular guided practice during the active class hours. This might reflect the different motivation and seriousness of each subject in practicing mindfulness. It also shows how the different habit of mindfulness practice that they had would lead to different results of their mindfulness. The more practice ones have, the more benefits ones get. Therefore, mindfulness should become a habit and a mind-training skill that requires regular practice and sustained effort to be effective (Kabat-Zinn, 2006).

“Mindfulness promotes resilience in educators and may foster healthy educators, classrooms, and students” (Abenavoli et al.,

2013), as mindfulness makes teachers more aware of their thoughts and has helped them nourish themselves. Therefore, the pre-service teachers of English are suggested to improve their mindfulness in order to overcome the possible social and emotional challenges they would face in their real EFL teaching and learning in the future. This in turn will make them better teachers by improving their lives and those around them. They could implement mindful strategies in their teaching to give benefits for their students, in which when mindful strategies are implemented, students have significant opportunities to expand creativity, collaboration, communication and critical thinking.

Although mobile-based mindfulness apps are considered as an alternative to improve one's mindfulness, there are some possible problems leading to the low intensity of mindfulness practice. The low awareness might be due to the quite expensive access of internet one experienced for living in a developing country and his/her willingness to practice the spiritual-seemed-like intervention regularly. Therefore, the use of mobile-based mindfulness practice should better be seen as an alternative in accommodating the nowadays mobile-based lifestyle rather than be considered as a hinder to practice. Moreover, mindfulness practice should also be seen as a universal behavior practice and not as a certain religion practice as Palitsky and Kaplan (2021) suggest that mindfulness-based interventions that are responsive to religious diversity can actually advance culturally competent practices in the field.

CONCLUSION

The results from the t-test analysis on the FFMQ show that there was an improvement on the subjects' mindfulness level after the intervention. The observation and the interview results show that the oral narrations of the contents in the apps were found useful as a means to provide positive learning environment before and during the learning practice. The oral narrations of the contents in the apps were also found useful as a means to

practice listening comprehension. Therefore, besides being served as a means to practice and improve the pre-service teachers' mindfulness level, mobile-based mindfulness apps could also be used to enhance one's English listening comprehension skills.

Mobile-based mindfulness regular practices develop attention, emotional, and cognitive understanding, bodily awareness and coordination, as well as interpersonal awareness and skills that will be useful to support pre-service teachers in facing the social emotional challenges during their study, especially in relation to the COVID-19 impacts. Introducing mindfulness practices in the daily teacher training learning context in Indonesia can be a good innovation as to prepare the future teachers to have better social emotional competencies to support the development of the educational field.

However, the selection and responses of the interviewees, especially their self-report on the independent practice could lead to some biases as they might not be enough represented the whole subjects. Moreover, it is suggested for other researchers to have further studies on this topic within the education context in Indonesia both for teachers and students.

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