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Does a 5-min brief mindfulness or listening activation help college students reduce English listening anxiety before an EFL listening test?

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Abstract

English listening anxiety (ELA) is believed to have a negative effect on listening performance of English learners. The present study examined the effectiveness of two interventions, a brief mindfulness and listening activation in helping Chinese college students reduce English listening anxiety before an English listening test and improve listening performance. The experiment was carried out with two intact English language classes. In one class, the participants of Class 1 (English majors) received either a 5-min mindfulness or a 5-min listening activation intervention immediately before a mid-term English listening exam, while Class 2 (law majors) received either a 5-min mindfulness or a 5-min rest intervention. The results showed that a brief intervention focused on mindfulness had a significant effect on decreasing participants' levels of state

listening anxiety, while the listening activation intervention had no such effect. In addition, a 5-min rest intervention, which was initially planned in the experiment as a control intervention, also showed unexpected effect on decreasing state listening anxiety. However, no significant difference in listening performance was found between the groups in either of the classes.

Keywords: English listening anxiety; test anxiety; mindfulness; listening activation

1. Introduction

Since the 1960s, researchers have been studying the effect of anxiety on foreign language (FL) learning. Foreign language anxiety (FLA) has been found in all aspects of foreign language learning, such as listening, speaking, reading as well as writing. It was also proved that FLA is inversely correlated with foreign language learning performance (Ewald, 2007; Dewaele & Al-Saraj, 2015; Dewaele & Tsui, 2013; Horwitz et al., 1986; MacIntyre & Gardner, 1991; Marcos-Llinas & Garau, 2009; Tallon, 2009). Among all these aspects, listening is a significant factor in arousing students' anxiety towards listening-related tasks (Horwitz et al., 1986), which is called foreign language listening anxiety (FLLA). FLLA is considered as situation-specific anxiety, which is triggered when one conducts specific listening-related activities (Scarcella & Oxford, 1992). Previous research has experimentally confirmed that listening anxiety is negatively correlated with listening performance (Elkhafaifi, 2005; Eastman, 1991; Golchi, 2012; Kim, 2002; Mills et al., 2006; Serraj & Noordin, 2013).

Chinese English as a foreign language (EFL) learners are generally found to suffer from English listening anxiety in college (H. L. Zhang, 2013; Zhan & Wang, 2010; Liu & Zhang, 2011; Wang & Cha, 2019). Recently, some Chinese researchers have started to look into English listening anxiety among college students and confirmed that listening anxiety has a negative effect on English listening performance among Chinese EFL learners (Deng, 2015; Liu, 2016; Pan et al., 2019; Wang, 2010; Xu & Huang, 2018; X. Zhang, 2013). Therefore, approaches to helping college students reduce English listening anxiety are worth exploring.

Mindfulness is a recently focused approach to helping reduce anxiety, which is one of the specific types of meditation. Previous research showed that mindfulness may help improve attention and reduce anxiety, thus facilitating academic performance (Bamber & Kraenzle Schneider, 2016; Beauchemin et al., 2008; Jhaet al., 2007; Napoli et al., 2005; Miller et al., 1995). However, empirical studies examining the effect of mindfulness on English listening anxiety still remain sparse. Besides, in China, learners are advised to listen to some English materials before an

English listening test, which is a popularly adopted practice to relieve listening anxiety. Given wide adoption of this test in English classes in China, there seems to be little experimental evidence to verify its effectiveness. Therefore, the present study attempts to examine whether a brief intervention focuses on mindfulness or listening activation can help college students reduce state listening anxiety before an English listening test and improve their listening performance.

1. Literature review

FLLA was defined as the fear which occurs when one is required to use a second language in which he or she is not completely proficient (MacIntyre & Gardner, 1994). Quite a few studies have found various reasons related to college students' listening anxiety. Kim and Cha (2013) found many factors affecting students' anxiety over listening tasks, such as listening materials with accents or dialects, prolonged sounds, unfamiliar vocabulary or presented in at fast speed, etc. Besides, poor performance, fast speed, being scored and distraction stood out from all 38 items of factors producing listening anxiety which were found to be the most anxiety-inducing causes by Marzec-Stawiarska (2013). X. Zhang (2013) classified the most significant factors related to FLLA into three categories: listening-anxiety, self-belief and decoding skills.

FLLA is also regarded as a kind of situation-specific anxiety, which is triggered when one performs specific listening-related activities (Scarcella & Oxford, 1992). It is an aggregation of diverse emotions consisting of anxiousness, sadness, intimidation, confidence and satisfaction (X. Zhang, 2013). Previous research has experimentally confirmed that listening anxiety is negatively correlated with listening performance (Elkhafaifi, 2005; Eastman, 1991; Golchi, 2012; Kim, 2002; Mills et al., 2006; Serraj & Noordin, 2013). Eastman (1991) carried out a survey of students' anxious feelings in listening classroom and concluded that those who claimed to be tenser during listening activities performed poorer than those who claimed to be more focused. Kim (2002) adopted the *Foreign Language Listening Anxiety Scale* (FLLAS) and the *Foreign Language Classroom Anxiety Scale* (FLCAS) to measure 253 Korean EFL learners' anxiety and suggested that students with both higher listening anxiety and higher general language anxiety scored lower on the TOFEL listening test. Another study by Golchi (2012) correlated 63 Iranian IELTS learners' FLLA with their IELTS scores, showing that lower-anxious learners performed better in the IELTS listening test. Such results show that foreign language listening anxiety can hinder foreign language performance.

Listening comprehension ability is an essential part in the process of acquiring a foreign language and has been proved to facilitate the development of other target language (TL) skills (Vandergrift, 1999). According to Gilman and Moody

(1984), listening accounts for 40%-50% time during interpersonal communication. Rankin (1928) probed into the lives of people from all walks of life in sixty days and found listening to be the most frequently used of the four arts of language (listening, speaking, reading, writing). Besides, listening plays an important role in language classroom. Peterson (2001) wrote in his book that "Through listening, learners can build the interworking of language systems at various levels and thus establish a base for more fluent productive skills" (p. 87). Hasan (2000) stated that listening comprehension provides prior conditions for the improvement of other TL abilities.

As the most widely spoken language in the world, English is so important in the education curriculum in China that it is designed as a compulsory course from elementary school to college. However, at the same time, listening is one of the most challenging skills for Chinese EFL learners to master (H. L. Zhang, 2013). Dai (2014) compared Chinese EFL learners' listening and reading comprehension performances using two types of English language materials, an essay and a radio report. The results demonstrated that listening groups always gained significantly lower scores than reading groups regardless of the material types. Similarly, Gu and Yin (2017) researched the cognitive load in English discourse comprehension processes and found that when students were given the same amount of time to listen or read the same passage, the listening participants under-performed the reading peers. In other words, Chinese EFL learners' listening comprehension abilities fall behind their reading comprehension abilities. Besides, statistics also show that there still exists a gap in listening levels between Chinese EFL learners and other EFL learners from other countries and regions. The statistics provided by IELTS indicate that the average score of China's IELTS Listening Test in 2021 was 6.04. Compared with EFL learners from other countries and regions, such as Brazil (7.04), Canada (7.27), Egypt (6.95), France (6.99), Ghana (7.08), Greece (7.65), the score 6.04 might hinder Chinese EFL learners' competitiveness compared with other international applicants when applying for world famous universities (International English Language Testing System, 2022). Chinese EFL learners have been generally found to suffer from English listening anxiety in college (Liu & Zhang, 2011; Wang & Cha, 2019; H. L. Zhang, 2013; Zhan & Wang, 2010). Regardless of gender, major, or their years of learning English, more than 95% of college EFL learners surveyed were reported to be suffering from both listening anxiety and general foreign language anxiety (Zhan & Wang, 2010). Liu and Zhang (2011) found that most of non-English majors investigated had different levels of English listening anxiety. In addition, English listening anxiety existed among both high-proficiency and low-proficiency English-major students (Wang & Cha, 2019). Recently, some Chinese researchers have started to look into English listening anxiety among college students and confirmed that listening anxiety has a negative effect on English listening performance among Chinese EFL

learners (Deng, 2015; Liu, 2016; Pan et al., 2019; Wang, 2010; Xu & Huang, 2018; X. Zhang, 2013). Therefore, approaches helping college students reduce English listening anxiety are worth exploring. It is also hoped that learners' listening performance will be improved when they are more relaxed and can better focus.

There is some research that has investigated ways of reducing listening anxiety. Mendelsohn (1994) found that foreign language listening strategy use (FLLSU) had a positive impact on improving learners' performance, enabling them to learn more autonomously and reducing FLLA. Liu (2016) applied FLLSU in the case of Chinese learners and found it useful for both low- and high-proficiency EFL learners. It also proved to be a good predictor of English listening test performance. Some other brief and effective approaches are also discussed in the literature, such as progressive relaxation, deep breathing, musicotherapy and meditation (Oxford, 1990).

Mindfulness is an approach to helping reduce anxiety that has attracted considerable attention in recent years. Mindfulness is defined as "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 2003, p. 145). It is one of the specific types of meditation. Empirical studies have shown that mindfulness may help improve attention and reduce anxiety, thus facilitating academic performance. For example, focused attention mindfulness, which allows sustaining attention on a specified object or thought, is considered to facilitate directing and sustaining attention, detecting mind distraction, and refocusing attention (Jhaet al., 2007; Napoli et al., 2005). Besides, mindfulness has been shown to reduce anxiety and stress in college setting (Bamber & Kraenzle Schneider, 2016). A longitudinal and experimentally controlled study conducted by Miller et al. (1995) suggested that mindfulness can be effective in relieving anxiety and can have long-term benefits. It is quite possible that mindfulness may also contribute to lowering cognitive interference, which has been reflected through the measures of state anxiety (Beauchemin et al., 2008).

Several recent studies have indicated that a brief mindfulness-focused intervention that was introduced before a higher-education course lecture can enhance performance on a quiz related to lecture content given immediately after the lecture. For example, Ramsburg and Youmans (2014) conducted three randomized experiments in higher-education classroom. In each experiment, the students who were demanded to practice a six-minute mindfulness before a course lecture had higher scores on the quizzes given immediately following the lecture than the students who were asked to conduct a six-minute relaxation. Replicating and extending the experiment of Ramsburg and Youmans (2014), Calma-Birling and Gurung (2017) found that a five-minute pre-lecture mindfulness could improve students' performance on post-lecture quizzes, but have no effect on the unit exam that cumulatively covered the previous lecture content.

They concluded that a small dosage of mindfulness was sufficient to improve short-term knowledge retention while insufficient to improve long-term one. However, in contrast to prior studies, Baranski and Was (2019) demonstrated that the academic performance of the mindfulness group was not significantly different from the relaxation group either on post-lecture quizzes or on the cumulative exam. In short, there was no effect of mindfulness observed on both short-term and long-term academic performance. Therefore, considering the real-world utility of enhancing academic performance through such a brief, convenient and economical way, it is necessary to replicate and extend these findings. However, few studies have focused on the effect of mindfulness on English listening anxiety so far. Pan, Wang and Chen (2019) conducted an experiment, in which 40 vocational students were trained in mindfulness once a week for 7 weeks. The results showed that mindfulness can reduce listening anxiety and improve the English listening comprehension. Nevertheless, empirical studies examining the effect of mindfulness on English listening anxiety still remain sparse. Besides, the study by Pan et al. (2019) included a relatively lengthy treatment (7 weeks), leaving its short-term effect (within several minutes) largely unexplored.

Taken together, previous studies have shown that mindfulness facilitates sustaining attention, which is conducive to the acquisition of information in listening. It is also believed to be able to relieve listening anxiety. Therefore, one of the purposes of this study is to add to the existing literature by exploring whether a brief mindfulness intervention can help college students reduce their listening anxiety and improve their listening performance in a following test. Besides, there is another popularly adopted practice to relieve foreign language listening anxiety in English classrooms in China. That is, learners are advised to listen to some English materials before an English listening exercise or test. It is generally accepted that this practice could minimize EFL learners' English listening anxiety by activating the English language channel with the provision of an English listening environment. It is typically applied before an English listening test. In spite of the wide adoption of this practice in English classes in China, there seems to be little experimental evidence to verify its effectiveness. Therefore, the second purpose of this experiment is to examine whether listening to English materials before an English listening test can effectively reduce English listening anxiety and improve listening performance. In this study, this practice is referred to as "listening activation."

The *State-Trait Anxiety Inventory* (STAI), which was compiled by Spielberger in 1970 and revised in 1983, is a self-evaluation questionnaire characterized by its high validity, simplicity and convenience, commonly used as a measure for trait and state anxiety. The most frequently-used version STAI-Y (Spielberger et al., 1983) is composed of two parts, the *STAI-state form* and the *STAI-trait form*, distinguishing

transient emotional anxiety and trait anxiety tendency. The STAI can directly reflect the respondent's anxious feelings, thus serving different research purposes and clinical practices. Spielberger et al. (1983) conceptualized state anxiety as a transitory emotional state or condition that varies in intensity and fluctuates over time. It is situation-specific and shows how the respondent feels in response to the situation at the present moment. The STAI-state form is used to reflect the respondent's current or transitory anxiety, or to say, how one feels at the moment. It includes 20 items like "I am tense," "I feel frightened," "I feel calm" and "I feel satisfied." All items are rated on a 4-point scale (i.e., from "not at all" to "very much so"). Half of them describe negative feelings and thus higher scores indicate greater anxiety; the other half describe positive feelings and thus lower scores indicate greater anxiety. Trait anxiety refers to a relatively stable disposition related to personality, which is described as fixed and persistent (Spielberger et al., 1983). The STAI-trait form reflects the respondent's constant or general anxiety, including 20 items like "I worry too much over something that really doesn't matter," "I wish I could be as happy as others seem to be" and "I am a steady person." All items are rated on a 4-point scale (e.g., from "almost never" to "almost always"). Eleven items describe negative feelings and thus higher scores indicate greater anxiety; nine describe positive feelings and thus lower scores indicate greater anxiety. The total score of the STAI-trait form ranges from 20 to 80. Score > 50 suggests severe trait anxiety level (Spielberger et al., 1983); thus a trait anxiety score of 50 is regarded as a cut-off point.

Many scholars have come up with adaptations of STAI and shortened it according to their needs. Marteau and Bekker (1992) developed a six-item shortened version scale of STAI-state and proved its similar reliability and accuracy to the full version. Some scholars also chose to use this shortened version of STAI-state form in later studies (Foa et al., 1989; McNally et al., 1989). These investigations indicate that a short version of the STAI-state anxiety form is also acceptable, valid, and even favorable to suit specific experimental needs, particularly in situations where respondents cannot accept or stand long assessments. As the current study aimed to verify the effectiveness of an approach involving a brief intervention to help reduce English listening anxiety before a listening test, state anxiety was measured before and after the interventions to reflect their effects. Moreover, it was decided to use the short version of the *State Anxiety Questionnaire* because a quick measure of the state anxiety was needed to minimize the impact or disturbance brought about by the questionnaires.

On the other hand, it is important to point out that in addition to English listening anxiety, there may exist another type of anxiety before the listening test, that is, test anxiety. English listening comprehension might be affected by two components: English listening anxiety and test anxiety (Vandergrift, 2015). Test anxiety is defined as a "special case of general anxiety consisting of phenomenological, physiological,

and behavioral responses related to a fear of failure and to experience of evaluation or testing" (Sieber, 1980, p. 17-18). Zeidner (1998), in turn, conceptualized test anxiety as a collection of cognitive, physiological, and behavioral reactions that come along with worry about potential bad outcomes or failure on examinations or in other comparable evaluation settings. A statistically significant negative correlation was observed between test anxiety and academic achievement of EFL learners. For example, in the case of introductory-level foreign language students, Horwitz et al. (1986) concluded that test anxiety demonstrated a negative and extremely weak connection with final marks. In another study by Rezazadeh and Tavakoli (2009), a negative relationship between test anxiety and academic achievement was found in a group of 110 undergraduate students from an Iranian EFL University. Among a sample of 402 Chinese EFL test takers, Xu and Huang (2018) revealed the negative effect of both test anxiety and listening anxiety on listening test score mediated by listening metacognitive awareness. Previous research has proved that test anxiety is closely related to foreign language anxiety (Bailey et al., 2000; Cakici, 2016; Önem, 2010; Tsai, 2013). Cakici (2016) argued that test anxiety and foreign language anxiety, together with state and trait anxiety, seem to be related to each other. To be specific, as an English listening test can be the source of anxiety, it is argued that state anxiety and trait anxiety may exist as the common factor between English listening anxiety and test anxiety, and a high-degree state anxiety may include other types of anxiety. Therefore, the state anxiety questionnaire applied before the listening test could reflect a mixed anxiety of English listening and test anxiety.

Based on the gaps the literature review presented above, the current study was conducted to answer two research questions:

1. Does a brief mindfulness intervention help college students reduce listening anxiety before an English listening test and improve their listening performance?
2. Does a listening activation intervention help college students reduce listening anxiety before an English listening test and improve their listening performance?

It was hypothesized that a brief mindfulness and listening activation can help college students reduce state listening anxiety before an English listening test and improve their listening performance.

3. Method

3.1. Participants

The participants consisted of 92 students from a university in East China (71 females, 20 males). Among them, 51 were juniors majoring in English (Class 1; 44

females, 7 males), 41 were sophomores majoring in Law (Class 2; 27 females, 14 males). The mean age was 20.67 (*SD* = 0.72). Students in Class 2 were given English major courses because they were ranked the top 10% in English proficiency among the law major sophomores. Both of these two classes took a course called English Listening and Speaking conducted by the same instructor using the same syllabus, 90 minutes a time and once a week. All participants were high-intermediate level learners of English. Participants received extra course credits to compensate their time and effort.

3.2. Materials and Measures

3.2.1. English listening comprehension test

The mid-term English listening test contained 50 multiple choices questions in total, 2 points for each question, making the full score 100 points. The mid-term listening test examined English language listening comprehension on different listening materials such as news reports, interviews, passages, and conversations. The listening comprehension question formats, difficulty levels, and requirements were familiar to the participants since students used similar listening questions for class practice.

3.2.2. State anxiety questionnaire (SAQ)

The current study used a shortened version of the original STAI-state form from Spielberger et al. (1983), the state anxiety questionnaire. It contained only 10 items randomly selected from the original 20-item STAI-state form (see Appendix A for the English version). It was shortened to suit the needs in the current experiment. It was translated into Chinese when given to the participants (See Appendix B for the Chinese version). The intervention was applied before the listening test and needed to remain brief for only 5 mins. The state anxiety questionnaire was applied before and after the 5-min interventions to measure the changes of state anxiety after the interventions. Therefore, the experiment needed a quick measure of the state anxiety to minimize the impact or disturbance brought by the questionnaires. The full 20-item STAI-state form would have taken too much time, so a shortened version was favorable in this case. With 10 items, participants were able to complete the questionnaire within 1 min. The questionnaire was also shortened to care for the participants because to them, there was a mid-term listening test to take.

In the state anxiety questionnaire, all items are rated on a 4-point scale (i.e., from “not at all” to “very much so”). Questions 1, 3, 5, 6, 7 and 8 describe

positive feelings, that is, lower scores indicate greater anxiety. Questions 2, 4, 9 and 10 describe negative feelings, thus higher scores indicate greater anxiety. The state anxiety questionnaire used after the intervention included two more questions: "What kind of practice did you do within 5 minutes in 5 minutes?" and "In what degree did you follow the instruction given?" With their help, participants were asked to report which intervention they took and how well they followed the instruction. The participants that reported an extremely low cooperation ("1" out of "4") were removed from the later data analysis.

3.2.3. Trait anxiety questionnaire (TAQ)

This study used the full Chinese version of the STAI-trait form from Spielberger STAI-Y (Wang et al., 1999) to reflect the respondent's constant or general anxiety, including 20 items like "I worry too much over something that really doesn't matter," "I wish I could be as happy as others seem to be" and "I am a steady person." All items are rated on a 4-point scale (i.e., from "almost never" to "almost always"). Eleven items describe negative feelings and thus higher scores indicate greater anxiety; nine describe positive feelings and thus lower scores indicate greater anxiety. The STAI-trait form was applied one week before the mid-term exam day to reduce the possible impact of the mid-term exam on participants' trait anxiety level. This could also help to reduce the distraction caused by the experiment on the exam day.

3.2.4. The activation audio

The audio selected for the practice of listening activation was a 5-min news report from AP News. The selected audio was on the topic of Covid-19. Participants were expected to be familiar with this topic and the related vocabulary since news reports on the same topic were repeatedly used as class materials. The news report used in this experiment was carefully selected to make sure that the difficulty level and reporting speed is acceptable to the participants. Otherwise, it may lead to an unwanted reaction, increasing anxiety.

3.3. Design and procedures

All students enrolled in the course of English Listening and Speaking needed to take a mid-term examination. The results of the mid-term examination would account for 10% of the students' final course grades. The current study used this mid-term exam as the English language listening test. A week before the exam, a research assistant went to the classes to give a brief introduction of the study

and invited students to participate in the study. Students were informed that the aim of this study was to examine the effect of two different practices on helping reduce listening anxiety before the exam. They were also informed that participation was voluntary and it would be rewarded with extra course credit. Participants signed a consent form and filled the STAI-trait form digitally using an online survey app of Wenjuanxing on their smart phones, an app providing online survey functions equivalent to Google Form. The STAI-trait form was filled a week before the midterm to capture participants' normal trait anxiety level.

On the exam day, the two participating classes took the test separately on the same day: one in the morning and the other in the afternoon. Even if both participating classes were taking the same course with the same instructor, the two classes were from different majors and different grades (Class 1, English, juniors; Class 2, Law, sophomores) thus it was inappropriate to conduct the control experiment between two classes. Instead, each class was divided into two groups, and the control experiment was carried out between two groups in each class respectively. In Class 1, the participants were randomly divided into two groups: the mindfulness group (25 students) and the listening activation group (26 students). The state anxiety questionnaire (pre-intervention) was provided via the phone app of Wenjuanxing (an app similar to SurveyMonkey) and students were asked to fill the questionnaire based on their momentary true feelings. It took the participants about 1 min to fill the SAQ. Then, the research assistant gave the instructions to the two groups separately and set a 5-min timer to start the interventions. The mindfulness intervention in the experiment was adapted from Ramsburg and Youmans's (2014) study. Participants in the mindfulness group were required to sit with a straight-up back and closed eyes, and then started to silently count their breaths, from 1 to 10, then back to 1. If one lost his count, he was instructed to return to 1 and restart his breath-counting circle. The participants in the listening activation group were instructed to put on the earphones on desks, and listen to the selected English language audio attentively. Five minutes later, the assistant stopped the intervention and immediately gave out another SAQ (post-intervention). Similarly, students were asked to fill it based on their true feelings at that moment. After all questionnaires were collected, the mid-term listening test began.

The participants in Class 2 were randomly divided into the mindfulness group (17 students) and the rest group (24 students). The procedure was similar. Firstly, students filled out the state anxiety questionnaire (pre-intervention). Then, during the 5-min intervention, participants in the rest group were instructed to sit in a comfortable position, keep eyes open, stay quiet, and rest. The mindfulness group kept eyes close and silently counted their breaths. Immediately after intervention, participants were asked to complete the state anxiety questionnaire

(post-intervention). Once all questionnaires were collected, students began to take the test. The whole experimental process is presented in Figure 1.

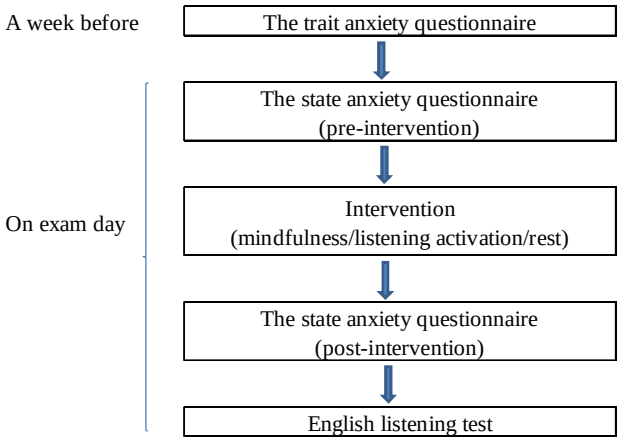

Figure 1 Experimental flow chart

4. Results

Descriptive statistics, repeated ANOVA, and paired sample *t*-tests were performed to analyze the data using IBM SPSS Statistics 24.

4.1. State anxiety

The state anxiety questionnaire used in this experiment was a 10-item 4-point Likert scale, in which "1" represents "not at all" and "4" refers to "very much so." A lower score indicated a higher anxiety state in Questions 1, 3, 5, 6, 7, 8, and a higher score indicated higher anxiety state in Questions 2, 4, 9, 10. The scores on Questions 1, 3, 5, 6, 7, and 8 were reversed for analysis so a higher score will always refer to higher anxiety throughout the questionnaire. Thus, the total score of the current state anxiety questionnaire ranged from 10 to 40, representing the state anxiety level of the participants.

Altogether 92 sets of state anxiety responses were received. Among the 92 respondents, 4 of them rated "2" out of "4" regarding how well they followed the instruction during the interventions, 40 respondents rated "3," and 48 respondents rated "4" for full cooperation. No respondent rated "1" for no cooperation or little cooperation. Thus all 92 sets of responses were included in the following state anxiety analysis. The means and standard deviations of state anxiety scores before and after the interventions across classes and groups are presented in Table 1.

Table 1 Mean and SD of pre and post intervention state anxiety scores

Class	Group	*N*	Pre-intervention *M* (*SD*)	Post-intervention *M* (*SD*)
Class 1	Mindfulness	25	25.12 (4.78)	22.56 (5.05)
	Listening Activation	26	25.54 (5.50)	25.62 (5.01)
Class 2	Mindfulness	17	24.12 (4.14)	18.14 (3.12)
	Rest	24	22.58 (5.58)	19.96 (5.55)

Repeated measures ANOVA tests were performed to compare the effect of interventions on participants' state anxiety in both classes (see Figure 2 and Figure 3). Both Class 1 and Class 2 models were significant with the Greenhouse-Geisser correction $F(1, 49) = 4.57$, $p = .04$, $\eta^2 = .09$ in Class 1, and $F(1, 39) = 37.77$, $p < .001$, $\eta^2 = .49$ in Class 2. Thus, there were statistically significant effects of interventions on state anxiety scores in both classes. There were also significant between-subjects effects in both classes, $F(1,49) = 1435.76$, $p < .001$ in Class 1, and $F(1, 39) = 937.42$, $p < .001$ in Class 2.

Paired samples *t*-tests were run to examine whether there were significant differences in state anxiety between the mindfulness group and the listening activation group in Class 1 before and after the interventions. The analysis results showed no significant difference in state anxiety between the mindfulness group ($M = 25.12$, $SD = 4.78$) and the listening activation group ($M = 25.54$, $SD = 5.50$) before the intervention, $t(49) = -.29$, $p = .77$. This means before the intervention, both groups in Class 1 showed the same level of state anxiety. After the intervention, the mindfulness group ($M = 22.56$, $SD = 5.05$) showed a significantly lower state anxiety level than the listening activation group in Class 1 ($M = 25.62$, $SD = 5.01$), $t(49) = -2.6$, $p = .035$.

Paired-sample *t*-tests were performed to compare the state anxiety level before and after intervention in the mindfulness group and the listening activation group in Class 1. It was found that the decrease in state anxiety level from before ($M = 25.12$, $SD = 4.78$) to after intervention ($M = 22.56$, $SD = 5.05$) in the mindfulness group in Class 1 was significant, $t(24) = 3.56$, $p=.002$. Thus, the state anxiety level in the mindfulness group in Class 1 dropped significantly after the intervention; however, the state anxiety level in the listening activation group stayed the same. Therefore, it can be concluded that the intervention focused on mindfulness effectively reduced state anxiety in Class 1 but the intervention of listening activation didn't achieve that effect.

The tests were performed to examine the effect of interventions on the state anxiety levels of the mindfulness group and the rest group in Class 2. It was found that there was no significant differences in the state anxiety levels between the mindfulness group and the rest group ($t(39) = .96$, $p = .34$) before the interventions ($t(39) = -.96$, $p = .34$), or after the intervention ($t(39) = 1.04$, $p =$

.31. This means that, before and after the interventions, the two groups in Class 2 showed similar levels of state anxiety. But the state anxiety level in the mindfulness group dropped significantly from 24.12 to 18.41 after mindfulness intervention, $t(16) = 5.51$, $p<.001$. The state anxiety level in the rest group also decreased significantly from 22.58 to 19.96 after rest intervention, $t(23) = 3.00$, $p = .006$ in Class 2. Thus, both mindfulness and rest interventions effectively reduced state anxiety.

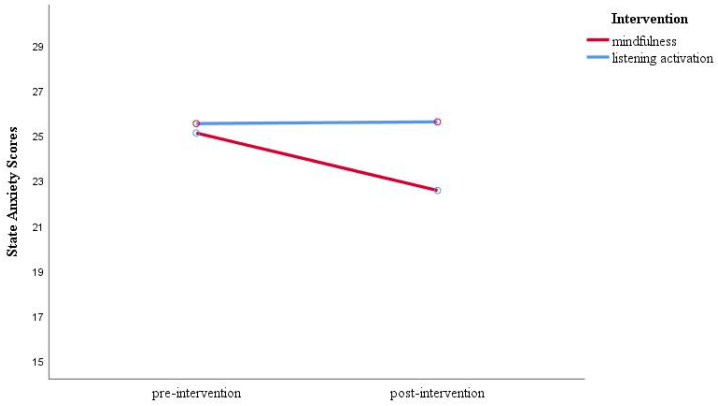

Figure 2 Mean state anxiety scores in Class 1 before and after interventions

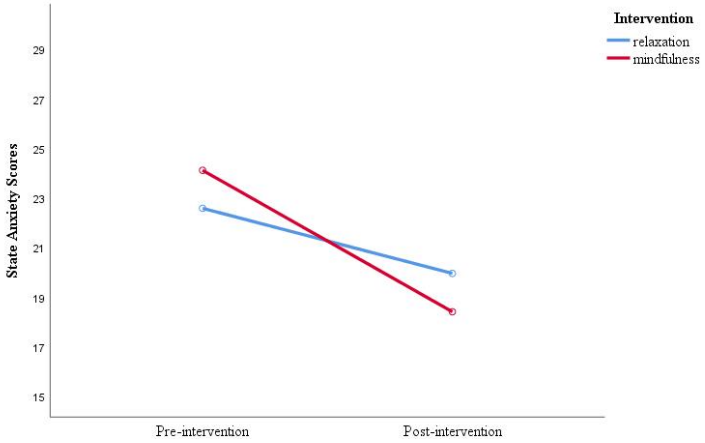

Figure 3 Mean state anxiety scores in Class 2 before and after interventions

4.2. Trait anxiety

Among the 20 items in the trait anxiety questionnaire, 9 described positive feelings and their scores were reversed to reflect the level of anxiety. Thus, the total

score of the TAQ ranged from 20 to 80, with higher scores indicating higher trait anxiety levels. There were 82 valid returns (20 male) of the trait anxiety questionnaire. Shapiro-Wilk test of normality was conducted and the results indicated that the trait anxiety scores were normally distributed in the sample (W = .98, p = .21). The mean trait anxiety score for all 82 valid returns was 47.44 (SD = 8.46), M = 44.45 (SD = 8.46, N = 20) for male, and M = 48.40 (SD = 8.29, N = 62) for female. The gender difference in trait anxiety score was not statistically significant but reaching significance, $t(80) = 1.85$, p = .69. The Class 1 mean trait anxiety score was 49.67 (SD = 7.07, N = 43). The Class 2 mean trait anxiety score was 44.97 (SD = 9.23, N = 39). The class difference in trait anxiety score was significant, $t(80) = 2.60$, p = .01. This means that Class 1 manifested a significantly higher trait anxiety than Class 2, but they both fell in an intermediate trait anxiety range (cut point of 50; Spielberger et al., 1983).

4.3. English listening test scores

The mean English listening test score in Class 1 was 73.77 (SD = 9.46, N = 51). The mean test score in Class 2 was 75.90 (SD = 10.11, N = 41). There was no significant difference in English listening test scores between the two classes, $t(90) = -1.04$, p = .30. The mean and SD of the English listening test scores across classes and groups are presented in Table 2. There was no significant difference in English listening test scores across the intervention groups either.

Table 2 The mean and SD of the English listening test scores across classes and groups

Class	Group	*N*	Listening Score *M* (*SD*)
Class 1	Mindfulness	25	74.08 (9.89)
	Listening Activation	26	73.48 (9.21)
Class 2	Mindfulness	17	76.13 (11.63)
	Rest	24	75.74 (9.14)

5. Discussion

Two experiments were conducted with two intact college English classes, an English-major class (Class 1) and a law-major class (Class 2), to answer the research questions of whether the brief interventions of mindfulness and listening activation can help college students reduce listening anxiety before an English listening test and improve students' listening performance. In terms of the effect on state anxiety, the results showed that participants' state anxiety levels decreased significantly after the intervention of mindfulness in both classes. This

means that the intervention focused on mindfulness was effective in reducing state anxiety before the listening test, which is corresponding to the previous hypothesis that a short-time intervention focused on mindfulness can help students reduce state anxiety. However, the intervention involving listening activation was not found to be effective as the participants' state anxiety level in Class 2 stayed the same before and after the listening activation intervention, failing to meet the previous expectation that the practice of listening activation prior to the test can help students feel less anxious. It was also surprising to find that the rest intervention, which was originally designed as a control, also helped participants to feel significantly less anxious. When it comes to the English listening test performance, no significant difference in test scores was found between the groups in Class 1 or Class 2, suggesting none of the brief interventions before the listening test could help to improve students' listening performance. On the whole, the current study showed that a brief mindfulness intervention can successfully help English learners reduce state listening anxiety before an English listening test, while the intervention focused on listening activation, which is widely recommended by EFL teachers in real-life situations in China, may not produce such effect. It also suggested that a brief rest prior to a listening test has the potential to help test-takers relax. However, none of the interventions seemed to help improve listening performance.

5.1. Effects on state listening anxiety

The effectiveness of mindfulness in reducing state listening anxiety was confirmed experimentally, which makes our study both theoretically and pedagogically meaningful. From the theoretical perspective, this study makes a contribution to the mindfulness-based literature in the aspect of reducing English listening anxiety in higher education in China. The previous research has already shown that mindfulness can effectively relieve anxiety (Beauchemin et al., 2008; Bamber & Kraenzle Schneider, 2016; Miller et al., 1995;). However, it seems that previous studies have mainly focused on long-term mindfulness and general anxiety. This study, which zoomed in on the context of English listening anxiety before an exam, provided more evidence to support the short-term effect of mindfulness in the state listening anxiety. It also serves as a supplement to previous research, which has suggested that long-term mindfulness training can alleviate college students' level of anxiety in listening class (Pan et al., 2019), in that it has shown that a brief mindfulness-focused intervention is also beneficial to English learners, especially before a listening test by reducing their state anxiety. At the pedagogical level, our research proved the feasibility of adopting a brief mindfulness before a listening test to help reduce learners' state anxiety.

In addition to its effectiveness, one big advantage of the mindfulness intervention is its brevity and feasibility. The whole process of implementing such an intervention in the current experiment lasted merely 5 minutes, which could minimize the disturbance of the class flow to a large extent. Besides, the stimulation of mindfulness is very simple, making it feasible for generalization and application in real-world teaching practice.

However, the effect of listening activation did not confirm our initial assumptions. It was hypothesized that listening to some English materials before the test can help participants feel less anxious. Nevertheless, it seems that the intervention involving listening activation (listening to English materials prior to a listening exam) was not as effective as expected with the current experimental evidence. However, due to its wide application and widespread belief in its effectiveness, it might deserve a second thought. One explanation of the current result is that the news report listening material used in the current intervention of listening activation triggered and intensified testing anxiety and since both testing anxiety and listening anxiety were reflected in the state anxiety score, the effect of listening activation was counterbalanced. Test anxiety was very likely to be mingled together with the listening anxiety and captured by the state anxiety questionnaire. Considering news reports are frequently used as listening materials in English language listening exams in China, listening to such materials might have unexpectedly intensified test anxiety, which could have resulted in an increase in state anxiety. Thus, even if listening activation could have helped reduce listening anxiety as hypothesized, its positive effect could have been counterbalanced by increased test anxiety, thus resulting in no decrease in state anxiety. In order to avoid such an unwanted effect, a less formal and lower-level listening material, such as a well-known short English story or fairy tale, should be used to avoid increasing test anxiety and better examine the effect of listening activation in reducing English listening anxiety. Future studies could verify the effect of the intervention of listening activation with a more appropriate material and it is also meaningful to examine the effects of different types of listening activation materials. The results of the current study failed to support the benefits of listening activation for reducing listening anxiety and thus its implementation in real-life educational settings cannot be recommended.

Another thing to note is that, to our surprise, students' state anxiety after rest intervention also decreased significantly. The rest intervention was initially planned in the experiment as a control intervention and was not expected to have a positive effect. It is possible that a brief (5 mins) rest before a listening test is effective in reducing state listening anxiety. However, it is hard to generalize an unexpected effect from a single experiment; thus further research should focus more on the effect of rest intervention. Nevertheless, it is possible

that the observed positive effect of the rest intervention resulted from the lack of a strict control of the instruction delivery during the experiment. When Class 2 was instructed to apply either the mindfulness or rest intervention, the instructions were announced to the whole class and the rest group might have also followed the mindfulness instruction unconsciously since they were asked to rest and do nothing. Future studies could better plan the delivery of instructions to different groups of participants. For instance, instructions can be delivered in written form instead of a whole-class announcement so that students in different groups are not unduly influenced.

5.2. Effects on listening performance

In the current experiments, participants' English listening test scores were not significantly different across the groups. This means that, even if the interventions enhancing mindfulness and rest helped reduce students' state anxiety before the listening test, the treatment failed to improve English listening performance. We assumed that the brief mindfulness intervention was able to calm learners down in that 5 mins but once the test started, the anxiety resumed and the calming effect was diminished. It is also possible that the dosage of a brief mindfulness intervention was not enough to maintain its effect through the entire test. According to Creswell (2016), mindfulness practice may follow the same pattern as an aerobic exercise; in other words, larger doses and more frequent practices are more likely to result in more significant effects that can be measured. Pan, Wang, and Chen's study (2019) demonstrated the effectiveness of a long-term (7 weeks) mindfulness training in improving students' English listening performance.

5.3. Trait anxiety

In terms of trait anxiety, both classes fell in an intermediate trait anxiety range (< the cut-off point of 50), which means the participants are comparable when applying the interventions. But Class 1 had a significantly higher trait anxiety than Class 2. Class 1 seemed to be suffering from higher anxiety than Class 2. It may be because Class 1 was composed of junior students while Class 2 was in the third year in college. Juniors might face more stress than sophomores, such as future employment, certificate tests, postgraduate exam as well as graduation essay. On the other hand, sophomores might be more relaxed as they may have already well adapted to college life after the first year's transition period and they were not at the phase of worrying about their graduation and future yet.

5.4. Limitations

The current study includes some limitations. The research was conducted in a real-world teaching environment (i.e., a college classroom) rather than a controlled laboratory setting; thus some of the limitations are hard to avoid. First, the current study was limited by the size of the intact classes. Since the class size was 40 to 50 students, it was not possible to divide one intact class into 3 groups in order to keep around 20 participants in each intervention group. Thus, the current study used two intact classes (English major and law major class) and randomly divided students of each class into two intervention groups. It would be more favorable if future researchers could carry out the three interventions (mindfulness, listening activation and rest) in three intact parallel classes, or work with a large class so that participants could be randomly divided into three groups to conduct comparison experiments. This would make the comparison of the effects of the treatment more direct and convincing. Second, the current study involved a relatively small sample size. Further research with a larger sample size might be more credible to generalize the observed effects of mindfulness and listening activation. On the other hand, the instruction delivery during the intervention can be improved. For example, instructions can be delivered in written form to avoid distraction and interference.

6. Implications

The current study suggests that a brief (5-min) intervention focused on mindfulness prior to an English listening test can effectively help reduce English learners' state anxiety, while listening to English materials for the same amount of time seems to bring no such benefit. As high-level listening anxiety is more likely to lead to a lower listening performance (Cha & Wang, 2019), English teachers are advised to take advantage of our results to assist students in their teaching context. All it takes is a brief (5-10 mins) mindfulness intervention before an English listening test. It should be noted that in order to guarantee the quality of such mindfulness practice, teachers should introduce the benefits and operational method of mindfulness in advance (through videos or reading materials) so that students would be more prepared and willing to practice it consciously and voluntarily. Besides, the duration of the mindfulness intervention can be adjusted flexibly according to the teacher's syllabus and students' level of anxiety, and a brief (5-10 mins) mindfulness-focused session is quite commonly used and has been found to be effective in extant literature (Baranski & Was, 2019; Calma-Birling & Gurung, 2017; Ramsburg & Youmans, 2014). However, neither of the brief interventions, whether focused on mindfulness or rest, resulted in

better English listening test performance in the current study. It might take more practice to achieve the utmost goal of improving English listening test performance. By contrast, the current study indicated that letting students listen to English materials, specifically news report, prior to a listening test has no effect on anxiety reduction and may even arouse anxious reactions. Thus, listening to news report prior to the listening test is not recommended. As our results also showed the effect of rest on decreasing state anxiety, teachers are also recommended to play some soft music or just let students take a rest before the listening test.

7. Conclusion

The present study investigated the effectiveness of two interventions, mindfulness and listening activation, in helping college students reduce listening anxiety before an English listening test and improve listening performance. The results showed that a brief mindfulness-raising session prior to the test had a significant effect on decreasing participants' levels of state anxiety, while the listening activation intervention of listening to a news report did not show such positive effect. In addition, a 5-min rest intervention, which was initially planned in the experiment as a control intervention, also showed an unexpected effect on decreasing state listening anxiety. However, no significant difference in listening performance was found across the classes and groups. Thus, the one-time, very brief interventions were not able to help students improve their English listening performance.

The purpose of the current study was not only to examine the effectiveness of mindfulness and listening activation interventions, but also to offer empirically-supported pedagogical recommendations to English teachers on how to make use of such brief interventions to assist students in the EFL teaching context. The brevity and feasibility of mindfulness intervention make it favorable for more frequent application in real-world teaching practice as it can surely be valuable for English language teachers and learners.

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APPENDIX A

The State Anxiety Questionnaire (English version)

DIRECTIONS:
Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment.

1 – Not at all 2 – Somewhat 3 – Moderately so 4 – Very much so

1. I feel calm 1 2 3 4
2. I am tense 1 2 3 4
3. I feel satisfied 1 2 3 4
4. I feel frightened 1 2 3 4
5. I feel self-confident 1 2 3 4
6. I am relaxed 1 2 3 4
7. I feel steady 1 2 3 4
8. I feel pleasant 1 2 3 4
9. I am worried 1 2 3 4
10. I feel confused 1 2 3 4

APPENDIX B

状态焦虑量表 (Chinese Version)

问卷说明：

请阅读每一个陈述，选出最能体现你此时此刻心情的选项。

1 – **完全没有** 2 – **有些** 3 – **中等程度** 4 – **非常明**显 appendix

1. **我感到心情平静**.....1 2 3 4
2. **我是**紧张的.....1 2 3 4
3. **我感到**满意.....1 2 3 4
4. **我感到害怕**.....1 2 3 4
5. **我有自信心**.....1 2 3 4
6. **我是**轻松的.....1 2 3 4
7. **我感到**镇定.....1 2 3 4
8. **我感到愉快**.....1 2 3 4
9. **我是**烦恼的.....1 2 3 4
10. **我感到慌乱**.....1 2 3 4