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A Study on the Effects of Meditation on Anxiety and Foreign Language Vocabulary Learning

Abstract

This study aimed to find whether meditation can be effective in terms of anxiety and vocabulary learning in a foreign language learning context. To test this, an experimental pre-test and post-test study was designed. 61 students (14 male-47 female) from the English Language Teaching Department of a state university in Turkey were assigned into control and experiment groups to study a group of words in English. Before the experiment phase, an anxiety test (State-Trait Anxiety Inventory) and vocabulary test were administered to both groups as pre-tests to determine their level of anxiety and knowledge of words in the beginning. During the experiment phase, both groups were taught a group of target words by using the same teaching and learning materials for 2 hours in 2 weeks, but only the experiment group did meditation sessions before the experiment phase. After the experiment phase, the same anxiety and vocabulary tests were administered as post-tests and *t-test* was employed to compare the results. The post-test results showed that meditation led to a statistically significant difference in the anxiety and learning levels between two groups. Discussion of the results as well as implications for future research is presented.

Keywords: *Meditation, foreign language teaching, vocabulary learning, anxiety*

Introduction

Emotions are an integral part of language learning. As proposed by Krashen, the affective filter, “an imaginary barrier which prevents learners from acquiring language from the available input” (cited in Lightbown and Spada, 1999: 39), has a prominent effect on language learning. Simply, if a learner is feeling anxious or bored, s/he blocks the input and learning is inhibited. Much research has proved that high level of anxiety is negatively correlated with language learning and different language skills (e.g., Aida, 1994; Philips, 1992; Rodriguez & Abreu, 2003; Saito & Samimy, 1996; Saito et al., 1999; Zeidner, 1998; etc.). The same negative correlation can also be seen in Turkey. In Turkey, grammar and vocabulary teaching is strongly emphasized and in fact, they may be considered as one of the strongest skills of Turkish students studying a foreign language. As success is generally measured by grammar tests in Turkey (Işık, 2008), research focusing on results of grammar tests and anxiety levels also led to similar results as with the literature. For example, in a study conducted by Batumlu & Erden (2007), Turkish prep class students who received low mid-term grades were the ones who also had high anxiety levels. As part of another research by Öner & Gedikoğlu (2007), it was concluded that students with high anxiety levels had lower levels of success while low anxiety levels received high levels of success measured by grammar tests.

All these research suggest that the higher level of anxiety a language learner has, the more his/her learning and test performance seems to be effected negatively. Research focusing on other language skills such as listening or speaking also shows similar results to the studies focusing on grammar in Turkey. In other words, when compared with the anxiety level and more active language skills, the results are similar. For example, Bekleyen (2009) conducted a study focusing on listening anxiety of university students studying at English Language Teaching (ELT) department in Turkey and found high levels of listening anxiety among the learners. Similarly, in another study, Dalkılıç (2001) compared the scores obtained from English speaking course and anxiety level of university students and found a negative relationship between the scores and anxiety level and concluded that anxiety may act as an inhibitor in terms of successful speaking performance. Kılıç & Uçkun (2013) found that different listening text types had an effect on listening anxiety in foreign language. In other words, the more authentic a listening is, the more listening anxiety it leads to. However, results suggest that no matter which language aspect is being studied, anxiety seems to be present all the time in Turkish contexts of learning a foreign language.

Since there is much research on learning and anxiety, much research has also been conducted to reduce the effects of anxiety on learning. For example, studies on the affective aspects of learning led to creating language teaching methods such as the silent way, (de)suggestopedia and community language learning (Williams and Burden, 2000). As put forward by Williams & Burden (2000), "such methodologies focused on improving the conditions of the learning environment and enhancing personal security while lowering anxiety" (p. 37). In parallel with this, Önem (2012) suggested in his model that "as a result of study skills deficits or worrisome, self-related negative thoughts as well as negative expectancies, anxiety leads to cognitive interference, which in turn leads to an overflow in the limited capacity of working memory and negative effects on learning as well as success in the end" (p. 66). Since anxiety is thought to limit attention (Sarason, 1984; Semple et al., 2005; Tobias, 1986), keeping this approach at hand, research results seems to confirm that teaching individuals how to enhance self-management of attention (mindfulness training - Semple et al., 2005) and its effects on learning may be promising. In a study by Semple et al. (2005), a group of anxious children who received mindfulness treatment showed

improved anxiety symptoms. Similarly, Semple et al. (2009) reported reduction in anxiety symptoms and attention problems among children who received mindfulness training. In another study, Schonert-Reichl & Lawlor (2010) revealed that adolescents who received mindfulness education increased optimism and rated higher social competent behavior scores given by teachers. As a reflection of such positive support to reduce the negative effects of anxiety, research suggests that positive results in terms of learning may be achieved. For example, McLean (2001) suggested that impact of meditation on learning can be seen in the readiness for learning, enhancing creative expression and spiritual development, which are key factors in learning. In other words, students' higher levels of readiness may help them to learn better while feeling effects of anxiety less. For instance, in a study, Beauchemin et al., (2008) focused on adolescents with learning disabilities and employed mindfulness meditation of a 5 week study. Results showed improvement in academic performance and social skills while a decrease in anxiety level. As part of the model proposed by Önem (2012), some relaxation techniques are suggested to be given some part during teaching a foreign language. It was also suggested that learners with high levels of anxiety would show increase in their academic success while they would experience a decrease in their anxiety level via employing the activities suggested by the model. In a recent study, Önem & Ergenç (2013) tested the model and obtained results to confirm the hypothesis of the model to increase success and decrease anxiety. Thus, meditation along with some other techniques led language learners to learn and perform better on exams without being inhibited negatively by anxiety.

Along with meditation, aromatherapy may also be promising in terms of reducing anxiety level. Without being affected by other stimuli or processes, smell can easily activate emotions because of the connections of the limbic system since Gabriel (1999) puts it, "the sense of smell is the only human sense directly linked to the limbic system of the brain, the center of emotions" (p. 288). In a review study, Lee et al. (2011) reported that most of the studies they reviewed indicated positive effects of aromatherapy and lavender was the most used scent. For instance, Fayazi et al. (2011) studied preoperative patients with anxiety and found that patients who inhaled lavender for 20 minutes showed lower anxiety than the ones who received placebo treatment. In a similar study, Kritsidima et al. (2010) compared the anxiety levels of patients waiting for a dental appointment

under lavender scent or not. Results showed a significantly lower level of current anxiety in the group smelling lavender. Shahnazi et al. (2012) focused on the relationship between anxiety and lavender in a hospital setting and found aromatherapy with lavender as effective for decreasing anxiety. Although research including lavender scent and anxiety seems to be focusing more on hospital contexts, it may be plausible to consider the results to be transferrable to learning contexts since educational contexts, especially foreign language education, has been reported to be an anxiety raising environment in many studies.

As Damasio (1994) mentioned, human brain is a system of systems. Apart from all magnificent and interrelated systems, memory as well as learning and emotions are closely connected with each other in human brain. Therefore, it is not surprising to see that emotions and learning go hand in hand as they are processed in the same structures of the brain. However, although research suggest that meditation and relaxation activities are effective in terms of learning (Freder, 1990; Beauchemin et al., 2008; McLean, 2001; Önem, 2012; Önem & Ergenç, 2013; Schonert-Reichl and Lawlor, 2010) and efficient learners use affective strategies such as relaxation, deep breath and meditation techniques (Ehrman and Oxford, 1990), such activities in classes are very rare to be seen. Yet, the literature offers insights into probable advantages of meditation and lavender scent. Therefore, in the light of the results of previous anxiety, meditation and aromatherapy research, it can be hypothesized that meditation supported by aromatherapy may have an effect on anxiety as well as foreign language learning. Also, lavender scent seems to be one of the most common scents used in aromatherapy studies and therefore, this research aims to find whether meditation supported by lavender scent will make a difference in terms of anxiety and learning in a foreign language learning context.

Method

Research Design

A control and experiment group study design with pre-test and post-test was used in this research. The study was designed to see whether meditation and lavender scent would make a difference on the control and experiment groups' level of anxiety and learning new vocabulary.

The overall research process took 4 weeks, including the pre- and post-test weeks, and the teaching/experiment phase took for two weeks.

Participants

The study group was composed of freshmen studying at an English Language Teaching department of a state university in Turkey. All the participants were accepted as having intermediate knowledge of English since they had been enrolled in the same department with respect to their university entrance exam results. Although there were other scores such as Turkish or Math in effect, English proficiency test scores made up the most of their university entrance exam scores. The students were told that there would be a study focusing on learning new vocabulary and anxiety levels, which in turn would be added to their mid-term scores at a rate of 30 percent and 61 students (14 male-47 female) took part in the research. Since the students were already taking the Advanced Reading Course in two separate groups on different days, the first group which took the course on Monday was considered as the control group (6 male-24 female) and the second group which took the course on Wednesday was considered as the experiment group (6 male-25 female).

Methods of Data Collection

Two tests were used in the study to see whether the participants knew the target vocabulary in English and to determine their level of anxiety. These tests were used as pre- and post-tests separately.

Vocabulary Test: The vocabulary test consisted of 15 matching items between words in English (a-o) and their meanings in English (1-15) and included a group of target vocabulary selected by the researcher on the criteria based on the usage rarity so the participants would have the least chance to have come across beforehand. At the beginning of the research, both groups were given the test as a pre-test to determine their level of knowledge about the target vocabulary. The words and meanings in the test were randomly scrambled again later and administered as the post-test the week after the teaching phase. The list of the words along with their meanings in the test can be seen in Table 1.

Table 1. The List of the Words and their Meanings Matched

| Target Words | Meanings |
|--------------|---------------|
| clairvoyance | foreknowledge |
| murky | dark |
| exasperate | disturb |
| austere | hard |
| jolt | shock |
| daunt | frighten |
| apathetic | indifferent |
| scorch | burn |
| morbid | unhealthy |
| lavish | generous |
| ostentatious | showy |
| dwindle | decrease |
| nudge | push |
| famished | hungry |
| pertinent | relevant |

Anxiety Questionnaire: In order to measure the levels of anxiety seen in both groups, Turkish version of State and Trait Anxiety Inventory (STAI-Spielberger, Gorsuch & Lushene, 1970) by Öner & Le Compte (1985) was used. STAI is composed of two sub questionnaires of State Anxiety and Trait Anxiety. State Anxiety inventory is designed to measure situational anxiety and Trait Anxiety inventory is used for measuring the personal and general anxiety levels of individuals. Both tests include 4 point scales of 20 items and this inventory is widely used in the field (Zeidner, 1998). As the Turkish version of STAI was reported to have high Cronbach alpha coefficients (.83 and .92 Öner & Le Compte, 1985), this questionnaire was accepted as a reliable tool to report the level of general anxiety. However, since the research aimed at measuring whether a difference in the anxiety level during learning has occurred or not, only the state anxiety inventory was used in this study as a pre-test and post-test. Also, no other anxiety questionnaires were administered since completing a lot of questionnaires might have distracted students and students might have had a tendency to answer the questions in a hurry to finish as early as possible.

Research Process

After administering the vocabulary test and the test anxiety inventory as pre-tests, the teaching phase began. Both groups received the same course materials prepared by the researcher. Focusing on the target words, the materials included reading passages, comprehension questions and vocabulary activities such as matching and guessing words. During the teaching phase, lessons were conducted on the basic techniques of communicative language teaching as stated by Larsen-Freeman (2000) and both groups received the same training. However, the experimental group did some meditation sessions as part of their course before the teaching phase. The researcher guided the students during the meditation phase and the students were asked to close their eyes, take deep breaths and imagine somewhere peaceful in their minds. For example, one week they were asked to imagine that they were on a beach on a sunny day with the people they love or they went on a picnic in the park another week. In addition to the meditation, the researcher used a room scent of lavender and an ordinary scent dispenser to contribute to the positive effects of mediation session. Since the classroom was 15 square meters, one device was used. During the meditation, the researcher set the device to disperse the room scent into the classroom in every 2 minutes. The meditation phase lasted for 10 minutes. After the meditation, students were handed out the learning material and the learning phase started. The control group, however, did not receive any meditation or scent treatment. After the learning phase, the anxiety and vocabulary tests were re-administered and results of the groups were compared.

Findings and Results

Before beginning the research process, the groups' level of knowledge and anxiety were compared. When the pre-test results of the anxiety questionnaire are examined, it can be seen that there was no statistically significant difference between the levels of anxiety of the control group ($M = 41.20$, $SD = 9.87$) and the experimental group in the beginning ($M = 43.74$, $SD = 8.84$, $t(59) = 1.06$, $p > .05$, $r = .14$). Therefore, it can be asserted that both groups had parallel anxiety levels and knowledge of the words. Yet, comparison of the post-test anxiety data between the control group ($M = 44.10$, $SD = 16.39$) and the experimental group ($M = 35.71$, $SD = 9.28$) showed a statistically significant difference ($t(59) = 2.47$, $p < .05$, $r = .31$). That is to say, the data suggest that the anxiety levels of the groups became different at the end of the research process. In fact, when the means of both groups' anxiety levels seen in the post-test scores are examined, the

experimental group scored lower. This suggests that they had a lower level of anxiety at the end of the research. Similarly, when the pre-test scores of the groups were compared within the groups, it was seen that there was not a statistically significant difference between the pre-test ($M = 41.20, SD = 9.87$) and post-test scores ($M = 44.10, SD = 16.39$) of the control group ($t(29) = .72, p > .05, r = .13$). However, a statistically significant difference is seen ($t(30) = 3.90, p < .001, r = .58$) between the pre-test ($M = 43.74, SD = 8.84$) and post-test scores ($M = 35.71, SD = 9.28$) of the experiment group.

As for the results of the vocabulary test, the difference between the level of knowledge of the control group ($M = 1.67, SD = 1.30$) and the experimental group ($M = 1.58, SD = 1.52$) was not statistically significant at the beginning of the study ($t(59) = 237, p > .05, r = .03$). This result suggested that both groups had similar knowledge of the words in the vocabulary test given at the beginning of the study. However, the results of the matching post-test showed a statistically significant difference ($t(59) = 2.41, p < .05, r = .30$) between the control group ($M = 12.70, SD = 2.97$) and experimental group ($M = 14.2, SD = 1.88$), which signals a better learning level seen in favor of the experimental group.

However, when the pre- and post-test results of vocabulary test are compared within the groups, interesting results are found. Both groups scored statistically significantly better in their post-tests than in the pre-test. For example, there is a statistically significant difference between the control group's pre-test scores ($M = 1.67, SD = 1.30$) and post-test scores of the control group ($M = 12.70, SD = 2.97, t(29) = 19.14, p < .001, r = .96$). Similarly, such a high difference is also seen between the pre-test scores ($M = 1.58, SD = 1.52$) and the post-test scores ($M = 14.23, SD = 1.88$) of the experimental group ($t(30) = 28.34, p < .001, r = .98$).

Discussion

Findings and Results

Before beginning the research process, the groups' level of knowledge and anxiety were compared. When the pre-test results of the anxiety questionnaire are examined, it can be seen that there was no statistically significant difference between the levels of anxiety of the control group ($M = 41.20, SD = 9.87$) and the experimental group in the beginning ($M = 43.74, SD = 8.84, t(59) =$

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Conclusion

The aim of this research was to see whether meditation, supported by aromatherapy, would have an effect on anxiety as well as vocabulary learning in a foreign language setting and as the results suggest, it can be concluded that meditation had a positive effect on both anxiety and learning in this particular foreign language learning setting.

Easy applications to reduce anxiety and effects can be regarded as highly valuable in English Language Teaching (ELT). Therefore, this research was designed to be as practical as possible to show professionals of ELT that anxiety can be controlled by an easy but hands-on approach. Meditation sessions and using scent can be effective in reducing anxiety and can be easily employed. Designing such activities is limited only to the expertise and needs of the teachers. For instance, although it was not used in this research, music can also be used to reduce anxiety. The model proposed by Önem (2012) suggested that music could also be effective in terms of reducing anxiety in ELT. In fact, along with relaxation and breath exercises, Önem and Ergenç (2013) used music in an English teaching classroom and reported similar promising results related to anxiety and success. By designing effective learning environments, if anxiety can be controlled, better learning can be achieved.

The results obtained from this study can be employed in terms of language teacher training and education. Apart from all regular courses offered at education faculties, courses on different topics such as classroom design or basic in-class psychological counseling can be added to the curriculum. Since much research proved that lowering anxiety may help an increase in learning and success, making necessary changes to make students more comfortable and less anxious via changing the class environment may be of great use to facilitate learning. Also, if both novice and experienced teachers can be made aware of different counseling and meditation techniques, they can employ them in their classes and help students to feel more comfortable. Reflections of the results of this research may be seen in practical applications in language classrooms. Since students are facing a new language and system, it is quite understandable for them to feel on edge and anxious. Helping them to overcome negative effects of anxiety by employing some meditation techniques during learning may mean a lot. As a result, students may free their potentials inhibited by anxiety and be more successful

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