

Effectiveness of Emotional Freedom Technique (EFT) to Reduce Students' Enthusiasm for Mathematics

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Abstract

This study aimed to address the issue of math anxiety, a common obstacle affecting students' emotional well-being and academic performance in mathematics. Math anxiety includes feelings of fear, discomfort, and avoidance related to math tasks, and is often categorized as test anxiety, number anxiety, and abstract anxiety. This research explores the effectiveness of the Emotional Freedom Technique (EFT), an alternative treatment method combining psychological and physical approaches, in reducing math anxiety. This study employed a quantitative research design that involved participants experiencing math anxiety. EFT sessions were conducted by guiding participants to tap specific meridian acupuncture points (e.g., the head, eyebrows, temples, and chin) while affirming their emotional concerns about math. Pre- and post-intervention anxiety levels were measured using a validated Math Anxiety Scale. The results revealed a significant reduction in participants' math anxiety levels after undergoing EFT sessions. Additionally, anxiety-reducing effects were sustained over time, indicating EFT's potential of EFT as a practical tool for managing emotional barriers to learning. This research highlights EFT as an accessible and effective method to support students struggling with math anxiety, contributing to improved emotion regulation and academic success in mathematics.

Keywords: Math anxiety, Emotional Freedom Technique (EFT), Enthusiasm

1. Introduction

Learning is a complex process that involves many variables. The mastery of learning and the differences that individual students have are the main focus in determining indicators of success and the basis for identifying students who experience difficulties or obstacles in their learning. All parts of the school, government, the private sector, and society can work together to advance good education. (Desrinelti et al. 2021). Mathematics is one subject in which students have difficulty learning. Anxiety is an individual's emotional state, in which people feel uncomfortable, worried, or afraid. Anxiety is a feeling from a person about a problem that causes tension and anxiety and is unable to overcome the problem of feeling insecure and comfortable. (Fitria, Neviyarni, Netrawati & Karneli, 2020).

Fear of mathematics is described as a "feeling of tension and anxiety" that disturbs trying to solve problems in mathematics in both ordinary life and academic contexts. (Dowker et al., 2016). Anxiety in

mathematics learning can be interpreted as an emotional reaction in the form of fear, tension, helplessness, and mental disorganization when facing mathematical problems (Bicer et al., 2020).

Research that has been conducted by Kusmaryono and Ulia (2020) found that 76% of students believed that math lessons are becoming more difficult from year to year. In addition, 43% of the students said that they felt dizzy when faced with difficult math lessons. As a result, students always feel anxious when facing math classes once they have opened a math textbook. They can sometimes understand it after listening to the explanation in class, but if they study it on their own at home, they become "blank" and cannot understand it anymore. This is caused by (1) poor critical thinking skills, (2) poor attitudes and cognitive aspects towards mathematics, (3) a lack of desire to learn mathematics, and (4) the assumption that mathematics is a very boring and uninteresting subject.

Anxiety about mathematics is a condition of tension experienced by students related to subjects that involve mathematical calculations, both in the school environment and in the daily environment. This leads to rejection, avoidance, psychosomatic reactions, inability to optimize memory, loss of motivation, and other risky

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conditions (Ardi et al., 2019). One of the efforts in counseling that can be made is through the implementation of the *Emotional Freedom Technique*. According to Sutja (2018), the Emotional Freedom Technique (EFT) eliminates negative emotions and thoughts and becomes a positive source. It can only be performed by tapping on the meridian points that are connected to each other while eliminating negative emotions (Waite & Holder, 2003), which indicates the effectiveness of the Emotional Freedom Technique (EFT) as a treatment for anxiety and fear.

2. Method

The method of writing this article is library review available in online and offline libraries/reading rooms. In the spirit of literature research, the references of books read and related articles are taken into account and adjusted to the topic of problems raised by the author in the previous research.

According to Zed (2004), literature research is a collection of research conducted by searching, collecting, studying, and recording important information from various books, journals, and other relevant sources.

The purpose of the literature study by this (M.Sari et al., 2022)

1. To determine the topic of the problem to be used in the research
2. Finding relevant information and data about the issue being investigated.
3. Consider the basic theory that fits the topic of the discussion.
4. Expanding the researcher's knowledge of the problem will be investigated later.

The data for this study were obtained from a previous study. The data used in this literature study came from several published studies. Google Scholar provides a list of all-encompassing sources by mentioning the keywords *Emotional freedom Technique* (EFT), Math Anxiety. Content analysis is a method that analyzes various data used in a literature review. Data analysis is the process of identifying data in a format that can be read and understood (Sugiono 2014).

3. Results and Discussion

The learning process is a complex activity that involves many variables such as learning material, and individual student differences are the main goal in seeing success indicators and the basis for determining students experiencing obstacles and difficulties in learning. Mathematics is one subject in which students have difficulty learning. According to many people, mathematics is a difficult and boring subject that can cause students' learning outcomes to drop. (Milena et al., 2022)

Anxiety about mathematics is a condition of tension experienced by students related to subjects that contain mathematical calculations anywhere and anytime. This condition leads to rejection, avoidance, psychosomatic reactions, inability to optimize memory, loss of motivation and other risky conditions (Ardi et al., 2019)

A study conducted by Kusmaryono and Ulia (2020) found that 76% of students find math lessons more difficult every year, and 43% of students said that they felt dizzy when they faced difficult math lessons. Therefore, students always feel anxious when they open mathematics textbooks.

Students who experience math anxiety can be described as a "feeling of tension and anxiety" that interferes with solving math problems in both academic and everyday life (Dowker et al., 2016). Math anxiety can also be described as a feeling of fear and increased physiological reactivity when dealing with math, such as when they have to play numbers, solve math problems, or face challenging evaluation situations (Luttenberger et al., 2018).

The results of research conducted by Beilock (2015) indicate that feelings of anxiety about mathematics are widespread. In the United States, it is estimated that 25% of 4-year-old students and 80% of community college students suffer from moderate to high levels of math anxiety. Worldwide, increased anxiety about math is associated with decreased math performance (Beilock and Maloney 2015).

One of the efforts in counseling that can be made is through the implementation of the *Emotional Freedom Technique*. According to Sutja (2018), the Emotional Freedom Technique (EFT) is a method to eliminate negative emotions and thoughts that provide a positive source. The EFT can only be performed through a tap on the connected meridian points and has the ability to eliminate negative emotions. Waite and Holder (2003) reported that the Effectiveness of the Emotional Freedom Technique (EFT) is a treatment for a large number of studies on anxiety, but each study must have different characteristics. Current research has not found a way to help students reduce their math anxiety. This research is based on the fact that there are still many students who experience anxiety when they are going to learn mathematics lessons; many students always think about avoiding mathematics lessons because they are anxious and nervous when the teacher explains and when the teacher will give problems to work on.

Not only because of a lack of understanding, many students feel anxious, and some even skip classes during class hours. If left unchecked, the anxiety that occurs in students about mathematics will have a risky impact on students' thinking and life for the future, students' maladaptive thinking towards mathematics lessons if they are constantly undergoing will hinder students from

participating in mathematics learning at the level of further education. Negative thinking is one of the causes of math anxiety in students, because the feelings that arise all start from their own thoughts. Therefore, it is necessary to provide counseling for the *Emotional Freedom Technique* group to reduce student anxiety in mathematics.

a. Factors Affecting Shiva's Anxiety in Mathematics

Fear of mathematics interferes with the implementation and results of mathematics learning. Anditya and Murtiyasa (2016) stated that there are several factors that affect students who experience anxiety in mathematics.

- 1) Unconducive classes
- 2) National Exam in Mathematics
- 3) The teacher's ability to convey the subject matter being studied
- 4) Many formulas in mathematics
- 5) Family expectations to get good grades
- 6) Students fail to solve mathematical problems.

The factors affecting math anxiety can be categorized according to (Krystle et al. (2017) and Lai et al. (2015):

- 1) Environmental factors include poor student classroom experience, parental pressure, teacher indifference, math textbooks, and strict conventional math education.;
- 2) Psychological factors include teaching methods that are not in accordance with learning styles, students' lack of determination, and lack of confidence in mathematics. Lack of confidence in mathematics, deconstructing skills, and lack of confidence in the usefulness of mathematics;
- 3) Personal factors, such as students' reluctance to ask or answer questions.

While Peker 2009 in (Milena et al., 2022) classify mathematical anxiety into three categories.

- 1) Personality factors, including being reluctant to answer questions because of embarrassment, lack of confidence, and female students feeling less confident because they see that men are better at math.
- 2) Environmental Factors include reluctance to answer questions due to embarrassment, involving insensitive teachers, parental demands, poor classroom atmosphere, and traditional teaching approaches that require students to memorize formulas and manipulate numbers.
- 3) Intellectual Factors: Students are taught mathematics in an inappropriate way, so they feel uncomfortable with the lessons, have a poor attitude and perseverance, lack confidence in their ability to complete math tasks, and there are still many students who consider mathematics unimportant in their lives.

b. Emotional Freedom Technique (EFT)

Craig and Fowlie (1995) developed a technique to

neutralize traumatic memories called Emotional Freedom Techniques (EFT). The EFT combines elements of exposure and cognitive therapy with acupuncture for the treatment of psychological stress (Clond, 2016). Within the treatment intervention, patients tap acupuncture points to neutralize the emotions associated with traumatic experiences or beliefs. Because EFT is a safe and simple method to learn and use, it was originally taught as a personal performance technique. In clinical practice, EFT has been shown to be effective for the treatment of many trauma-based problems. It is a useful intervention for mental health professionals and paraprofessionals, as well as for sharing among friends and families (Flint et al., 2014).

The Emotional Freedom Technique is designed to provide group counseling by activating group dynamics to discuss the personal problems faced by each group member. The goal of group counseling is to help group members recognize and change their negative thoughts or behaviors into positive ones, and help them develop more positive thoughts or behaviors. The *Emotional Freedom Technique* counseling here aims to change the negative thoughts of students who experience mathematical anxiety into positive thoughts by using the tapping technique at the meridian points in the *Emotional Freedom Technique*. Negative thoughts and maladaptive beliefs are displayed by individuals who experience mathematical anxiety based on negative thoughts (Sutja 2018).

According to Idris (2019), the EFT is based on the idea that emotional problems originate from disturbances in the body's energy. Therefore, the method to overcome physical and emotional problems consists of stimulating the body system through tapping or light tapping with fingers at the 18 meridian points of the body.

Step *Tapping*/ Tapping to overcome the problems experienced by the client, followed by the pronunciation of affirmation sentences, is as follows:

- 1) The client was free from magnetic objects to improve the handling results.
- 2) Taps were performed with a total of seven to twelve taps accompanied by affirmation pronunciation at least twice. After the completion of the tapping or tapping, the client is given a few seconds of pause to calm down.
- 3) TH (*Head*) tapping is a knock that starts at the top of the head.
- 4) *Eye Brow*, the base of the eyebrows with at least seven taps.
- 5) *SlideOfEye* is a tap of a meridian point on the outside of the eye or temple bone.
- 6) *Under the Eye*, the tap of the meridian point was in the middle of the under-eye bone.
- 7) *Under the Nose*, the tapping of meridian points on the upper or lower lip of the nose.

- 8) *Chin*: a tap between the middle of the chin and lips.
- 9) *Collarbone*, a knock on the silica bone
- 10) *Under the Arm*, a knock was first placed on the rib bone.
- 11) *Karate Cup*, tapping with your fingertips while expressing sincere acceptance of the problem faced on the edge of the hand (symptom).

c. Purpose of Emotional Freedom Technique

Having a goal depends on the problems and symptoms you want to solve. Iskandar (Nur Oktavia Nur Oktavia Hidayati, 2009:86) that the EFT technique is performed by placing two fingertips at various locations on the body. When symptoms of physical and emotional deterioration appear, these taps are performed to balance meridian energy in the body. The emotional freedom technique (EFT) has evolved to reduce symptoms of stress, tension, depression, and worry in various situations (Krishnamurthy & Sharma, 2019).

According to Akmal Sutja (2018:3), the EFT aims to free the client from all the negative emotions that stop at him. This is why his physical and emotional problems arose. The real purpose of tapping is to make positive thoughts flow and negative energy in the body balanced or lost. Using this EFT technique, clients who have experienced problems before will immediately feel better and more comfortable.

d. Application of Emotional Freedom Technique to Overcome Anxiety

EFT has been used to treat a variety of physical and emotional problems, such as anxiety, trauma, phobias, fear, sadness, anger, and excessive guilt (Church & Brooks, 2010). The following research was conducted to overcome various problems using *the Emotional Freedom Technique (EFT)*:

1. The research conducted by (Sezgin and Ozcan, 2009) with the title "*The effect of progressive muscular relaxation and emotional freedom techniques on test anxiety in high school students*"
2. A similar experiment was conducted to examine anxiety among undergraduate students (Jain & Rubino, 2012). Titled "*The effectiveness of emotional freedom techniques for optimal test performance*," EFT compared to the control group who received instruction with the result of reduced anxiety but not achieving significance in the EFT ($p = 0.369$) and DB ($p = 0.309$) groups.
3. The EFT has also been used in the student population to reduce stress in several studies. Boath, Stewart, and Carryer (2013) with the title "*Tapping for succes a pilot study to explore if Emotional Freedom Techniques (EFT) can reduce anxiety and enhance academic performance in university students*." The

results showed significant reductions in SUD ($p < 0.001$), HAD ($p = 0.003$), and HAD Anxiety Subscale ($p < 0.001$) with no significance on the HAD Depression Subscale ($p = 0.067$)

Based on the literature review, there is evidence that the use of EFT can be effective in reducing mathematical anxiety. Many studies have shown that participants who use EFT report a significant reduction in anxiety levels after EFT sessions. Additionally, various studies have shown that EFT can reduce anxiety and depression over the long term. Although there is evidence that EFT is effective in reducing anxiety, further research using better study designs and larger samples is needed to confirm these results. In addition, the effects of medication and other factors that may reduce anxiety and depression need to be considered.

4. Conclusion

Based on the reviewed literature, several conclusions can be drawn regarding math anxiety and its management. Math anxiety is characterized by various negative emotional states such as fear, discomfort, tension, panic, helplessness, embarrassment, and an overall inability or reluctance to engage in mathematics learning. This anxiety often leads individuals to avoid math-related tasks, particularly in the form of exam-related, number, and abstract anxiety. Students experiencing math anxiety frequently exhibit symptoms such as lethargy, lack of motivation, panic, and fear when assigned math tasks, especially those that require public performance. These emotions hinder concentration and trigger irritability, inconsistent anxiety, and negative thoughts about mathematics that are difficult to understand.

An effective counseling approach to address math anxiety is the Emotional Freedom Technique (EFT). EFT transforms negative thoughts and emotions into positive ones by tapping specific points on the body associated with the meridian system. This technique has proven effective in reducing anxiety, changing irrational thought patterns into rational ones, and improving emotion regulation. The application of EFT offers a promising method for helping students overcome math anxiety and enhancing their ability to approach mathematics with confidence and clarity.

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