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MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
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**The Effect of Mindfulness on Mostaganem University EFL
Students Struggling with Test Anxiety:
The Wim Hof's Technique as a Model**

A dissertation submitted in partial fulfillment for the requirement of
a
master's degree in didactics and foreign languages

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2019-2020

Dedication

I dedicate this work to my mother who sacrificed her time and efforts to make me the man I am today.

To My Sisters "Wafe" and "Sihem"

To my friend Hocine Kobibi and Sekeur Anes

And finally, to the one who believed in me when no one else did,
my dear Supervisor Mrs S. Maroufi.

Acknowledgments

I would like to express my gratitude to my supervisor Mrs. Soumia Maroufi for her guidance and support.

I would like to express my appreciation to the members of the jury who I was most delighted to be their students Dr. Aoumer and Dr. Benosmane.

I also want to thank my friend Riadh Ghemmour who helped me with his suggestions and to Mr. Wim Hof who provided me with all the sources I needed in order to finish this work.

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Abstract

Anxiety is considered as one of the difficulties most EFL students encounter when taking a test. Consequently, it is perceived as a major factor leading to university dropout as it affects the students' academic performance in a negative way. Nevertheless, studies have shown that test-anxious students can manage their symptoms with the help of certain practices like mindfulness. The Wim Hof's breathing technique, which is a mindfulness-based strategy, has been proved efficient to treat different types of anxiety but according to Wim Hof, his method has not been tested on test anxiety. The present study, therefore, sets itself the dual objective of identifying the reasons behind test anxiety and of investigating the effectiveness of the Wim Hof's method breathing technique as a strategy to mitigate it. In order to answer the research questions, two instruments were employed for this study: a questionnaire assessing students' anxiety was handed to twenty students and an experimental study that was conducted on eight participants. Second year EFL students of Abdelhamid Ben Badis have been chosen as a sample to undertake the study. The results obtained from the questionnaire and the experimental study confirmed that most foreign language students experience test anxiety when they are put in an evaluative situation and indicated that Wim Hof method breathing techniques can be an effective practice that helps learners decrease test anxiety.

Keywords: Test Anxiety, Mindfulness ,Wim Hof Method, Breathing.

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List of abbreviations

WHM: Wim Hof Method

DSM: Diagnostic and statistical manual of mental disorders

ICD: International Statistical Classification of Diseases

APA: American Psychiatric Association

TA: Test anxiety

OCD: Obsessive compulsive disorder

PTSD: Post-traumatic stress disorder

General Introduction

In the Algerian educational system, testing is an important aspect for evaluating students. Therefore, this assessment tool can cause the students to develop a psychological reaction usually manifested in a form of apprehension. This phenomenon is identified as test anxiety.

Students with test anxiety experience several physiological, cognitive and emotional symptoms which can be uncomfortable and even debilitating at times. Therefore, not only can test anxiety affect the students' mental health, but it can also have negative impacts on their academic performance.

It is estimated that test anxiety affects 10% to 40% of university students (Ergene, 2003; Thomas et al., 2018), which makes it the most prevalent academic impairment (Van Eerde, 2003). Therefore, helping students alleviate their test anxiety has been warranted. Many research studies have tackled the issue of test anxiety and have offered different interventions to overcome it. Strategies, like cognitive behavioral therapy and mindfulness-based approaches such as meditation and deep breathing, have been successfully used to lessen its impacts (L. Matson, 2018).

Although the Wim Hof method, a mindfulness-based approach, has been extensively explored and proven to be effective to reduce anxiety-related conditions, its effects on test anxiety have not been explored (Wim Hof, personal communication, August 5th, 2020). Therefore, motivated by Wim Hof's claims, the purpose of this study is to investigate the effectiveness of this method on test-anxious students.

To accomplish this, the following questions have been raised:

- Which type of anxiety is prevalent among Mostaganem university students?
- What generates test anxiety?
- To what extent can the WHM be effective in reducing test anxiety?

Consequently, several hypotheses have been posited to be tested and, eventually, validated or rebutted:

- Test anxiety is a subcategory of generalized anxiety disorder.
- Students have irrational fears about the test results and/or inadequate time allotment.
- WHM is an effective tool in reducing and controlling test anxiety.

To investigate the hypotheses, this research adopts both qualitative and quantitative approaches: a questionnaire and students' feedback about an

experimental study.

As far as the organization of this work is concerned, it is divided into three chapters. The first chapter provides definitions of anxiety as a psychological problem in general and sheds light on test anxiety with all its characteristics. The second chapter demonstrates the research methodology and describes the data collection tools along with the findings. The last chapter is devoted to discussing the findings in addition it aims to provide some recommendations and suggestions to solve the problem.

Chapter One: Theoretical Background

Introduction

In educational psychology, student's anxiety is considered a major problem. It can be observed in various performance situations including testing, and it can lead to negative outcomes in an evaluation activity. Psychologists have focused on breaking anxiety down to have a clear understanding for its factors in order to create treatments to reduce it or at least to provide the individuals who are struggling with anxiety the ability to control their condition.

It is believed that mindfulness is a valid practice which can assist the person to manage his anxiety especially breathing techniques since what generates the disorder is the pattern of the mindset of the individual, meanwhile the emotional and the physical arousals are the outcome of his thoughts.

This chapter is particularised to understand the anatomy of anxiety from a psychological perspective in addition to the insertion of mindfulness in modern psychology and its relevance to the disorder.

1.1. Definition of anxiety

It is hard to give a specific definition of anxiety because it is a complicated state which cannot be measured or observed and it is not even concrete, anxiety is related to the cognitive system. It is debatable for two reasons; psychologists have not agreed on one particular accepted definition (Barlow 2004) and anxiety shares almost the same symptoms with fear and panic (Ranchman.S 2004).

Nevertheless, Spielberger (1972), one of the major founding editors of American Psychological Association, defines anxiety as a negative state of emotions or condition which is manifested in feelings such as worry, stress and fear, in addition to triggering the automatic nervous system (the part of the brain that is responsible for regulating involuntary body functions, such as heartbeat, blood flow, breathing, and digestion), therefore, the individual with anxiety will feel nervous and worry when s/he thinks about a possible negative outcome of a certain experience.

The major difference between ordinary fear and anxiety is that fear is a reaction of an actual existing state of danger. For example, it is reasonable that the individual feel afraid to fail an upcoming test or exam because there is a justification, however, for a person with anxiety disorder, he or she may have the feeling of dread for no justifiable cause as if this state of emotions cannot be controlled (Elaine S. C, Erine. H, 2012)

1.2. Types of anxiety:

According to the American Psychological Association, there are six types of anxiety disorder: generalized anxiety disorder, panic disorder, phobia, social anxiety disorder, obsessive compulsive disorder and post-traumatic stress disorder.

1.2.1. Generalized anxiety disorder (GAD):

It is believed that it is one of the most common types of anxiety and it is characterized in a constant feeling of being worried about different daily events and situations such as work, family and school.

Anxiety and Depression Association of America mentioned in their website (n.d) an individual is diagnosed with GAD when s/ he is struggling with a difficulty of controlling worry for more than six months.

The feeling of being worried for a person who diagnosed with GAD does not occur only when there is a situation that provokes negative emotions but also it is more likely to occur without a stimulus (Spilberger 1972).

1.2.2. Panic disorder:

It is an unpredictable panic attack which comes without any warning or particular reasons. Unlike GAD, panic attacks are characterised with physical and neurobiological symptoms such as racing heartbeat, problem of breathing, chest pain and dizziness (Ranchman.s 2004).

It is believed that almost every human faces a panic attack once or twice in his life but if it has occurred more than that and the individual lives in a constant fear of having it again he is diagnosed with panic disorder. DSM-5

(APA, 2013)

1.2.3. Phobias

According to Elaine S. Chong and Erin Hovanec (2019), a phobia is “an extreme, irrational fear in response to something specific, such as spiders” (p.07).

A phobia is an advanced degree of fear of a particular object (such as spiders and clowns), situation (being in a high building). There are three categories of phobias. The first one is an intense fear of a particular object, situation or an activity, the second one is social phobia; the person with social phobia tends to feel afraid of facing an embarrassing situation or judged in public while interactions, and they are also afraid of doing common things in front of others such as eating; and the last category is called agoraphobia and it is defined as being afraid of places from which escape will be hard or difficult (supermarkets and theatres) (APA,2013; Barlow and Craske, 2000).

1.2.4. Social Anxiety Disorder

It is defined as the fear in a social situation where there is a possibility of exposure to scrutiny and behaving in a way that will make the individual be evaluated negatively. It was previously categorised as a type of phobia which was termed “social phobia” (Marks and Gelder, 1965). Social anxiety disorder is a constant fear of specific social situation which involves interaction, observation and performance (APA, 2000). For example, a student can be diagnosed by social anxiety when he is afraid of talking to his classmates and teachers and participating in classroom because his performance can be negatively evaluated by his colleagues and perhaps from his perspective he will be judged.

1.2.5. OCD (Obsessive Compulsive Disorder):

OCD is characterized by forced, unpleasant obsessions (ideas and images) and by compulsions (actions which are constantly repeated unconsciously) which are performed as a reaction to particular triggers (Dan

J.S and Naomi A.F, 2007).

The DSM-IV categorizes OCD as a type of anxiety disorders, meanwhile ICD-10 classified it as a neurotic, stress-related disorders. Both systems require the symptoms of obsessions or compulsions. According to ICD 10 diagnosis, the symptoms should be present for more than two weeks, while; DSM-IV does not take the period of symptoms in consideration) (Mario.M et al., 2002).

1.2.6. Post-traumatic Stress Disorder

In the fifth edition of Diagnostic and Statistical Manual of mental disorders (APA, 2013) , PTSD is a type of anxiety disorders which can occur to people who have faced a traumatic event such as death, serious injury or sexual violation.

PTSD triggers can be living the experience of the traumatic event, being in the place where the traumatic event happened to another person or it can be by being aware of the traumatic event which a friend or a family member was exposed to.

Students who are diagnosed with PTSD and take low marks or perhaps fail in their exams can be intelligent, their grades cannot be taken as a reflection of their academic level. This mental disorder can interfere and prevent student from receiving high scores at school (Mike.D, 2012).

1.3. Test Anxiety :

Test anxiety has two elements which are worry; the fear of failure in a test such as school exams and the consequences that are related to it; and emotionality which is defined as the psychological reactions of the arousal of the automatic nervous system when the individual is under evaluative conditions (Liebert and Morris, 1967).

In order to classify test anxiety, psychologists have studied the nature of

the psychological background of test-anxious individuals. Wine (1971) claimed that individuals with test anxiety score lower grades because they sustain cognitive apprehensions during the evaluation period. These cognitive apprehensions are irrelevant and they distract test-anxious students from concentrating on the given task variables.

Sarason (1972) has confirmed Wine's claims by giving a similar understanding; he said that most of test-anxious people are very self-centered and self-critical than the average level which explains why they experience cognitive apprehensions that contribute in distracting them during a particular task. He adds: "The highly test anxious individual is one who is prone to emit self-centered interfering responses when confronted with evaluative situation" (p.175).

Speilbeger (1995) has classified test anxiety as a situation-specific anxiety, because it is dependent on the test situation. Moreover, student's perception of the test relies on his/her test taking skills that can be acquired to adapt with examination.

When the individual is being examined, his/her perception will change according to the situation, it can be more anxiety provoking or less. If the situation (test/exam) is perceived as threatening, the individual's anxiety will increase, leading eventually to self-centered and self-derogatory apprehension cognitions next to thoughts that are irrelevant to the task.

However, the Diagnostic and Statistical Manual-IV conceptualizes test anxiety as a concern over a negative evaluation (APA 1994) and it is classified as a type of social phobia. Social phobia is defined as a constant fear of social or performance situations where the individual can face embarrassment (McDonald, 2001).

1.3.1. Symptoms of Test Anxiety:

Test anxiety is diagnosed using the DSM-IV(1994) classification of test anxiety as a social phobia , so the individual must show the four following

symptoms:

1) an instant anxiety response when s/he is exposed to the performing a test, 2) to avoid taking it but with an extreme worry, 3) experiencing perturbation during ordinary tasks because of the fear related to test-taking and 4) like any other anxiety disorder, the symptoms should manifest for at least six months for the individual (APA, 1994).

The student cannot diagnose him/herself with test anxiety because s/he is not aware of the followed criteria by psychologists in order to do so, so there are other symptoms which are commonly known and can be observed, for example, the ones that are stated by Lisa J. Harpin (2011) and they are divided into three categories:

1.3.1.1. Physical Symptoms:

The student may have headaches, nausea, extreme body temperature changes, excessive sweating, shortness of breath, lightheadedness or fainting, rapid heartbeat, and dry mouth.

1.3.1.2. Emotional Symptoms:

The student can experience excessive feeling of fear, disappointment, anger, temporary depression, uncontrollable crying or laughing and feelings of helplessness.

1.3.1.3. Behavioral/Cognitive Symptoms:

Test-anxious individuals witness worry cognitions such as negative self-perception, racing thoughts and difficulty of concentrating, feelings of dread, fidgeting and substance abuse.

1.3.2. Reasons of Test Anxiety:

According to Oxford learning website (2018), there are numerous reasons which can generate test anxiety and they are categorised in three types:

1.3.2.1. Situational Reasons:

Time plays a major factor and both the time that precedes the test and the time of the test are important (it is believed that students feel more anxious when the date of the test is soon and when the test period is short). Taking the test in a congested classroom or an amphitheatre raises students' worry. In addition to the lack of test-taking skills such as preparation and poor test history can affect the performance negatively.

1.3.2.2. Mental Reasons:

Students fear failure and low grades which is the main reason why test-taking worry is classified as a type of anxiety (a fear of a negative outcome). They are also afraid of disappointing their parents and teachers. Moreover, perfectionist students are more likely to be test-anxious because they build high expectations and they do not tolerate their mistakes.

Thousands of years before the appearance of psychology, Asian culture has developed many practices which aimed at reducing anxiety and decreasing its symptoms. One of the practices is known as Mindfulness and it has also been adopted by modern psychology.

1.4. Mindfulness:

It is defined as the awareness of the living experience by the individual without judgment, which means it is a state of mind and not a process. However it can be developed by sever practices and activities. (APA,2012)

Kabat Zinn (2013) defined mindfulness as the focused conscious attention on the present situation of the individual. Unawareness is the individual's lifestyle because in any usual situation he/she is not fully focused on the present moment and if s/he pays attention to the mind's cognitions which what occurs during meditation s/he will observe the most of the thoughts are about memories analysis and future possibilities calculation. For example, when test anxious students are thinking about their previous low grades and the consequences of failing in a test, they are thinking about irrelevant thoughts

to the test. Kabat Zinn (2013) explains that humans' attention is easily distracted, in the sense that even if they deliberately try to concentrate on a particular task, whether it's driving or something else, they might find it hard to be in the present for very long(p.71).

1.5. Cognitive behavioural therapy (CBT):

According to the American psychological association website (2017), CBT is a type of treatment for patients who are diagnosed with none-neurological psychological disorders such as depression and anxiety.

The sufficiency of CBT in treating such mental illnesses has been scientifically proven and it is reliable because the triggers of these problems are the unhealthy mindset, a specific followed pattern of unhealthy behaviour and it provides patients with strategic methods to adapt with their problems and to overcome the symptoms.

1.6. Mindfulness Based Stress Reduction (MBSR):

Mindfulness is originally a Buddhist practice aims to overcome pain sadness and achieve happiness and spiritual liberty. However, it has has been integrated in modern psychology when Kabat Zinn presented his work under the name of "Mindfulness Based Stress Reduction" in 1979 at the University of Massachusetts Medical Center. Now, this programme has become a brunch of cognitive behavioural therapy in psychology. (J. Mark G. Williams, Jon Kabat Zinn 2013)(Jon Kabat Zinn, 2013)

1.7. Wim Hof Method:

In order to understand the Wim Hof Method, It is important to know Who Wim Hof is. He was able to climb Mount Everest (2007) and Kilimanjaro (2009), wearing shorts and shoes only. In 2008, he broke a world record by remaining in ice for one hour, 13 minutes and 48 seconds and two years after, he broke his own record by being immersed in ice for one hour and 44 minutes.(Wim Hof and Justin Rosales, 2011).

He claimed that his method plays a major factor in decreasing stress and anxiety and also increases the effectiveness of the immunity system because

the individual who constantly practices WHM gains the ability to control the physical and the mental/emotional factors that are responsible about experiencing the anxiety state of mind

According to Wim Hof (2016), The WHM is based on three components which are cold therapy, breathing and commitment.

1.7.1. Cold Therapy:

Humans are addicted to temperature 20°-21°, so when the temperature of the environment is higher than that, they use air-conditioning and when it is lower, they tend to use central heating. This is an ordinary act because individuals facilitate the natural body adaptation to cope with the environment, however cold exposure has many benefits on the human psychology and physiology.

1.7.2. Breathing:

Respiratory rate of individuals is almost from 13 to 20 a minute even when they are in a resting state while the average rate is about six a minute. Breathing in a rapid rate can be considered as sign of stress or a psychological disorder which is related to stress such as anxiety disorders.

Wim Hof Method breathing technique is not to make the individual relaxed while performing it but to enhance the ability to regulate the automatic nervous system.

1.7.3. Commitment:

Next to cold training and practicing breathing technique, being committed and constant is also important in order to reach a better outcome and this is why Wim consider it at a main component of his method (Wim hof and Koen De Jong, 2016).

1.8. Conclusion

The anatomy of anxiety shows that the core of the problem in all types is mainly cognitive because the stream of consciousness inside the mind of the students is what triggers the arousals, leading to unpleasant experience with a set of emotional and physical symptoms which may impact the student's performance. When the student is thinking of the past (poor test history, embarrassing situation during the test) or the future (failure and parents' reaction towards his/her marks), s/he will not be able to focus completely on the test as a set of tasks and activities but as a situation which impacts his/her life and his/her relation with /her environment. Therefore, psychologists categorised the issues as a CBT matter and provided methods which can influence the mind pattern of the individual to hand him/her the ability to guide his/her flow of thoughts, and mindfulness is considered a useful method to fulfil the purpose of treating similar disorders to some extent.

In addition, some mindfulness acts such as WHM breathing techniques have been proven to be effective not only at the cognitive level but at the physical level as well. It makes the individual develop the skill of focusing on the present moment while practicing the breathing method and also balances the rate of heartbeats and the amount of hormones in the blood which impact the emotional state of the individual.

Chapter Two:

Research Methodology

Introduction

This chapter is devoted to the practical framework of the study. It aims to discuss the research design of the study in order to investigate the anatomy of test anxiety for EFL students of Abdelhamid Ben Badis University. Meanwhile, the collected data will help to answer the research questions in addition to testing the validity of the hypothesis. A questionnaire was administered to second year EFL students to investigate the credibility of the theoretical framework and an experiment was used to explore the impact of WHM breathing techniques on test anxiety.

2.1. Research Methodology

Based on the nature of the study, this research is based on both qualitative and quantitative data and an experimental method. The quantitative data collection tool is a questionnaire which was administered to students of English in order to investigate the credibility of the psychological aspects of test anxiety when they are projected on an Algerian setting and to investigate students' level of awareness about test anxiety. The qualitative data are basically related to feedbacks of students who participated in the experiment.

2.2. Population

The participants in this study are second year EFL students of Abdelhamid Ben Badis University because they already have a previous experience with university tests and exams which will affect their attitude towards testing. (The researcher was willing to choose first year EFL students of the same university because they are new and they are not aware of university testing procedures which may increase their test anxiety however the previous grades are a major variable in this study).

2.3. Questionnaire

The questionnaire aims to provide a better understanding of the nature of test anxiety from Algerian students' perspective. It was administered to twenty students of Second year EFL students of Abdelhamid Ben Badis University.

It contains eight questions which are divided to four sections. The first section is about personal information; it has only one question about the gender of the participant. The second one contains three questions about participants' experiences with test anxiety and their psychological background in order to investigate the origins of the problem. The third one is a form of two questions which shed light on the situational internal and the external triggers (symptoms and factors) of test anxiety. The last section aims to highlight students' efforts to overcome test anxiety and their opinions about breathing meditation.

2.4. The Experiment

As long as this research investigates two variables which are psychological concepts (anxiety and meditation), a quantitative method cannot be used solely for two reasons, students cannot be completely aware of their psychological background, hence, they cannot provide accurate data while answering the questionnaire and also part of the needed data to fulfil the research's purpose are not concrete and can only be extracted based on participants' feedback after applying the experiment.

2.4.1. Description of the Experiment

The purpose of the experiment is to investigate the impact of Wim Hof method breathing techniques on test anxiety.

The sample was a group of eight participants (four males and four females) of the same level (second year EFL students of Abdelhamid Ben Badis University) who said that they struggle with test anxiety and they expressed their desire to be part of the experiment willingly.

The experiment took place on ZOOM application for online meetings for one week. It was divided into seven fifteen-minute-long sessions with a rate of one session every day from July 18th to July 24th, 2020. During each session the participants were provided with specific instructions to practice the Wim Hof method breathing techniques online under the guidance of the researcher.

The instructions are mentioned in Wim Hof's book "Becoming the Iceman" in 2011 and his website (n.d) as well. The participant takes thirty quick deep breaths using his/her lower part of the lungs and then s/he exhales so as to keep his/her lungs empty and holds his/her breath for as long for whatever period s/he is able to, then, s/he inhales again and holds for thirty second.

2.5. The Analysis of the Questionnaire

The questionnaire was administered via email to thirty second EFL students of Abdelhamid Ben Badis University, but only twenty of them have answered the questionnaire and sent it back via email as well.

Section One: this section aims to collect the needed personal information with regard to the students' gender.

Answers	Male	Female	Total
Number of participants	9	11	20
percentage	45%	55%	100%

Table 01: Studens'gender.

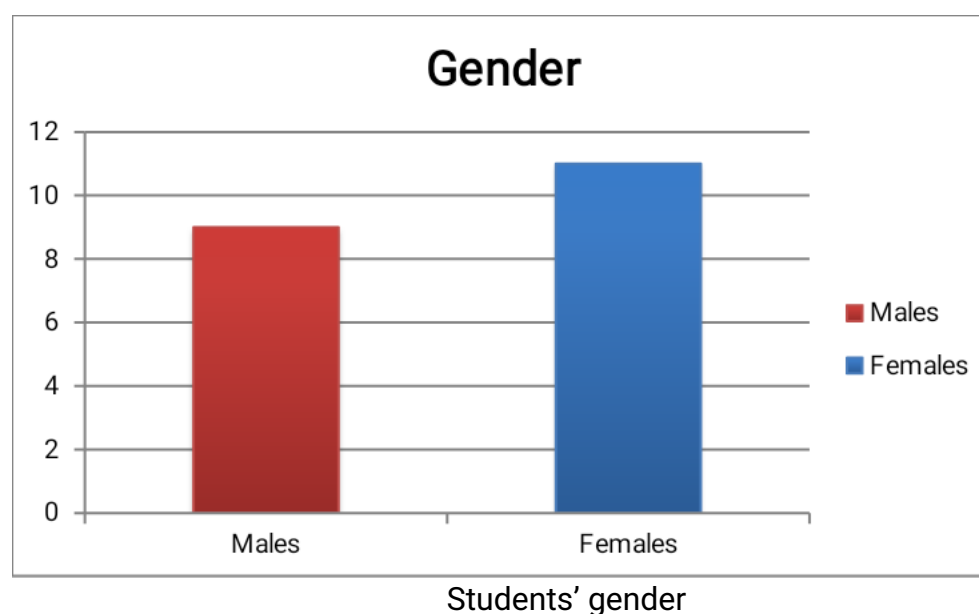


Figure 01 :

There are twenty participants, nine males with percentage of 45% and eleven females with the percentage of 55%.

Section Two: this section aims to investigate student's experience with test anxiety.

Question 01: I feel anxious because of taking a test.

-Strongly agree

-Agree

-Disagree

-Strongly Disagree

Answers	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Number	3	12	3	2	20
percentage	15%	60%	15%	10%	100%

Table 02: Students' level of test anxiety

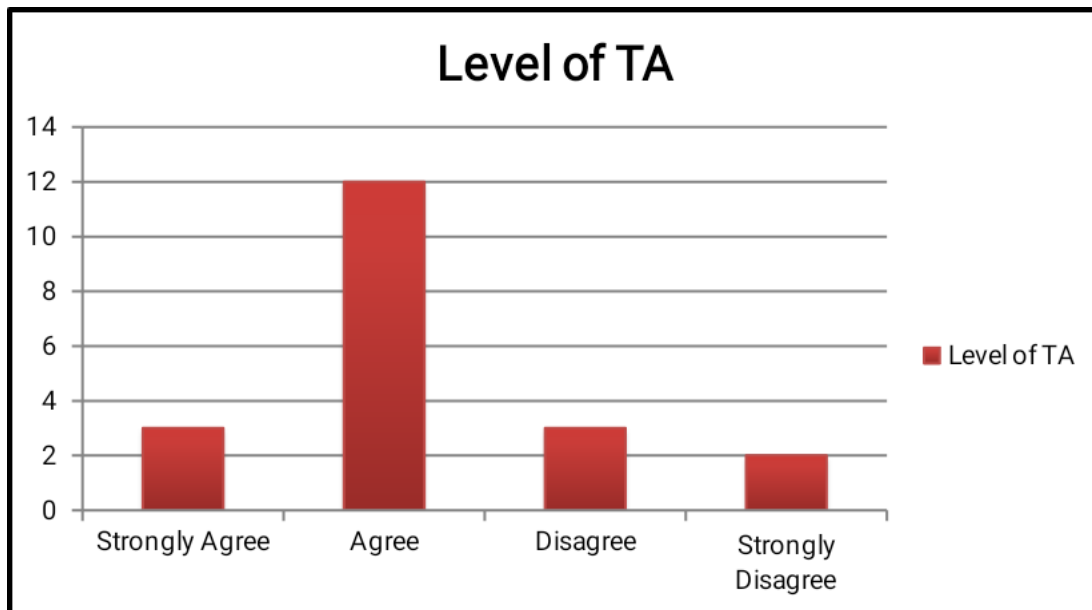


Figure 02: Students' level of test anxiety

Most of the students claimed that they have test anxiety. Three students with a percentage of 15% answered with 'strongly agree' which shows that they have a high level of test anxiety. Twelve students with a percentage of 60% agreed that they feel anxious because of taking tests. Three students with a percentage of 15% answered with disagree and 10% of the participants who are two students answered with strongly disagree which shows that they do not have test anxiety.

Questionnaire 02: When do you feel Test anxiety?

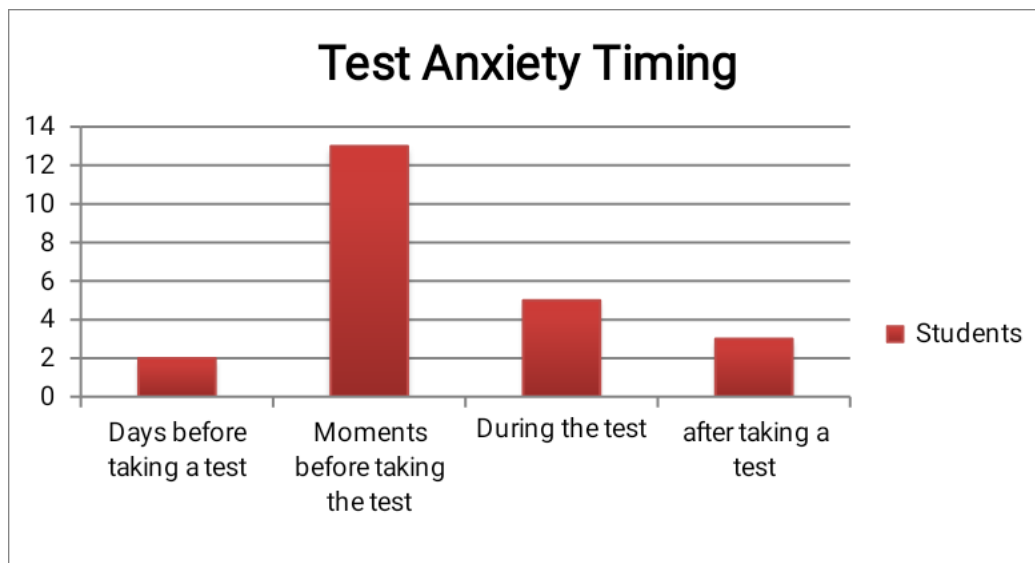
a-Few days before taking a test.

b-Moments before taking a test.

c-During the test

d-After taking the test

Answers	Few days before taking a test	Moments before taking a test	Duting the test	After taking the test
Number	2	13	5	3
percentage	10%	65%	25%	15%

Table 03: Students' test anxiety timing**Figure 03:** Students' test anxiety timing

This question was a multi-choice question aims to investigate the most anxiety provoking time because students can feel anxious in more than one situation. Most of the students experience test anxiety few moments before taking a test with a percentage of 65% (Thirteen out of twenty students). The second most test anxiety-triggering time is during taking the test with 25% percent of the students (five out of twenty students). Three students out of twenty answered that they feel it after the test with a percentage of 15% and finally two students out of twenty said that they feel anxious few days before the test day.

Question 03: Why do you feel anxious?

- a- I am constantly feeling worried about different daily events and situations
- b- I have sudden physical symptoms of anxiety
- c- I have an intense fear of tests
- d- Because I have to do it with other students and afraid of facing and embarrassing situation or being evaluated negatively
- e- Because taking tests always means having unpleasant ideas and images in my mind
- f- I have a terrible experience with taking tests and I am afraid that that will

happen again

Answers	A	B	C	D	E	F
Number	9	4	4	4	6	1
percentage	45%	20%	20%	20%	30%	05%

Table 04: Reason of anxiety

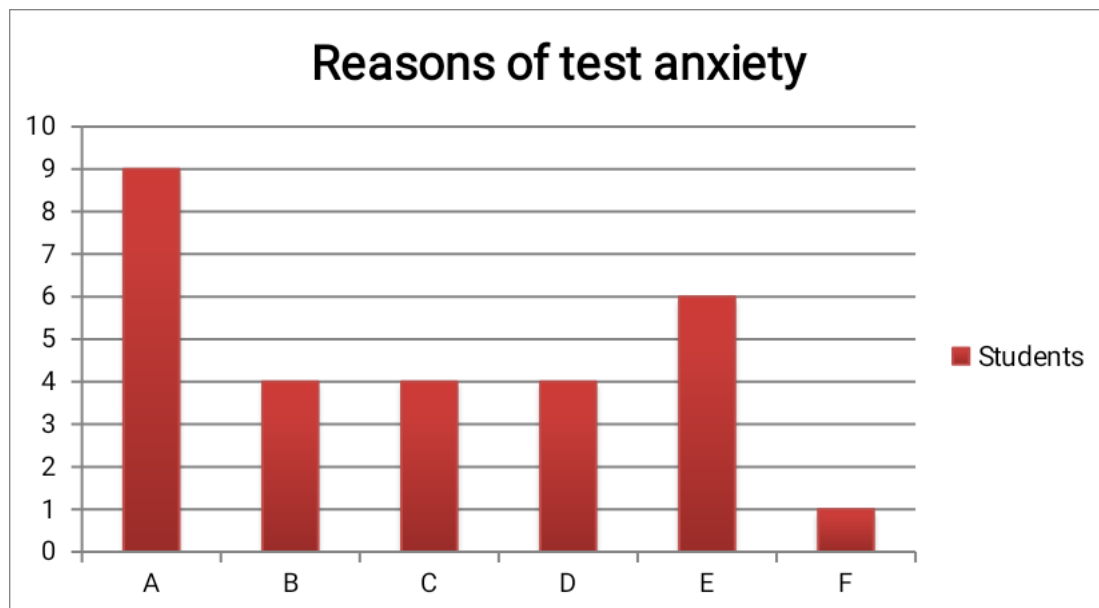


Figure 04: Reason of anxiety

This question was also a multi-choice answer as long as there can be more than one reason and it aims to investigate the type of test anxiety which students experience in the Algerian context exposure. The students were provided with an expended general diagnosis of the type rather than the terminology of the disorders as long as they might not be fully aware of the exact meaning of terms.

Nine out of twenty students answered that they constantly feel worries about different daily events and situations with a percentage of 45%. Six students claimed that taking tests always means having unpleasant ideas and images in their minds with a percentage of 30%. Meanwhile, concerning taking the test with other students with the fear of being embarrassed and afraid of being evaluated negatively, having intense fear of test and having sudden physical symptoms of anxiety(B,C and D), the answers were four out of twenty with a percentage of 20% for each. Finally, only one student

representing five percent of the participants answered that he has a terrible previous experience with taking tests and he feels anxious because he is afraid that it will happen to him again.

Section three: the purpose of this section is to investigate the dominant symptoms of test anxiety and also the factors.

Question 01: What symptoms do you have when experiencing test anxiety?

- a- Headache
- b- Shortness of breath
- c- Rapid heartbeats
- d- Excessive feeling of fear
- e- Temporary depression
- f- Feeling of helplessness
- g- Negative self-perception
- h- Difficulty of concentration
- i- Racing thoughts
- j- Other:

	Physical symptoms			Emotional symptoms			Cognitive Symptoms			Others
Answers	A	B	C	D	E	F	J	H	I	J
Number	2	1	9	3	3	3	3	8	11	0
percentage	10%	05%	45%	15%	15%	15%	15%	40%	55%	0%

Table 05: Symptoms of Test Anxiety

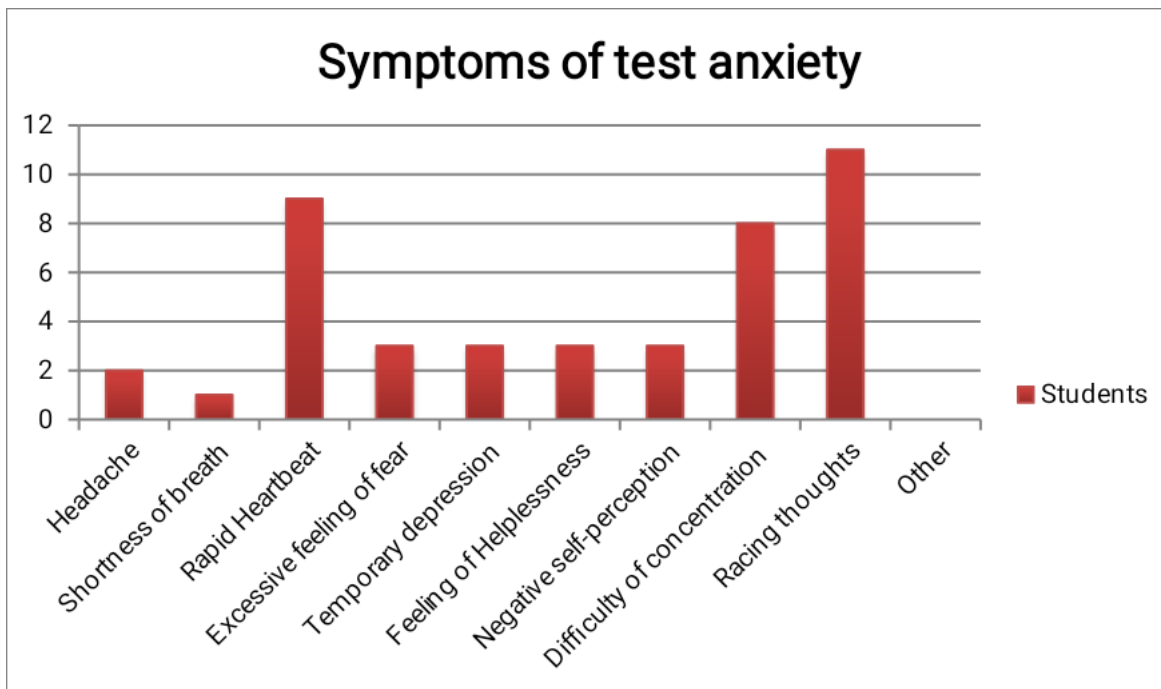


Figure 05: Symptoms of test anxiety

This question aims to discover the most occurring symptoms when experiencing test anxiety. Eleven students (55%) reported that they have racing thoughts, nine students (45%) said that they have a rapid heartbeat and eight participants (40%) feel difficulty of concentration. However, three out of twenty with a percentage of (15%) claimed that they struggle with emotional symptoms which are excessive fear, temporary depression, and feeling of helplessness next to the cognitive symptom of negative self-perception. Moreover, the minority (10%,5%) said they experience physical symptoms of headache and shortness of breath.

Question 02: What are the things that trigger your test anxiety?

- a- Test taking time is short.
- b- Lack of test taking skills and preparation.
- c- Poor test history
- d- Fear of failure and bad marks.
- e- Other:

	Situational triggers	Mental triggers	Other

Answers	A	B	C	D	E
Number	8	5	4	10	1
Percentage	40%	25%	20%	50%	5%

Table 06: Test anxiety Triggers

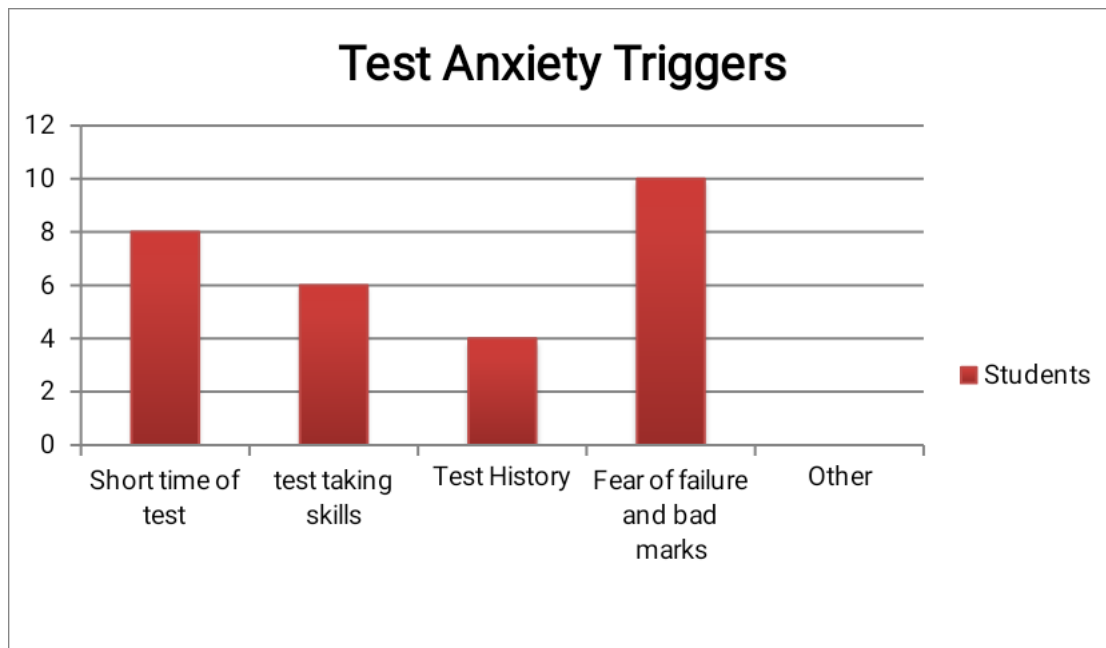


Figure 06: Test anxiety triggers

This question shows the major factors which provokes test anxiety to occur. Half of the students (50%) answered that they are afraid of failure and bad marks. Meanwhile, eight (40%) out of them stated that test taking time is short. Whereas, Six students (30%) believes that they lack test taking skills and only four (20%) said that they have poor test history. And none of them mentioned other factors.

Section Four: This section is devoted to question students' awareness of test anxiety management.

Question 01: Did you try some strategies to overcome test anxiety?

-Yes

-No

If yes, name them.

Answers	Yes	No	Total
Number	6	14	20
Percentage	30%	70%	100%

Table 07: Students' strategies

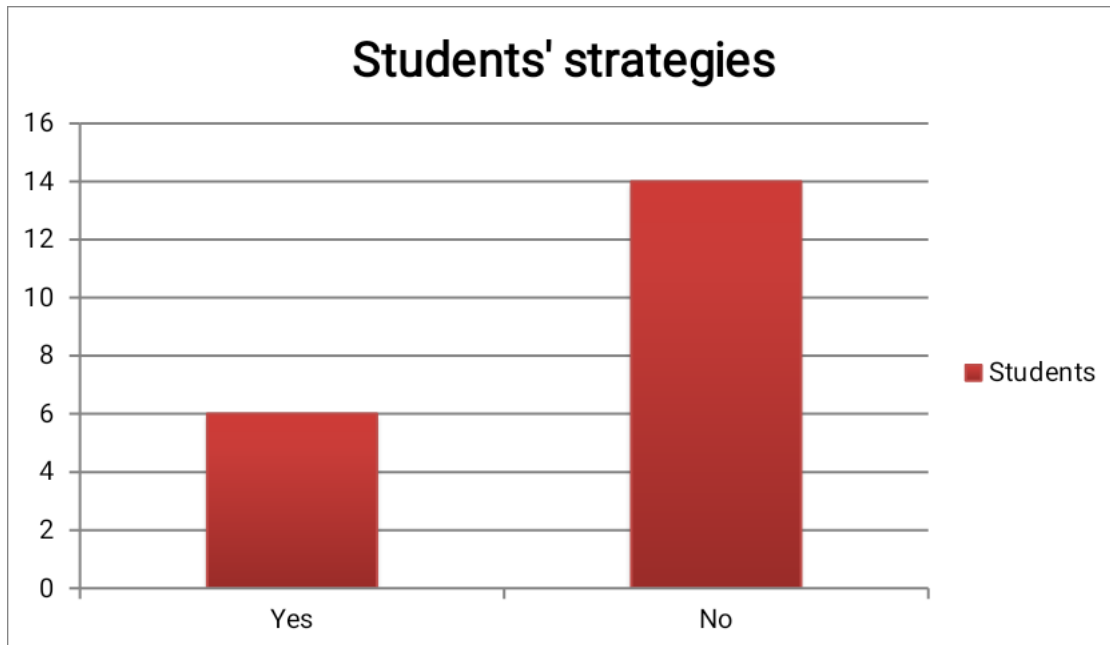


Figure 07: Students' Strategies

The question aims to investigate students' attempt to solve the problem of test anxiety in a systematic method. 70% of the students said they did not try any strategy to overcome test anxiety. However, 30% said that they tried some strategies and they mentioned music, self improvement, mental preparation and meditation.

Question 02: Do you think that controlling our breathes using meditation techniques will help reducing test anxiety?

-Strongly agree

- Agree

-Disagree

-Strongly disagree

Answers	Strongly agree	Agree	Disagree	Strongly disagree	Total
Number	5	11	4	0	20

percentage	25%	55%	20%	0%	100%
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Table 08: Acceptance of breathing techniques meditation

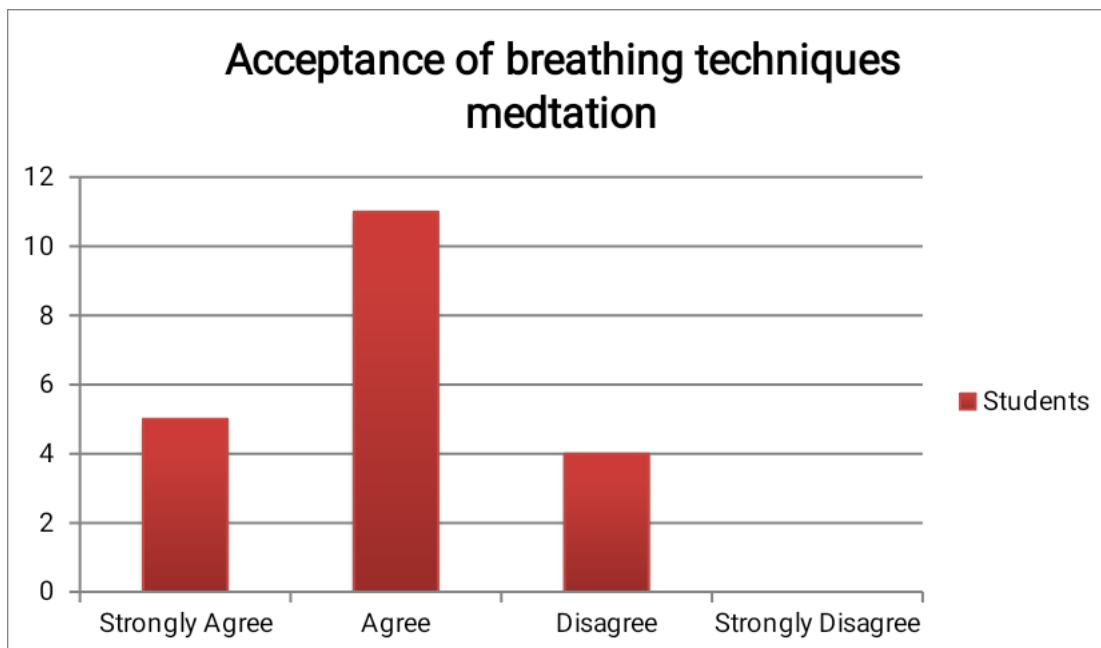


Figure 08: Acceptance of breathing techniques meditation

The purpose of the present question is to explore students' level of acceptance of meditation and whether they think it is useful or not. Most of the students reported that they agree (55%), others (25%) said that they agree to some extent. However, only 4 students (20%) stated their disagreement to some extent and finally none of the participants strongly disagreed.

2.6. The Analysis of the Experiment

The breathing techniques of WHM were useful in order to reduce anxiety for eight participants. After the first session all the students felt instant physical and mental reactions. They felt their arms vibrating, pressure in their ears, and these signs are considered normal reactions which are evidences that the participants are practicing the method correctly according to Wim. They also felt less stressed and more energetic. However, six students stated that they had stronger feelings by the end of every session and two of them said that they had the same experience as the first time. In addition, they felt fresh while doing their daily activities.

By the end of the seven sessions, six students said that the experience was very useful in reducing anxiety and it would be beneficial as a method to overcome test anxiety. The other two claimed that it is helpful to a certain extent which means it can reduce but it is not able to completely overcome test anxiety completely.

2.7. Conclusion

this chapter has illustrated the methodology which was used in order to collect the needed data to serve the objective of the study. the significance of the data collection tools was described along with the selected population . Finally, this section also aims to report the findings. The discussion of the findings will be the focus of the next chapter.

Chapter Three: Discussion of the Findings

Introduction

This chapter is devoted to explaining and a discussing the results of both the questionnaire and the experimental study. The researcher also provided both teachers and students with suggestions and recommendations in order to overcome test anxiety and finally, the research study limitation are included.

3.1. Discussion of Questionnaire's Results

The collected data show that 75% of the students struggle with test anxiety. they were asked about the time of the unpleasant emotion most of them (65%) stated that they have it few moments before the exam. Then, the researcher investigated the credibility of classifying test anxiety under a particular type by asking about the reasons of anxiety. 45% of the students answered that the reason was a constant feeling of being worried in different events which is close to GAD which also means that 65% of the participant do not relate test anxiety to GAD.

The third section shows only 15% of the students have emotional symptoms meanwhile most of the symptoms are cognitive; racing thoughts (55%) and difficulty of concentration (40%). These data expose the fact that the arousals are highly related to specific distorted thoughts that can be the generator of the fear they feel. Fear of failure in this situation, is most likely to be rational and it occurs as a response to two main reasons, either students are afraid of not having sufficient time to finish the test successfully or the fear of having bad marks.

The results of questionnaire provide us with a clear illustration about the problem of test anxiety for EFL students of Abdelhamid Ben Badis University. Test anxiety does not fall under one specific type of anxiety and there are numerous test related reasons which makes it a dependent phenomenon which is related to psycho-education. However, students rarely experience physical symptoms except having a rapid heartbeat which makes it difficult to detect an individual who is facing this disorder even in a testing environment, whereas most of the symptoms are cognitive which might influence the student's stream of consciousness leading to negative performance but it also proves that it is a CBT matter. In addition, both mental and situational factors cause test anxiety. Nevertheless, test atmosphere especially timing is a major factor. Despite the students' awareness of the problem, most of them do not show any attempt to teat test anxiety even though they belief that there are some methods which can be sufficient to at least reduce stress.

3.2. Discussion of the Experiment's Result

The experimental study has shown that the WHM can be considered as an effective method to reduce both cognitive and physical symptoms of test anxiety according to the eight participants' feedbacks after the study. The practice has provided them with the ability to control the symptoms which cause the unpleasant experience such as racing thoughts and rapid heartbeat. To a certain extent the WHM had an impact in reducing these symptoms from the level of "anxiety mode" to the ordinary level (six students' feedback were very promising after the experimental study). Since the factors that trigger test anxiety are mental apprehensions which are related to the past and the future of students, providing them with a tool that helps them to practice to concentrate on their present moment such as WHM breathing technique, may assist them to have control of their thoughts.

To be test-anxious is a natural feeling, and it cannot disappear completely just like the other feelings and emotions. The aim of the WHM is to manage the problem so students' performance is not negatively affected.

However, students' attitude towards test anxiety leads them to desire its total absence which explains the other two students' reaction and feedback after the experience when they stated that it is not sufficient because it did not eradicate the unpleasant experience.

3.3. Suggestions and Recommendations

The Algerian Educational system does not give a high importance to the psychology of the student, especially during testing/examination procedures. The motive of the study is to highlight the importance of implementing a psycho-educational program which can make students aware of their psychological issues and also to form teachers to be able to detect such students and help them to overcome their problem and provide them with the proper methods to do so.

3.3.1. Recommendation for teachers

Because testing plays a crucial role in evaluating students, the teachers constitute a main part of the testing environment and they should set a suitable atmosphere.

1. Teachers should prepare students psychologically before any evaluative performance situation, for example it is better when the teachers ask the students not to overthink about the aftermaths of the test before taking it.
2. Teachers should provide students with test taking skills which are suitable to their level and way of learning.
3. Teachers should set tests that are suitable to the test taking time that is suitable to all levels.
4. Teachers should be aware of their students' psychological disorder in order to take that into consideration while testing.
5. Teachers should guide students to meditate and relax for about ten minutes before the exam because most students face anxiety symptoms during this period and some of them are not able to overcome this phase.
6. Teachers should recommend books and videos about methods that can help to overcome anxiety and practise these methods in classroom to confront them and make them explore the impact of these methods.

3.3.2. Recommendations for Students

Students should be aware of their test anxiety in specific and their psychological problems in general then they should search for solutions that are useful for them.

1. Students should master test taking skills in to avoid rational fears of negative outcomes.

2. Students should practice meditation constantly in order to have control over test anxiety or any evaluative performance situation.
3. Students should practice WHM few moments before test taking to relax and reduce the physical and the cognitive symptoms.
4. Students should inform their teacher about their psychological problems especially the problems which are related to education.
5. Students should consult a therapist when they feel that test anxiety is extremely affecting them and especially their evaluation.

3.4. Limitation of the study

The research has numerous limitations especially for the practical framework because it was conducted during COVID-19 pandemic lockdown.

1. The study is only related to second year EFL students of Abdelhamid Ben Badis and not all Algerian students. The sample was only few participants (20 students for the questionnaire and 8 for the experimental study).
2. The original experimental study was supposed to be allotted two weeks sessions for a class where students take an actual test while they are observed and finally the researcher gathers their feedback.
3. WHM breathing techniques is only one element of three. The students did not apply the full method which may have reduced its impact.
4. Lack of sources about the relation between WHM and educational psychology because according to him this research was the first research about the impact of his method on students.
5. The research tackles only specific variables, the psychological background of students out of the university was not taken in consideration and also the impact of TA on students performance was investigated implicitly.

3.5. Conclusion

The typical situation of test anxiety for EFL students of Abdelhamid Ben Badis University is that students fears the the testing time is not sufficient for them due to their lack of preparation (test taking skills) which leads them to obtain negative marks and finally fail. These cognitions distract them from focusing on the test itself during their present moment and continue to think of the negative future possibilities. However, WHM breathing techniques is able to reduce anxiety symptoms and by practice it will provide them with the ability to have control over their thoughts.

General Conclusion

The purpose of testing is to evaluate students' level in a particular module. However, the assessment is an evaluation of the performance and not the students himself. Students' attitude toward testing comes as a result for its importance in being part of final academic grades.

This research was divided into three chapters. The first chapter represented the theoretical background of anxiety from a psychological perspective and it tackled test anxiety in details, in addition to the illustration of mindfulness, CBT, MBSR and Wim hof method and their significance in treating stress and anxiety. The second chapter was about the research methodology and the practical framework in collecting data with two instruments (a questionnaire and an experimental study) which took place in Abdelhamid Ben Badis university with second year EFL students, in addition to the analysis of the results using tables and figures for a better understanding. However, the third chapter was devoted to the discussion of the findings in order to fulfil the research objective next to suggestions and recommendations which may help to solve the discussed problem.

The theoretical background at the international level of test anxiety and its exposure in an Algerian context were not really accurate to some extent since the psychology of the individual differs from a region to another next to the social structure of the setting. Generally, the researcher managed to answer the research question from a narrow perspective. Test anxiety does not belong to any type of the mentioned six types but it is a dependent type related to educational psychology. Therefore, it is generated by situational factors of testing environment (test taking skills and test duration) and also mental factors such as fear of bad marks.

The disorder is natural, and it is caused by neurological-cognitive symptoms which means it cannot be fully treated. However, mindfulness and meditation techniques such as Wim Hof breathing techniques can manage to reduce the unpleasant emotion to a certain extent.

Questionnaire

Dear students, this study is about Test Anxiety. I would be very grateful if you could answer the questionnaire which is made for research purposes.

Section ONE:

1- Gender:

Male Female

Section TWO:

1- You feel anxious because of taking a test.

Strongly agree Agree Disagree Strongly disagree

2- When do you feel Test anxiety?

Few days before taking a test

Moments before taking a test

During the test

After the test

3- Why do you feel anxious?

g- I am constantly feeling worried about different daily events and situations

h- I have sudden physical symptoms of anxiety

i- I have an intense fear of tests

j- Because I have to do it with other students and afraid of facing and embarrassing situation or being evaluated negatively

k- Because taking tests always means having unpleasant ideas and images in my mind

l- I have a terrible experience with taking tests and i am afraid that that will happen again

Section THREE:

1- What symptoms do you have when experiencing test anxiety?

k- Headache

l- Shortness of breath

- m- Rapid heartbeats
- n- Excessive feeling of fear
- o- Temporary depression
- p- Feeling of helplessness
- q- Negative self-perception
- r- Difficulty of concentration
- s- Racing thoughts
- t- Other:

2- What are the things that trigger your test anxiety?

- f- Test taking time is short
- g- Lack of test taking skills and preparation
- h- Poor test history
- i- Fear of failure and bad marks
- j- Other:

Section Four:

1- Did you try some strategies to overcome test anxiety?

Yes No

If yes, name them.

.....

2- Do you think that controlling your breathe using meditation techniques will help reducing test anxiety?

Strongly agree Agree Disagree Strongly disagree

18:56

H+ 3G 23%



Hi Mohamed,

Hope you are doing well and good to hear from you and apologies for the delay in response.

1- Do you consider WHM as a part of MBSR, CBT or any other brunch of Psychology or Meditation field ?

- We do not consider the WHM as part of those fields, but as a practice for the general well being. There are many anecdotal evidences that it can benefit conditions related to the mental aspect, however for us it is really important that the method is scrutinised by scientific research before we would make any implications about being it a method for in any of those fields. From people with a lot of yoga experience, and people who never have done any meditation we have very often heard that it is a great tool for getting into a meditative stance, however for us the method is a practice for improving the general well being, both physiologically and mentally.

2- What time do you recommend for the students to practice the Breathing technique of the WHM (few minutes before the exam or everyday before the exam for a period of time)?

As the practice of the method is still a personal journey we would not per see suggest a best particular moment for practicing. We believe that people who practice it consistently can decide much better for themselves when it works best for them, once they get experienced with the practice. For example for some people it helps to sleep better and a good night rest is very important for being able to concentrate well the next day.

All with all we believe that with consistent practice of the method (including the gradual cold exposure), that an individual trains itself being more resilient and becoming better in coping with stressful situations, meaning that a person can deal better with anxiety and this will benefit their productivity and concentration. We believe that the method should not be used as a quick easy tool, but as a consistent practice like voaga for improving the overall



18:56

H+ 3G 23%



before the exam or everyday before the exam for a period of time)?

As the practice of the method is still a personal journey we would not per see suggest a best particular moment for practicing. We believe that people who practice it consistently can decide much better for themselves when it works best for them, once they get experienced with the practice. For example for some people it helps to sleep better and a good night rest is very important for being able to concentrate well the next day.

All with all we believe that with consistent practice of the method (including the gradual cold exposure), that an individual trains itself being more resilient and becoming better in coping with stressful situations, meaning that a person can deal better with anxiety and this will benefit their productivity and concentration. We believe that the method should not be used as a quick easy tool, but as a consistent practice like yoga for improving the overall performance in the long run.

3- Can WHM be included in a psycho-educational program for students with Psychological problems such as Depression and anxiety ?

We do not want to make these claims as of yet as we believe this should be properly researched, but we are convinced that people with Depression and anxiety can greatly benefit from the practice of the method. There will be follow up studies about the influence of the method on the brain, however due to the COVID situation these are being delayed. (you may find the studies that have been conducted and studies that are in the pipe lines on this page: <https://www.wimhofmethod.com/science>)

Wishing you success for now and let me know if there may be anything else.

Warm regards,

Michael
Support Team
www.wimhofmethod.com



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