



Faculty of Cognitive Sciences and Human Development

**RELATIONSHIPS BETWEEN COGNITIVE AND AFFECTIVE OF
TEST ANXIETY WITH GENDER AND ACADEMIC
ACHIEVEMENT AMONG COGNITIVE
SCIENCE STUDENTS**

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**Bachelor of Science with Honours
(Cognitive Science)
2015**

**BF
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UNIVERSITI MALAYSIA SARAWAK

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Final Year Project Report ☒

Masters ☐

PhD ☐

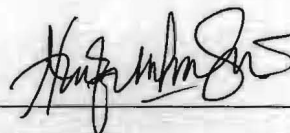
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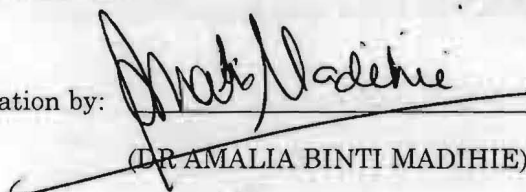


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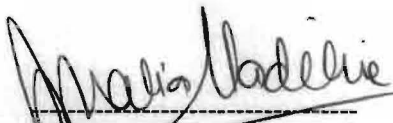
**RELATIONSHIPS BETWEEN COGNITIVE AND AFFECTIVE OF TEST ANXIETY WITH
GENDER AND ACADEMIC ACHIEVEMENT AMONG COGNITIVE SCIENCE
STUDENTS**

NURFARAHIN BINTI MOHD IDRIS

This project is submitted
in partial fulfilment of the requirements for a
Bachelor of Science with Honours
(Cognitive Science)

The project entitled 'Relationships Between Cognitive and Affective of Test Anxiety with Gender and Academic Achievement among Cognitive Science Students' was prepared by Nurfarahin Binti Mohd Idris and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Science with Honours (Cognitive Science)

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ACKNOWLEDGEMENTS

All praises to Allah the Almighty upon His blessings so I can accomplish my final year project entitled Relationships between Cognitive and Affective of Test Anxiety with Gender and Academic Achievement among Cognitive Science Students within the given time.

I would like to express my deepest appreciation to my supervisor, Dr Amalia binti Madihie who always guide me in completing this research and willing to share knowledge which is indeed valuable and worth in this learning process. I hope that this can be the starting point towards heading to the next and continuous level endeavour in the future. Without her guidance and persistent help, it would be hard to accomplish this final year project.

Also, I would like to express my gratitude to my beloved parents for all the supports and motivations which had encouraged me to accomplish my final year project. Without both of them, I would not able to stand until this level. Not to forget my siblings who always supported me and inspired me to be a successful person.

Lastly, infinite thanks to my fellow friends and classmates who always motivated and supported me, generous FSKPM lecturers for sharing their knowledge and to all who engaged directly and indirectly.

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ABSTRACT

The major aim of this quantitative study is to investigate the relationships between cognitive and affective of test anxiety with gender and academic achievement. This study also aims to determine which one of the two test anxiety factors is the most dominant factor that influences students' academic achievement. By employing random sampling technique, 206 respondents from second and third year undergraduate students of Cognitive Science Program (Session 1/2015/2016) were randomly selected. Questionnaires were distributed and the data obtained was then analysed by using both descriptive and inferential statistics analyses. The results showed that cognitive and affective factors of test anxiety were significantly correlated to students' academic achievement where ($r = -.264, p < .01$) and ($r = -.314, p < .01$) respectively. However, it was revealed that these two factors were not correlated to gender. Results also showed that affective factor (emotionality) contributed more in test anxiety than cognitive factor (worry), yet, the study found that variance of test anxiety affected students' academic achievement by only 9.9%. To conclude, test anxiety is one of the factors which are responsible for students' underachievement and low performance but it can be managed if the students know how to cope with test anxiety.

ABSTRAK

Matlamat utama kajian kuantitatif ini ialah untuk mengkaji hubungan di antara faktor kognitif dan afektif kebimbangan ujian dengan jantina dan pencapaian akademik. Kajian ini juga bermatlamat untuk menentukan faktor kebimbangan ujian yang paling dominan yang mempengaruhi pencapaian akademik pelajar. Dengan menggunakan teknik persampelan rawak, seramai 206 responden daripada pelajar tahun dua dan tiga Program Sains Kognitif (Sesi 1/2015/2016) telah dipilih. Borang soal selidik diedarkan dan data yang diperolehi dianalisis menggunakan kedua-dua analisa statistik deskriptif dan inferensial. Keputusan menunjukkan bahawa terdapat hubungan di antara faktor kognitif dan afektif kebimbangan ujian dengan pencapaian akademik pelajar di mana nilai ($r = -.264, p < .01$) dan ($r = -.314, p < .01$) bagi setiap faktor. Walau bagaimanapun, keputusan mendedahkan bahawa tidak terdapat hubungan di antara kedua-dua faktor ini dengan jantina. Keputusan juga menunjukkan faktor afektif (emosi) menyumbang lebih dalam kebimbangan ujian berbanding faktor kognitif, tetapi, varians kebimbangan ujian ini hanya mempengaruhi pencapaian akademik pelajar sebanyak 9.9%. Justeru, dapat disimpulkan bahawa kebimbangan ujian merupakan salah satu faktor yang bertanggungjawab dalam mempengaruhi pencapaian akademik pelajar, tetapi faktor ini masih boleh dikawal jika pelajar tahu bagaimana cara untuk menghadapinya.

CHAPTER ONE

INTRODUCTION

1.0 Overview of Chapter

This chapter consists of background of the study, problem statement, research objectives, hypotheses, and conceptual framework of the study. This chapter also describes the definition of relevant terms, significance of the study and finally closes with a short conclusion.

1.1 Background of Study

Test anxiety is believed to be the most anxiety that affects students' performance especially when this happens too frequent and excessively where the students themselves are not able to control it (Vitasari, P., Muhammad Nubli Abdul Wahab, Ahmad Othman, & Muhammad Ghani Awang, 2010). A lot of university students, regardless of age tend to feel anxious, jittered, and even panicky on examination day. Students may start to feel the uneasiness feelings resulted from test anxiety during the revision week. Then, the level of stress and anxiety are getting higher when it comes to the examination week. This is where sometimes, students cannot function during examination.

All of these are the common scenarios when students facing examinations. A study reported that students' failure rate is increased in each examination, where, cognitive and affective factors in test anxiety are found to be significantly related to students' academic achievement (Asliza Yusoff, 2009). What makes it worse, extreme levels of academic related anxiety may cause some of the students to leave their programs (Afolayan, Donald, Onasoga, & Adeyanju 2013).

Generally, anxiety is a psychological, physiological, and behavioural state induced in animals and humans by a threat to well-being or survival, either actual or potential (Steimer, 2002). Meaning to say, anxiety may result changes in three different states (psychological

state, physiological state and behavioural state) caused by any event that is considered as to bring menace to animals as well as to humans.

Basically, anxiety is a normal response to stress and therefore, it can simply be referred to as trouble. It is able to create blended kinds of feeling such as worry, fear, dread, panic and so much more of uneasiness feelings resulted from unpleasant emotional experiences (Afolayan & colleagues, 2013). Hence, with the kind of world that we have today, anxiety is a common phenomenon that happens to almost every person. The only thing that differentiates this common experience is the kind of situation that they have to deal with.

According to Syokwaa, Aloka and Ndunge (2014), anxiety usually occurs when an anticipated event is expected to make demands for which a person is unprepared and therefore lacks the necessary coping skills. This can be the reason why an individual encounter with the changes (as mentioned above) that may and may not bring deterioration to their quality of life activities. An individual should be able to cope with the demands of life if and only if they are able to control their anxiety. However, at worst case, in excess, anxiety may be considered as a disorder.

University students have a great deal to create anxiety, especially in study process. According to Vitasari and colleagues (2010), anxiety disorders are rising among students. This is worrying as university students are the products of higher learning institutions which means they are the ones that will carry on the nation progress after their graduation someday. It could be a big loss should these students cannot cope with the real world events.

There are many sources of anxiety among students such as examination anxiety, presentation anxiety, assignments anxiety and etcetera (Vitasari & colleagues, 2010). In this research, the one that will be studied is examination or simply, test anxiety. Test anxiety may cause students to have a physiological, behavioural and even psychological effect (Test

Anxiety, n. d.). Students are known to be encountered with test anxiety when they experience these three states of symptom during examinations.

In the article also, it is explained that in term of physiological state, students with test anxiety may experience rapid heartbeat, knot in stomach, headache, tension, profuse perspiration and etcetera. For behavioural state, students may be indecisive about answers, “going blank”, inability to organize thought and such. Lastly is psychological state whereby at this state, students may be experiencing the feelings of nervousness, restlessness or continual doubt and etcetera.

Test anxiety has always been a major concern as it can be associated with poor academic performance (Asliza Yusoff, 2009). When students are not able to control their level of anxiety during examinations, the likelihood for them to perform poor in exams is high. Under certain circumstances, for example when sitting for an exam of tough course (subject), students with test anxiety may deal with internal struggles that lead them to encounter the excessive symptoms of test anxiety which in turn result in bad examination outcome.

1.2 Problem Statement

Some courses particularly the tough ones taken in the program of study tend to build uneasiness feelings in students. Students are not confident whether or not they can do well in the examinations for those particular courses. For the second and third year students of Cognitive Science Program from Faculty of Cognitive Sciences and Human Development (FCSHD), their journey in this program could not get any tougher in every semester. What makes their study more distressful is that every semester they have to deal with technical courses for which many students had difficulty to handle especially during exam.

These students are unable to identify if their anxiety is being triggered by a rational or irrational fear. Means, even with exam preparation, they cannot deny the feeling of worry

that lingers way before the examination starts. They cannot keep themselves calm and keep on thinking negative things that might happen when they sit for the exam. In addition, during exam, they feel excessively nervous, tensed, and jittered. These excessive negative feelings may interfere with their thinking processes and in turn give negative effect on their exam performance. In long term, this situation might deteriorate their achievement should they are not able to control it.

If the higher ups of the faculty can better understand this situation, perhaps they might be able to help these students to cope with test anxiety. Therefore, it is important to investigate the impact from test anxiety towards students' academic achievements. Perhaps, the results from this study could be useful information to help these students.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this research is to investigate the relationships between cognitive and affective of test anxiety with gender and academic achievement among second and third year students of cognitive science program at Faculty Cognitive Sciences and Human Development (FCSHD), Universiti Malaysia Sarawak.

1.3.2 Specific Objectives

The specific objectives of this study were:

- i) To assess cognitive and affective performance of test anxiety between with academic achievement; and
- ii) To assess cognitive and affective performance of test anxiety between male and female students.

1.4 Hypotheses

Based on the research objectives, the null hypotheses were formulated:

H₀1: There is no significant relationship between factors of test anxiety and academic achievement (CGPA).

H₀2: There is no significant relationship between factors of test anxiety and gender.

1.5 Conceptual Framework

The conceptual framework for this research study is shown as follows:

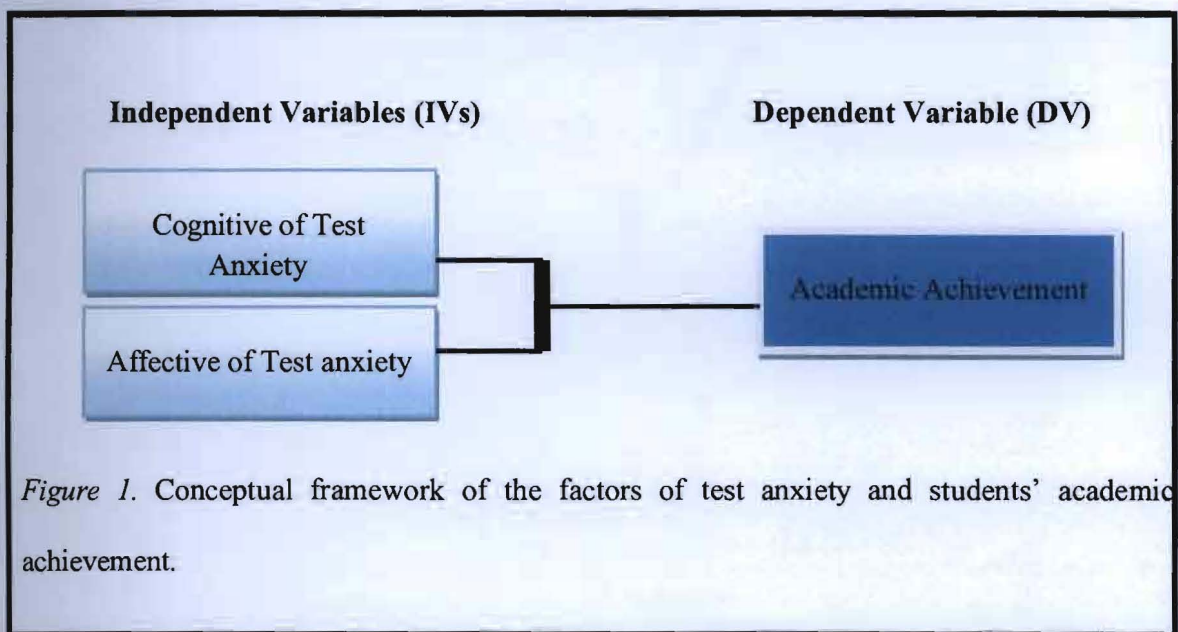


Figure 1. Conceptual framework of the factors of test anxiety and students' academic achievement.

Based on the conceptual framework shown, the independent variables (IVs) for this research study were cognitive and affective factors of test anxiety. Meanwhile, the dependent variable (DV) of this research study was students' academic achievement for third year students of Cognitive Science Program.

1.6 Definition of Terms

1.6.1 Cognitive

Conceptual Definition

Cognitive can be defined as the worry or thought expressions of concern about one's own performance (Farooqi, Ghani, & Spielberger, 2012). Sansgiri and Sails (2006) defined cognitive as the thoughts of or worrying about, failing an examination. On the other hand, according to Liebert and Morris (1967), cognitive is thought concerns about the consequences of failing and so.

Operational Definition

In this research, it is the cognitive (thinking) concerns when one is about to sit for tests or exams.

1.6.2 Affective

Conceptual Definition

Affective can be defined as the responses of emotionality or autonomic which tend to happen under examination stress (Liebert & Morris, 2012). It involved the bodily reactions to the testing situation. According to Cohen, Ben-Zur, and Rosenfield (2008), affective refers to the arousal of the autonomic nervous system, for instance, sweating, increased heart rate, and nausea. Cassady and Johnson (2001) defined affective or emotionality as the physiological responses experienced during evaluative situations.

Operational Definition

In this research, affective is the emotional feelings when one is about to sit for tests or examinations.

1.6.3 Test Anxiety

Conceptual Definition

It is defined as the feeling of overwhelming caused by the disturbance and distress dealt by the students around the world (Farooqi, Ghani & Spielberger, 2012). It is also defined as the specific, focused fear pattern in response to a situation involving evaluation of a student's performance (Asliza Yusoff, 2009). Meanwhile, according to Lawson (2006), test anxiety refers to an apprehension, panic, and ruminating thoughts potential that are experienced during self-performance evaluation situations, such as examinations.

Operational Definition

In this research study, test anxiety refers to the anxiety that students encountered with respect to exams or tests.

1.7 Significance of the Study

This research is important to see if it is true there are connections between the two factors of test anxiety (cognitive and affective) with gender and their academic achievements. This research study may contribute in revealing one of the factors that perhaps influences students' academic achievement, which is test anxiety. It may also create awareness among students about the importance of controlling cognitive and affective anxieties towards improving their academic performance.

Other than that, it helps to identify the difference effects towards test anxiety and academic achievement between genders. The findings or results may assist lecturers and the management of university to help students in handling this problem such as conducting appropriate programs for the students on how to cope with test anxiety. Nevertheless, this study may as well provide a source of reference for other researchers intending to do research on test anxiety among university students.

1.8 Conclusion

This chapter explains the background of the study, clarifies the problems that lead to this study, enlightens the purpose of this study and other important elements necessary in completing this study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview of Chapter

This chapter explores the contents of previous researches concerning test anxiety, the relationship between anxiety, gender, and students' performance. Finally, it also describes the relevant theories related to this study.

2.1 Literature Review

Life as the students in university may cause them to deal with a lot of factors which in turn leads to academic stress. There are various factors identified as the stressors to academic stress. However, in previous literatures, they are focusing on academic anxiety (Afolayan & colleagues, 2013; Asliza Yusoff, 2009; Mohammad Nadeem, Akhtar Ali, Saira Maqbool, & Syeda Uzma Zaidi, 2012; Das, Halder, & Mishra, 2014; Trifoni & Shahini, 2011; Rizwan Akram Rana & Nasir Mahmood, 2011; Fayegh Yousefi, Mansor Abu Talib, Mariani Mansor, Rumaya Juhari, Ma'rof Redzuan, 2010). This is because academic anxiety seems to be the most dominant cause to academic stress among university students.

Along the way of the process of studying, students may involve in various kind of situation that may or may not affect students' way of life. Meaning to say these situations have high tendency to cause anxiety in students. Since there are various sources to academic anxiety, test anxiety emerged as the most common anxiety encountered by students. Exploratory research has revealed that test anxiety is a condition that has recently received much attention (Asliza Yusoff, 2009). This anxiety happens during exams in which students will be at risk to experience changes in themselves in terms of psychological, physiological and behavioural state (Afolayan & colleagues, 2013; Trifoni & Shahini, 2011).

Some students achieved poor achievement in academic compares to their peers. In line with a study performed by Vitasari and colleagues (2010) suggested that there are many factors identified to be the causes of this situation and test anxiety is the dominant factor to academic stress. This type of anxiety is not going to deteriorate students' academic performance and achievement if they are able to control it, but it may give bad impact to students' academic achievement if it is too excessive (Afolayan & colleagues, 2013; Mohammad Nadeem & colleagues, 2012; Das, Halder, & Mishra, 2014; Rizwan Akram Rana & Nasir Mahmood, 2010). This is where students tend to cramp during exams and cause them to perform poor in examinations.

According to Liebert and Morris (1967), test anxiety is composed with two factors or components, cognitive (worry) and affective (emotionality). Cognitive plays a significant role in a situation in which people perform and are evaluated. Moreover, it is described as relatively unambiguous and can be assessed quantitatively and reliably (Sarason, 1986). According to Liebert and Morris (1967), cognitive is the factor that is primarily concern about the consequences of failing and so. Thus, in a situation where one is expecting success, consideration of cognitive should be minimized and vice versa.

On the other hand, emotionality factor of test anxiety was hypothesized to reflect the immediate uncertainty of the test-taking situation (Liebert & Morris, 1967). Thus, in contrast to cognitive, this factor should be higher when the expectancy of one's own performance is least certain. At this moment, these two factors of test anxiety were found to be strongly related, but still both of them are distinguishable by the virtue of their different patterns of correlations with other variables (Powers, 1986).

According to (Schwarzer, 1984), test takers are literally more concerned on their thought in which they worry about their performance and this has directed their attention to the self as actor instead of focusing on the task at hand. He was also concluded that the

cognitive factor of test anxiety is much important than affective factor of test anxiety in affecting the outcome in evaluation situations, but still, he admitted that cognitive and affective are confounded that it is hard to demonstrate the specific achievement debilitating impact that is caused by the cognitive factor, solely.

The relationship between test anxiety and academic performance is complex and vary upon several aspects of an individual, for instance, gender (Asliza Yusoff, 2009). Most of the previous researches focused on whether or not there is any significant relationship between test anxiety and academic achievement among students and did test anxiety give impact to academic achievement (Mohammad Nadeem & colleagues, 2012; Das, Halder, & Mishra, 2014; Trifoni & Shahini, 2011; Rizwan Akram Rana & Nasir Mahmood., 2010; Fayegh Yousefi & colleagues, 2010).

2.2 Anxiety, gender and students' performance

A study by Asliza Yusoff (2009) was conducted to identify the correlation between test anxiety and students' academic achievement. This study was conducted at Politeknik Sultan Azlan Shah (PSAS) where 306 sets of questionnaire were distributed to students. The results revealed that there was no significant correlation between test anxiety and students' academic achievement. Her study found out that test anxiety is among of the factors that affect students' under achievement but it can be managed by appropriate training.

This is in contrast to a study by Fayegh Yousefi and colleagues (2010) which conducted to determine the relationship between test anxiety and academic achievement among adolescents. Conducted under Iranian setting, there were 400 students involved in the research. The findings found out that there was a significant relationship between test anxiety and academic achievement. This in line with the results of a study conducted by Riwan Akram Rana and Nasir Mahmood (2011) which revealed the same findings of the relationship between test anxiety and students' academic performance. Other than that, in the

same study, it was found out that cognitive factor contributed more anxiety than affective factor.

In a study conducted by Cassady and Johnson (2002) which evaluated the impact of cognitive, affective and test procrastination among 168 students at Midwestern University revealed that higher levels of cognitive factor were associated with significantly lower test scores. Moderate levels of physiological arousal (emotionality) were generally associated with higher exam performance and gender differences were not related to exam performance.

Farooqi, Ghani, and Spielberger (2012) found that female students have higher test anxiety level, whereas male students have higher academic achievement (CGPA). This study was conducted at Services Institute of Medical Sciences (SIMS), Lahore, Pakistan to investigate gender differences in test anxiety level and academic performance and it involved 150 full time medical students.

Based on the analyses and results obtained from a study by Afolayan and colleagues (2013), students who experienced the states changes of test anxiety symptom are more likely to have lower academic achievement. A total of 50 students were drawn from Nursing Program at Niger Delta University and results indicated that generally, students expressed anxiety during exam which is seen as psychological, physiological and behavioral changes and abnormality.

As the test anxiety has been identified to be constructed by two factors (cognitive and affective), a different level of study in test anxiety has been conducted by Cassady (2001) on the study of investigating the stability of test anxiety over time. This study was done by examining the level of cognitive test anxiety at different points (3) in an academic semester. The results revealed that students had somewhat lower levels of test anxiety than previous ones. The measurement of bodily symptom was also found to stable and were somewhat lower than average.

2.3 Theories

2.3.1 Test Anxiety Theory

Test anxiety theory was first formally proposed by Mandler and Sarason (1952) and it has been further studied by many other researchers ever since. For example Spielberger (1980) which defined test anxiety as an apprehension that occurs when a student encounters test or examinations in any form and at any level. When students encounter with this anxiety, they are more likely to experience negative changes in their mental states, bodily functions as well as their external behaviors as to express their internal struggles.

In early studies, test anxiety theory was primarily based upon psychological responses experienced by students (Lawson, 2006). A study of test anxiety among the medical students by Folin, Demis, and Smillie (1914) reported that there was a presence of high level of glucose in the urine of the students after a stressful exam. Another study done by Bloch and Brackenrigde (1972) where blood samples were obtained from the respondents found that there was a strong negative correlation between an exam performance and high plasma cholesterol level (a physiological indicator of stress).

However, these studies have not shown the existence of emotional states that are usually experienced by someone during examinations. According to Zeiner (1998), researchers aimed to study test anxiety into deeper and develop a successful approach to treat it. Therefore, studies had been done and the components of test anxiety were then identified, worry (cognitive) and emotionality (affective).

2.3.2 Attribution Theory

Attribution theory was first studied by Fritz Heider in 1950s, but the work on this theory has been further developed by Bernard Weiner started in 1970s and become the major research model until now (Weibell, 2011). This theory is associated with students' academic performance. Since test anxiety is believed to affect achievement of students, this theory is