

# New Study Skills Training Intervention for Students Who Suffer from Test Anxiety

Saeid Motevalli<sup>1</sup>, Samsilah Bt. Roslan<sup>1</sup>, Tajularipin Sulaiman<sup>1</sup>, Sahandri Ghani Hamzah<sup>2</sup>, Norlizah Che Hassan<sup>1</sup>  
& Maryam Gholampour Garmjani<sup>3</sup>

<sup>1</sup> Faculty of Educational Studies, Universiti Putra Malaysia, Serdang, Malaysia

<sup>2</sup> Faculty of Education and Human Development, Universiti Pendidikan Sultan Idris, Tanjong Malim, Malaysia

<sup>3</sup> Faculty of Human Ecology, Universiti Putra Malaysia, Serdang, Malaysia

Correspondence: Samsilah Bt. Roslan, Faculty of Educational Studies, Universiti Putra Malaysia, Serdang 43400, Selangor Darul Ehsan, Malaysia. Tel: 60-3-8947-1241. E-mail: samsilah@gmail.com

Received: February 24, 2013 Accepted: March 27, 2013 Online Published: June 1, 2013

doi:10.5539/ass.v9n7p85

URL: <http://dx.doi.org/10.5539/ass.v9n7p85>

## Abstract

This article introduced a combination of study habits and test taking skills intervention for students on how to control test anxiety and promote their abilities and academic achievement. Based on skill-deficit model, anxious students suffer from test anxiety due to inability of using sufficient study habits and test taking skills to approach examination. Study skills interventions may assist anxious students to distinguish, recover and increase their study habits and test-taking skills. Study skills training intervention can improve students' cognitive processes which affect the organization, processing and retrieval information. Study skills and test-taking skills training are two related treatment components of new study-skills training program. The present intervention introduced in this paper, attempts to guide students on the nature of anxiety, test anxiety, goal setting, motivation, time management techniques, memory tips, reading and summarizing skills improvement and test taking tricks. Through this intervention as a practical tool, students can be able to learn various tips and strategies across the study habits and test taking skills activities to improve their study abilities and academic achievement.

**Keywords:** test anxiety, study skills training, study habits, test taking skills, study skill training intervention

## 1. Introduction

Anxiety is a familiar emotion which is caused by a perceived danger or threat to individuals (Hockenbury, 2010). The word anxiety is originated from 'to vex or trouble' which means absence or presence of psychological stress that cause feelings of fear, concerns, and horror (Bouras, 2007). Thus, anxiety refers to a psychological and physiological state consists of emotional, somatic, cognitive and behavioural components (Seligman, Walker, & Rosenhan, 2010). Similarly, anxiety is assumed to be a natural and ordinary response to a stressful agent, assisting someone in handling a difficult condition by means of encouraging the individual to get adapted to the problem. The criteria for the normality or abnormality of anxiety can be determined by the severity and it cause (Barker, 2009). In addition, anxiety is considered as an appropriate and consistent response that occurs regularly in individuals' life across all communities. Lack of anxiety or high anxiety can cause problems and leads to considerable risks. On the other hand, moderate anxiety can motivate people to manage their problems and be a success in their life (Abolghasemi, Mehrabizadeh-Honarmand, Najarian, & Shokrkon, 2004). In conclusion, anxiety is part of daily life that cannot be separated from people, so students who suffer from high levels of anxiety should be taught the best ways to control it.

Test anxiety is an educational problem that is commonly experienced by all students. Practically, students will feel some level of anxiety when they take a test, but for some students, the level of anxiety increases drastically and affects their performance (Abolghasemi et al., 2004). Test anxiety as a common and significant phenomenon in education, involves the combination of physiological over-arousal, worry and dread about test performance, and frequently disturbs the normal learning and also decrease the test performance (Miller, Morton, Driscoll, & Davis, 2006). The American Psychiatric Association's DSM-IV (1994) diagnostic criteria, identified test anxiety symptoms as a social anxiety disorder (Goonan, 2003). Moreover, test anxiety has shown a negative relationship with test performance, and their performance is about 12% less than non-anxious students (Cassady & Johnson,

2002; McDonald, 2001). Recent studies on test anxiety in Iran became relevant and influential factor in the Iranian educational system which is closely related to school students' performance and educational progress (Abolghasemi et al., 2004; Yousefi, Ma'rof, Mariani, Rumaya, & Mansor, 2010).

Yousefi pointed that test-anxiety, especially worry component has significant effects on Iranian high school students' academic performance (Yousefi et al., 2010). Similarly, Mazzone indicated that high school students with a high level of test anxiety had poor academic performance (Mazzone et al., 2007). Likewise, Keoghi, Bond, French, Richards, and Davis (2004) indicated that there is significant relationship between high school students' grade point average and total test anxiety scores. Moreover, Chapel (2005) identified that the different levels of test anxiety could produce significant effects on grade point average scores among students. However, research literature argued that test anxiety has a significant effect on students' grade point average (Annett, 2007; Keoghi et al., 2004; Masson et al., 2004; Sullivan, 2002; Yousefi et al., 2010). Generally, a great number of studies have shown negative significant relationship between test anxiety and academic achievement and have attempted to identify the different ways to cope with this problem.

## 2. Study-Skills Training and Test Anxiety

There are various types of training programs to boost study-skills which offers strategies for effective study and time management (Dendato & Diener, 1986; Naveh-Benjamin, McKeachie, Lin, & Holinger, 1981; Wachelka & Katz, 1999). According to the research, study skills training (SST) only does not work efficiently to decrease anxiety or enhance academic progress (Altmaier, 1981; Hembree, 1988). The combination of study-skills training and behavioural procedures such as systematic desensitization is more effective and efficient than using only study skills training (SST) to reduce anxiety (Allen, 1971; Hembree, 1988; Lent & Russell, 1978; Mitchell, Hall, & Piatkowska, 1975).

According to Hembree's (1988) integrative literature review showed that the highest effect sizes for anxiety reduction were observed when study skills training were combined with behavioural therapies. Therefore, anxiety can considerably be reduced if study skills are combined with behavioural therapies or cognitive-behavioural procedures then test anxiety decreases from about 0.8 to 1.2 standard deviations in precollege and high school students, respectively. Regarding test performance, Hembree's meta-analysis indicates that SST alone can boost test scores by about 0.39 standard deviations in postsecondary populations when it is combined with systematic desensitization, performance was increased by close to twice as much (about three quarters of a standard deviation). The increase of the test score by test-wiseness training was achieved in both school-aged and postsecondary populations by the value of a quarter of a standard deviation. In addition, evidence indicates that although academic performance of students with moderate to low test anxiety can be improved by only study counselling, but little evidence confirms its effectiveness in enhancing the grade point average of the high-test-anxious students (Gonzalez, 1995).

The combined effect of study-skills training and behavioural therapies can be traced in the superiority of a multitude of attacks on the interconnected problems of test anxiety and deficient preparation. Therefore, study-skills training may be a crucial element of any program of test-anxiety intervention (Dendato & Diener, 1986). It should be noted that study-skills training can improve students' study habits, but it will not always lead to better academic performance and higher scores because academic performance improves gradually. So it is difficult to expect students to get immediate benefits from counselling intervention except students with good study skills can have little reduction in their anxiety through counselling intervention (Naveh-Benjamin, 1991).

Prior to any study task, it is necessary to acquire some study skills including the reading and thinking skills. In other words, study skills is required to be defined, analyse, solve and report the problem independently and academically (Walker & Masterman, 2006). According to Reynolds and Werner (1993), learning skills are the constituents of learning strategy that include the skills of reading, writing, finding and organizing information, while learning strategy refers to the process of selecting and organizing the skills of the learner. Likewise, some researchers assert that the key components required for successful learning are to develop learning/memory techniques, learn the study strategies, use the skills related to reading (e.g. SQ3R method), write essays, take notes and make outlines and learn how to manage time (Fender-Scarr et al., 2003; Wooten, 2000).

The use of study skills is significantly different from other forms of teacher-run learning processes (Gettinger & Seibert, 2002). Effective study requires intention and the decision to learn and apply knowledge related to study skills. Students who experience academic problems compared to competent students, do not use any study skills to their reading activities; therefore, they face difficulty in understanding the academic texts (Gettinger & Seibert, 2002). It is required that the students use some of the study skills in doing their homework or in preparing for exams, but it seems that the teachers usually give a little time in dealing with such skills and instructions for

successful reading (Gettinger & Seibert, 2002). Masterman (2005) believed that, study skills can help to strengthen active learning, but for students at the secondary school level, learning is a routine job without any key role in making their identities. They have not become active learners since they have everything already available for them. Furthermore, they make no specific efforts to search for new information because they are less motivated to learn.

Only students who use the study skills and have learned to become independent are motivated to pursue their studies at higher institutions and consequently, become potentially prepared to take up responsibility for learning and its results. In addition, as their positive attitudes are reinforced, their motivation and inspiration to keep on working will increase which will eventually lead to higher self-esteem (Masterman, 2005). Furthermore, academic performance is positively affected by study skills (Williford, Chapman, & Kahrig, 2001). Thus, it is needed to provide regular study skills interventions to the students in general and freshmen in particular. In this way, their self-regulation in learning can be boosted, but this is not necessary at high school levels.

According to the recent research, students who are suffering from high test-anxiety that have poor test-taking skills can largely benefit from study-skills training (SST) interventions which are designed for the improvement of such skills. SST is a cognitive-deficit-based model which is targeted at enhancing various cognitive activities that influence the organization, processing, and retrieval of information (for example, test-taking skills and study habits), but training in study skills fails explicitly to deal with a certain cognitive occurrence of test anxiety (Spielberger & Vagg, 1995; Spielberger & Vagg, 1995b; Vagg & James, 1995). Instead, it is intended to boost other cognitive treatments.

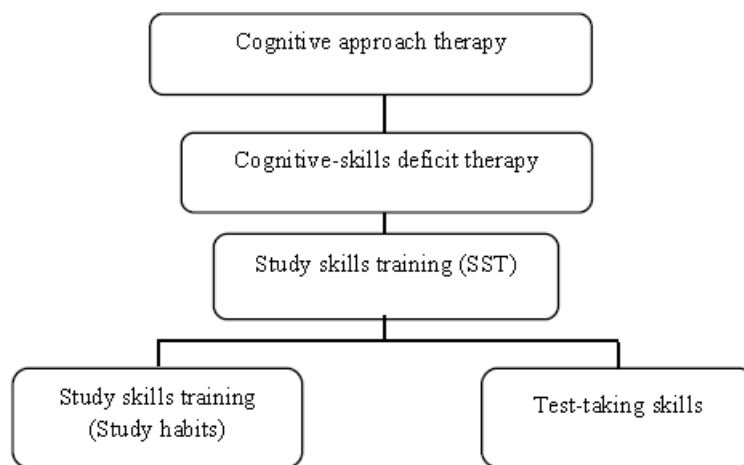


Figure1. Study skills training (SST) model

The educational components of present study-skills training programs address the following two interconnected treatment components:

1) The purpose of study-skills training is to guide students to learn the general principles of studying and being able to take part in tests. Through such training, students learn how to program and make efficient use of their study time and become good in understanding, structuring, processing, and keeping information for the time they need to retrieve during test-taking sessions. The components of the study-skills counselling programs are based on time management and use of response management techniques, study planning, enhancing reading and summarizing skills, controlling study behaviours and acquiring techniques useful for test-taking (Allen, 1973).

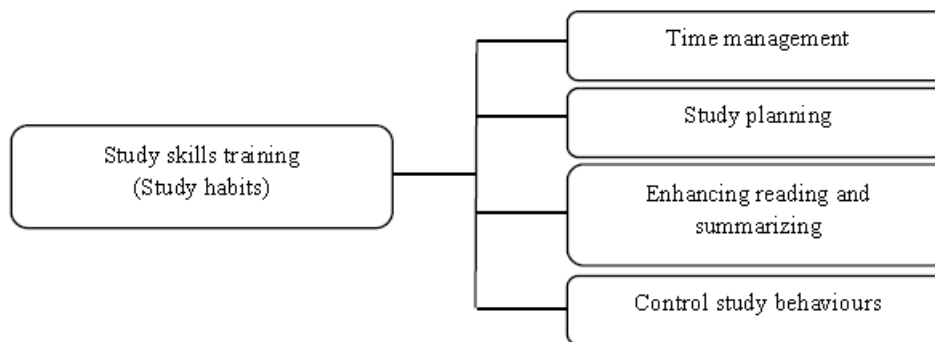


Figure 2. Study skills training (study habits)

2) Test-taking-skills training aims to provide techniques to assist students in comprehending exam questions and instructions. In this way, students can easily organize, and retrieve information and communicate clearly (Spielberger, Gonzalez, Taylor, Algaze, & Anton, 1978). There are some techniques which can enhance “test-wiseness”, these includes; see the length of the test, see if some parts need more time than others, answer one item at a time, return to harder items later (Kirkland & Hollandsworth, 1980) and deal with essay questions and objective items separately (Andrulis & Bajtelsmit, 1977). According to Naveh-Benjamin’s research, rote memorization is far less effective than a deep comprehension of processing of the materials. High-test-anxious students can benefit more if their approach is more meaningful since sufficient learning and processing of the information can have a direct impact on increasing the students’ knowledge achievement (Naveh-Benjamin et al., 1981). In this regard, the impertinent worry, which is rooted from their anxiety and lack of competence will be eradicated. If the students’ motivations and attitudes positively changed, they can be capable of developing effective strategies for proper study (Covington, 2000).

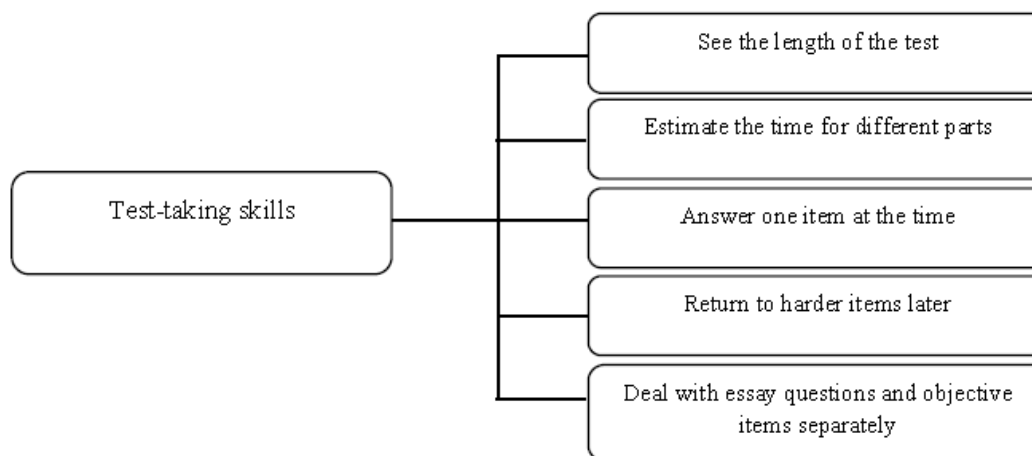


Figure 3. Test-taking skills model

Furthermore, the students learned how to manage their time appropriately which includes paying attention to the suggested time schedule and properly dealing with the different items in their study in order to cope with the interfering problems and course requirements. Students, too, practiced predicting what questions might be raised for text comprehension.

### 3. New Study Skills Training Intervention

More adequate learning and processing of a material directly enables students to gain a better knowledge of the study material and indirectly forgets unnecessary worry responses stemming from their anxiety due to the fact they have not yet learned material. Completing the study skills training helped anxious students to understand what is study skills training (SST) and how it could help them to cope with test anxiety and improve the academic achievement. Moreover, some strategies on study skills training can be useful even if none of anxious students is interested in use them to prepare themselves for test-taking situations.

New study skill training in this study consists of eight psycho educational counselling sessions in 90 minutes that content two components such as study skills (study habits) and test taking skills. The content validity of this intervention was approved by four Iranian experts who were associate professors in Imam Khomeini International University, Qazvin, Iran and reliability of this intervention was approved by high school students in Qazvin, Iran. At the first session participants introduced themselves to each other, and definitions of anxiety, test anxiety, state and trait anxiety were discussed. The second session focused on the identification of study skills training, advantages and purposes of study skills training. During the third session, participants were presented with the definition of academic achievement, motivation and goals setting. During the fourth session, time management and memory were described for the participants. In the fifth session, participants were presented with different kinds of learning styles, some skills for reading such as reading efficiency, muscle reading, and PQ4R. The sixth session of this study focused on identifying of test taking skills, advantages and purposes, some activities before and during the examination. The seventh session focused on some activities during and after the examination. Finally, the eight session of this intervention concentrated on the question and answer on the previous sessions (see in Figure4).

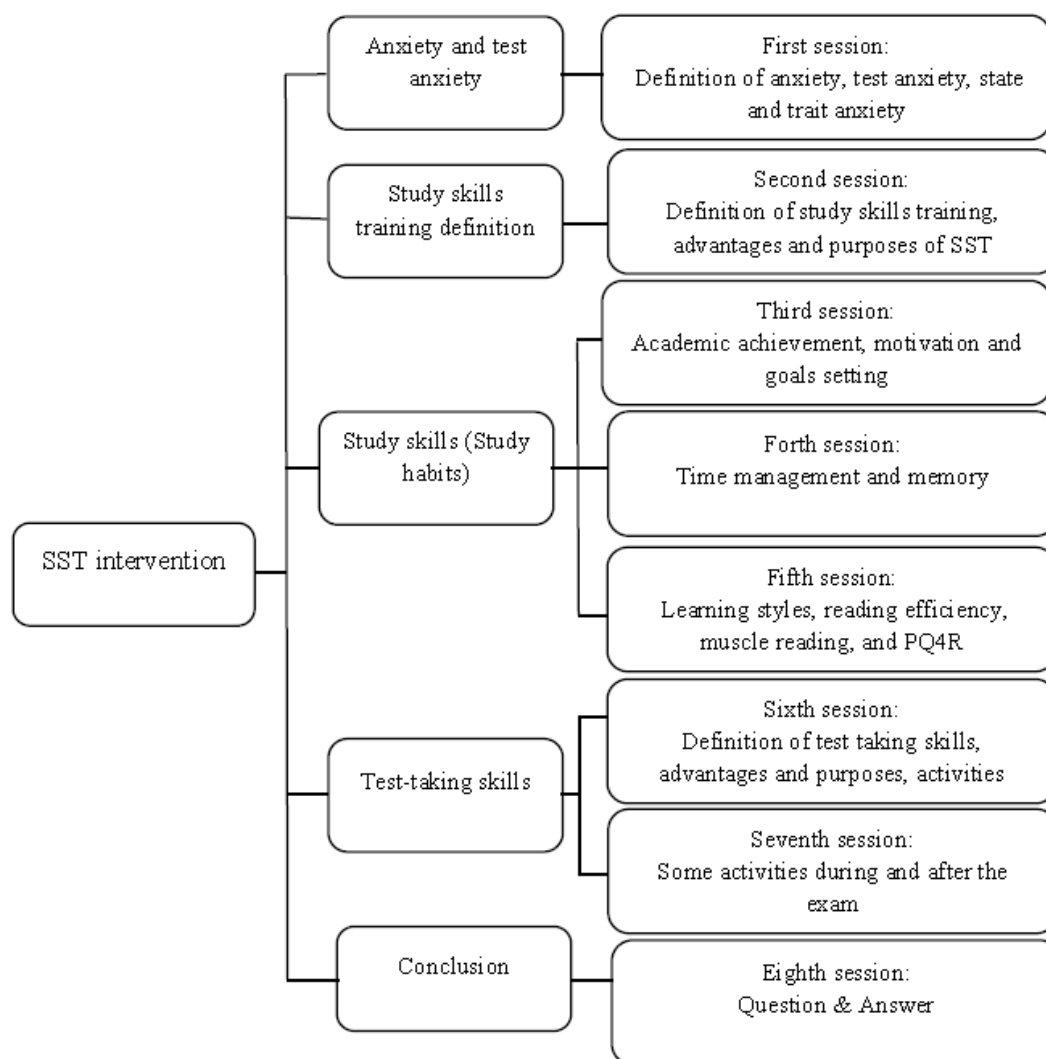


Figure 4. New study skill training intervention

In this intervention, students trained in some different dimensions such as the definition of anxiety, test anxiety, academic achievement, study habits, and test taking skills in order to cope with test anxiety and improve academic performance during eight sessions within 90 minutes. After completing this study skills training intervention, anxious students were expected to:

- 1) Understand the anxiety, test anxiety and the effects of test anxiety on academic achievement;

- 2) Identify two components of test anxiety (state and trait anxiety);
- 3) Determine two techniques of study skills training (Study skills and test-taking skills);
- 4) Distinguish some techniques of study skills to improve academic achievement and decrease test anxiety; and
- 5) Identify methods of test-taking skills to increase academic achievement and decrease test anxiety.

In the first activity of study skill training, the facilitator focused on the following contents which consisted of definition of anxiety and test anxiety (see in Table1).

Table 1. First activity of study skill training

| Teaching sessions                                                                         | Allocation of time                                                   | Procedure of the session                                                                                                                                                                                                                                                                                                                                                     | Time  |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| First teaching session on study skills training (Anxiety and test anxiety for 90 minutes) | Induction time                                                       | Participants introduced themselves to each other, and introduction about the main goal of intervention.                                                                                                                                                                                                                                                                      | 15min |
|                                                                                           |                                                                      | Facilitator explained and discussed the definition of anxiety and test anxiety.                                                                                                                                                                                                                                                                                              | 15min |
|                                                                                           |                                                                      | Facilitator explained normal and abnormal anxiety to the students.                                                                                                                                                                                                                                                                                                           | 10min |
|                                                                                           |                                                                      | Facilitator explained in detail, includes components of test anxiety (state and trait anxiety), symptoms and effects of test anxiety on students.                                                                                                                                                                                                                            | 15min |
|                                                                                           | Development of content on the definition of anxiety and test anxiety | Facilitator distributed a “List of my anxiety form” to students. Students were instructed to write down their normal and abnormal anxiety. After that, facilitator guided the students to balance up their anxiety level. Students then were asked to scale their anxiety level, where ‘1’ is very low and ‘9’ is very high.                                                 | 10min |
|                                                                                           |                                                                      | Facilitator distributed a “List of my state and trait anxiety symptoms form” to students. Students were instructed to write down their state and trait anxiety. After that, facilitator guided the students to balance up and analyse their test anxiety level. Students then were asked to scale their state and trait anxiety, where ‘1’ is very low and ‘9’ is very high. | 10min |
|                                                                                           | Conclusion and evaluation                                            | Finally, facilitator asked all of the participants to think about the concepts and definitions which discussed in this session.                                                                                                                                                                                                                                              | 15min |

In the second activity of study skill training, the facilitator focused on the following contents (see in Table2) which consisted of definition of the cognitive approach and skills-deficit model:

Table 2. Second activity of study skill training

| Teaching sessions                                                                                  | Allocation of time                                                                          | Procedure of the session                                                                                                        | Time  |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------|
|                                                                                                    | Induction time                                                                              | Review about the last session's content.                                                                                        | 15min |
|                                                                                                    |                                                                                             | Facilitator identified the cognitive approach and skills-deficit model.                                                         | 20min |
| Second teaching session on study skills training (Study skills training definition for 90 minutes) | Development of content on the definition of the cognitive approach and skills-deficit model | Facilitator explained study skills or study habits.                                                                             | 20min |
|                                                                                                    |                                                                                             | Facilitator explained test-taking skills                                                                                        | 20min |
|                                                                                                    | Conclusion and evaluation                                                                   | Finally, Facilitator asked all of the participants to think about the concepts and definitions which discussed in this session. | 15min |

In the third activity of study skill training, the facilitator focused on the following contents (see in Table3) which consisted of definition of academic achievement and test anxiety:

Table 3. Third activity of study skill training

| Teaching sessions                                                                             | Allocation of time                                                                | Procedure of the session                                                                                                                                                                                                                                | Time  |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|                                                                                               | Induction time                                                                    | Review about the last session's content                                                                                                                                                                                                                 | 15min |
|                                                                                               |                                                                                   | Facilitator identified the definition of academic achievement, the importance of education in every country, and relationship between test anxiety and academic achievement                                                                             | 20min |
| Third teaching session on study skills training (Study skills Or study habits for 90 minutes) | Development of content on the definition of academic achievement and test anxiety | Facilitator explained about the motivation, relationship between test anxiety and motivation, components of motivation, and intrinsic versus extrinsic motivation                                                                                       | 20min |
|                                                                                               |                                                                                   | Facilitator explained about the goal setting, different kinds of goals (short-term goals, intermediate, and long-term goals), choosing goals wisely, setting long-term goals, and the relationship between goal setting and success                     | 20min |
|                                                                                               | Conclusion and evaluation                                                         | Finally, Facilitator asked all of the participants to think about the concepts and definitions which discussed in this session and filled the list with "my intrinsic and extrinsic motivation", and "my short-term, intermediate, and long-term goals" | 15min |

In the fourth activity of study skill training, the facilitator focused on the following contents (see in Table4) which consisted of definition of time management:

Table 4. Fourth activity of study skill training

| Teaching sessions                                                                              | Allocation of time                                          | Procedure of the session                                                                                                                                                           | Time  |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Fourth teaching session on study skills training (Study skills Or study habits for 90 minutes) | Induction time                                              | Review about the last session's content                                                                                                                                            | 15min |
|                                                                                                | Development of content on the definition of time management | Facilitator identified the importance of time management, how to use of time, some good time management strategies, and how to develop the time planning and management            | 20min |
|                                                                                                |                                                             | Facilitator explained about the memory, different kinds of memory (such as: short-term sensory store, working memory, and long-term memory), and some strategies to improve memory | 20min |
|                                                                                                |                                                             | Facilitator explained how to fill "list of my time wasters", "list of my use of time", and "list of my time analysis"                                                              | 20min |
|                                                                                                | Conclusion and evaluation                                   | Finally, Facilitator asked all of the participants to think about the concepts and definitions which discussed in this session and free discussion                                 | 15min |

In the fifth activity of study skill training, the facilitator focused on the following contents (see in Table5) which consisted on learning styles:

Table 5. Fifth activity of study skill training

| Teaching sessions                                                                             | Allocation of time                        | Procedure of the session                                                                                                                                                                                                                       | Time  |
|-----------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Fifth teaching session on study skills training (Study skills Or study habits for 90 minutes) | Induction time                            | Review about the last session's content                                                                                                                                                                                                        | 15min |
|                                                                                               | Development of content on learning styles | Facilitator identified different kinds of learning styles such as auditory, visual, and kinesthetic learning, tips and strategies to improve learning styles                                                                                   | 15min |
|                                                                                               |                                           | Facilitator explained active reading versus passive reading, strategies before, during, and after reading                                                                                                                                      | 15min |
|                                                                                               |                                           | Facilitator explained muscle reading strategy as an active reading                                                                                                                                                                             | 15min |
|                                                                                               | Conclusion and evaluation                 | Facilitator explained PQ4R method (preview, question, read, reflect, recite, and review)<br>Finally, Facilitator asked all of the participants to think about the concepts and definitions which discussed in this session and free discussion | 15min |

In the sixth activity of study skill training, the facilitator focused on the following contents (see in Table6) which consisted of test taking skills:

Table 6. Sixth activity of study skill training

| Teaching sessions                                                                   | Allocation of time                           | Procedure of the session                                                                                                                                                                 | Time  |
|-------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Sixth teaching session on study skills training (Test-taking skills for 90 minutes) | Induction time                               | Review about the last session's content                                                                                                                                                  | 15min |
|                                                                                     |                                              | Facilitator identified the meaning, purposes, and advantages of test taking skills                                                                                                       | 20min |
|                                                                                     | Development of content on test taking skills | Facilitator explained some strategies before the exam such as managing review time, creating review tools, predicting test questions, going to class prepared, and letting go of anxiety | 20min |
|                                                                                     |                                              | Facilitator explained about some strategies and activities during the exam such as how to reply the multiple choice exams and True/False exams                                           | 20min |
|                                                                                     | Conclusion and evaluation                    | Finally, Facilitator asked all of the participants to think about the concepts and definitions which discussed in this session                                                           | 15min |

In the seventh activity of study skill training, the facilitator focused on the following contents (see in Table7) which consisted of test taking skills:

Table7. Seventh activity of study skill training

| Teaching sessions                                                                     | Allocation of time                           | Procedure of the session                                                                                                                                                                      | Time  |
|---------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Seventh teaching session on study skills training (Test-taking skills for 90 minutes) | Induction time                               | Review about the last session's content                                                                                                                                                       | 15min |
|                                                                                       |                                              | Facilitator identified the matching exams and useful strategies for replying them                                                                                                             | 20min |
|                                                                                       | Development of content on test taking skills | Facilitator explained the essay exams and beneficial strategies for replying them                                                                                                             | 20min |
|                                                                                       |                                              | Facilitator explained some activities after the exams such as compare how you prepared with how you performed, talk with the instructor, keep all materials, evaluate answers and test scores | 20min |
|                                                                                       | Conclusion and evaluation                    | Finally, facilitator asked all of the participants to think about the concepts and definitions which discussed in this session                                                                | 15min |

All the activities procedures during the eight sessions of study skills training focused on the question and answer among anxious students and facilitator who attempted to clarify the main goals of these sessions. In summary, eight psycho educational sessions for study skills training on the basis of skill-deficit model was developed in order to create a standard intervention procedure on test anxiety among anxious students with regards to study habits and test taking skills. This intervention assists students to understand what is study skills training (SST)? How it can help them to decrease test anxiety and improve academic achievement with regards to critical thinking skills. Likewise, this intervention includes some tips and strategies on study habits and test taking skills that can be useful even if students do not suffer from high test anxiety.

#### 4. Conclusion

This article has identified a new study skills training intervention as a process of assisting anxious students to manage test anxiety efficiently. Through this intervention, anxious students can be educated to understand test

anxiety and its negative effects on the academic performance. Likewise, anxious students can be able to identify two components of test anxiety such as the state and trait anxiety to achieve a clear understanding on the problem. Besides, they can be able to determine the importance of study skills training, advantages and purposes of applying these skills in the study period. Furthermore, anxious students can be able to identify the importance of academic achievement, motivation, goals setting, time management, and memory tips on the basis of study habits skills. Anxious students can clarify the meaning, purposes and advantages of test taking skills on test anxiety and academic performance through test taking tricks or skills. Similarly, on the basis of test taking skills, anxious students can be enlighten to learn some strategies before the exam such as managing review time, creating review tools, predicting test questions, going to class prepared, and letting go of anxiety. Also, they can learn some strategies and activities during the exam such as how to reply the multiple choice questions, True/False questions, matching questions, essay questions and beneficial strategies for replying them. Finally, anxious students can identify some activities after the exams such as compare how they were prepared, how they performed, how they talk with the instructor and how they evaluate answers and test scores. Through this intervention session, anxious students were familiar with different kinds of study habits and test taking skills to cope with test anxiety in order to improve their academic performance.

Based on this intervention the authors recommended that this study skills training intervention could be a reliable intervention to assist anxious students to combat test anxiety properly. Study habits and test taking tricks/skills used on test anxiety can be applicable to other emotional disorders such as depression, phobia and so on. However, this intervention is characterized by certain limitations such as making sessions interesting for students, presenting the contents in the simple forms, understandable and applying a combination intervention which involves study habits (time management, goal setting, reading skills, memory tips) and test taking tricks (activities before, during, and after the exam). Finally, this article posed a challenge for further study to investigate the effects of intervention on anxious students in other dimensions such as depression, phobia and so on.

## References

- Abolghasemi, A., Mehrabizadeh-Honarmand, M., Najarian, B., & Shokrkon, H. (2004). The effectiveness of therapeutic methodology of stress inoculation training and systematic desensitization in test anxiety students. *Journal of Psychology*, 8(29), 3-21.
- Allen, G. J. (1971). Effectiveness of study counseling and desensitization in alleviating test anxiety in college students. *J Abnorm Psychol*, 77(3), 282-289. <http://dx.doi.org/10.1037/h0031021>
- Allen, G. J. (1973). Treatment of test anxiety by group-administered and self-administered relaxation and study counseling. *Behavior Therapy*, 4, 349-360. [http://dx.doi.org/10.1016/S0005-7894\(73\)80115-7](http://dx.doi.org/10.1016/S0005-7894(73)80115-7)
- Altmaier, E. M., & Woodward, M. (1981). Group vicarious desensitization of test anxiety. *Journal of Counseling Psychology*, 28, 467-469. <http://dx.doi.org/10.1037/0022-0167.28.5.467>
- Andrulis, R. S., & Bajtelsmit, J. (1977). *Adult assessment: A source book of tests and measures of human behavior*: Thomas.
- Annett, B., & Gordon, M. (2007). Relating children's attentional capabilities to intelligence, memory and academic achievement: A test of construct specificity in children with asthma. *Journal of Child Neuropsychology*, 13, 64-85. <http://dx.doi.org/10.1080/09297040600770779>
- Barker, P. (2009). *Psychiatric and Mental Health Nursing: The Craft of Caring*. USA: Oxford University Press.
- Bouras, N. A. H. G. (2007). *Psychiatric and Behavioural Disorders in Intellectual and Developmental Disabilities* (2nd ed.). UK: Cambridge University Press.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive Test Anxiety and Academic achievement. *Contemporary Educational Psychology*, 27(2), 270-295. <http://dx.doi.org/10.1006/ceps.2001.1094>
- Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., & Gubi, A. (2005). Test anxiety and academic achievement in undergraduate and graduate students. *Journal of Educational Psychology*, 97, 268-274. <http://dx.doi.org/10.1037/0022-0663.97.2.268>
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual review of psychology*, 51(1), 171-200. <http://dx.doi.org/10.1146/annurev.psych.51.1.171>
- Dendato, K. M., & Diener, D. (1986). Effectiveness of cognitive/relaxation therapy and study-skills training in reducing self-reported anxiety and improving the academic performance of test-anxious students. *Journal of Counseling Psychology*, 33(2), 131. <http://dx.doi.org/10.1037/0022-0167.33.2.131>

- Fender-Scarr, L., MacCracken, M. J., Stadulis, R., Caine, N., Gandee, R., Schofman, G., . . . Maddox, K. (2003). A Children's Version of the Social Physique Anxiety Scale.
- Gettinger, M., & Seibert, J. K. (2002). Contributions of study skills to academic competence. *School Psychology Review, 31*(3), 350-365.
- Gharamaleki, N. S. (2006). *Comparing the efficacy of cognitive therapy, and study skills training in the treatment of test anxiety and improvement academic achievement regarding personality components*. PhD., Tarbiat Modares University.
- Gonzalez, H. (1995). Systematic desensitization, study skills counseling, and anxiety-coping training in the treatment of test anxiety. *Test anxiety: Theory, assessment, and treatment*, 117-132.
- Goonan, B. (2003). Overcoming test anxiety: Giving students the ability to show what they know. In *Measuring up: Assessment issues for teachers, counselors, and administrators*. ERIC.
- Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of educational research, 58*(1), 47-77. <http://dx.doi.org/10.3102/00346543058001047>
- Hockenbury, D. (2010). *Discovering psychology*: WH Freeman & Company.
- Keoghi, E., Bond, F. W., French, C. C., Richards, A., & Davis, R. E. (2004). Test-Anxiety, Susceptibility to destruction and examination performance. *Journal of Anxiety, Stress and Coping, 17*(3), 241-252. <http://dx.doi.org/10.1080/10615300410001703472>
- Kirkland, K., & Hollandsworth, J. G. (1980). Effective test taking: skills-acquisition versus anxiety-reduction techniques. *Journal of Consulting and Clinical Psychology, 48*(4), 431. <http://dx.doi.org/10.1037/0022-006X.48.4.431>
- Lent, R. W., & Russell, R. K. (1978). Treatment of test anxiety by cue-controlled desensitization and study-skills training. *Journal of Counseling Psychology, 25*(3), 217. <http://dx.doi.org/10.1037/0022-0167.25.3.217>
- Masson, A. M., Hoyois, P., Pcadot, M., Nahama, V., Petit, F., & Ansseau, M. (2004). *Girls are more successful than boys at the university: Gender group differences in models integrating motivational and aggressive components correlated with test-anxiety*. Retrieved from <http://www.ncbi.nlm.nih.gov/sites/entrez?db=journals&term>
- Masterman, L. (2005). What Are Study Skills and How Are They Taught?
- Mazzone, L., Ducci, F., Scoto, M. C., Passaniti, E., D'Arrigo, V. G., & Vitiello, B. (2007). The role of anxiety symptoms in school performance in a community sample of children and adolescents. *BMC Public Health, 7*, 347. <http://dx.doi.org/10.1186/1471-2458-7-347>
- McDonald, A. S. (2001). The prevalence and effects of test anxiety in school children. *Educational Psychology, 21*, 89-101. <http://dx.doi.org/10.1080/01443410020019867>
- Miller, M., Morton, J., Driscoll, R., & Davis, K. A. (2006). Accelerated Desensitization with Adaptive Attitudes and Test Gains with 5th Graders. *Education Resources Information Center, 14*.
- Mitchell, K. R., Hall, R. F., & Piatkowska, O. E. (1975). A group program for the treatment of failing college students. *Behavior Therapy, 6*(3), 324-336. [http://dx.doi.org/10.1016/S0005-7894\(75\)80107-9](http://dx.doi.org/10.1016/S0005-7894(75)80107-9)
- Naveh-Benjamin, M. (1991). A comparison of training programs intended for different types of test-anxious students: Further support for an information-processing model. *Journal of Educational Psychology, 83*(1), 134. <http://dx.doi.org/10.1037/0022-0663.83.1.134>
- Naveh-Benjamin, M., McKeachie, W. J., Lin, Y. G., & Holinger, D. P. (1981). Test anxiety: Deficits in information processing. *Journal of Educational Psychology, 73*(6), 816. <http://dx.doi.org/10.1037/0022-0663.73.6.816>
- Reynolds, J., & Werner, S. C. (1993). An alternative paradigm for college reading and study skills courses. *Journal of Reading, 272-278*.
- Sapp, M. (1999). *Test Anxiety: Applied Research, Assessment, and Treatment Interventions* (2nd ed.): University Press of America, Lanham, MD.
- Seligman, M., Walker, E. F., & Rosenhan, D. L. (2010). *Abnormal psychology* (4th ed.). New York: W.W. Norton & Company, Inc.
- Spielberger, C. D. (2005). *The nature, assessment, and reduction of test anxiety*. Paper presented at the In, Academic benefits from test-anxiety reduction programs. Symposium at the American Psychological

- Association Convention, Washington, D.C.
- Spielberger, C. D., Gonzalez, H. P., Taylor, C. J., Algaze, B., & Anton, W. D. (1978). Examination stress and test anxiety. *Stress and anxiety*, 5, 167-191.
- Spielberger, C. D., & Vagg, P. R. (1995a). *Test anxiety: Theory, assessment, and treatment*. Washington, DC: Hemisphere/Taylor & Francis.
- Spielberger, C. D., & Vagg, P. R. (1995b). Test anxiety: A transactional process model.
- Spielberger, C. D., & Vagg, P. R. (1995c). *Test anxiety: Theory, assessment, and treatment*. Washington, DC: Taylor and Francis.
- Sullivan, L. (2002). *The effect of test anxiety on attention and memory skills in undergraduate students*. Paper presented at the Annual Review of undergraduate research at the College of Charleston, USA Charleston.
- Vagg, P. R., & James, D. (1995). *Cognitive therapy, study skills training and biofeedback in the treatment of test anxiety*. New York: Taylor & Francis.
- Wachelka, D., & Katz, R. C. (1999). Reducing test anxiety and improving academic self-esteem in high school and college students with learning disabilities. *Journal of behavior therapy and experimental psychiatry*, 30(3), 191-198. [http://dx.doi.org/10.1016/S0005-7916\(99\)00024-5](http://dx.doi.org/10.1016/S0005-7916(99)00024-5)
- Walker, S., & Masterman, L. (2006). *Learning designs and the development of study skills: Reuse and community perspectives*. Paper presented at the Proceedings of the First International LAMS Conference.
- Williford, A. M., Chapman, L. C., & Kahrig, T. (2001). The university experience course: A longitudinal study of student performance, retention, and graduation. *College Student Retention Research, Theory & Practice*, 2(4), 327-353. <http://dx.doi.org/10.2190/K7K9-91EG-E6F9-EVMK>
- Wooten, D. B. (2000). Qualitative Steps toward an Expanded Model of Anxiety in Gift-Giving. *Journal of Consumer Research*, 27(1), 84-95. <http://dx.doi.org/10.1086/314310>
- Yousefi, F., Ma'rofi, R., Mariani, M., Rumaya, J., & Mansor, A. T. (2010). The Effects of Family Income on Test-Anxiety and Academic Achievement among Iranian High School Students. *Asian Social Science*, 6(6).
- Zeidner, M. (1998). *Test anxiety: The state of the art*. New York: Plenum Press.

### Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).