

Effect of Mindfulness Based Instructional Strategy on Academic Anxiety of Senior Secondary School Students

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Abstract

This paper focuses on the effect of mindfulness based instructional strategy on academic anxiety of senior secondary school students. Sample of the study consisted of 80 students of Nehru Garden Senior Secondary school, Jalandhar, Punjab. A random sampling technique was used to collect the sample. Research methodology included experimental method with pre-test post -test control group design. Data was collected by using “The Mindful Attention Awareness Scale for Adolescents (MAAS-A) by De Bruin, Zijlstra, Van De Weijer-Bergsma and Bogels (2011), Academic Anxiety Scale developed by Cassady, J.C., Pierson, E. E., & Starling, J. M. (2019), General Group Test of Intelligence (GGTI) by G. C. Ahuja (2005). Statistical techniques- mean, standard deviation, t- test and Two way Analysis of Variance were employed to analyze the collected data. Results of the study indicated that mindfulness teaching strategy is effective technique to reduce the academic anxiety. It is more effective technique to reduce the academic anxiety of students with high intelligence. It also showed significant interaction effect of instructional strategy i.e. mindfulness teaching strategy and conventional teaching strategy and intelligence i.e. high intelligence and low intelligence on academic anxiety of students.

Keywords: Mindfulness Instructional Strategy, Conventional Teaching Strategy, Academic Anxiety

Mindfulness

Mindfulness is a type of meditation in which a person focuses on being intensely aware of what he or she has been sensing and feeling at that particular moment. Practicing mindfulness includes breathing methods, guided imagery and other practices to relax the body and mind which is further helpful in reducing stress.

Spending too much time in planning, daydreaming, problem-solving, over thinking can be draining and we may experience stress, depression and anxiety symptoms. Practicing mindfulness exercises can help us to direct our attention away from this kind of thinking and engage us with the world around us.

Feeling some degree of nervousness about academic requirements is common in all the learners. A low degree of anxiousness can prove helpful in creating motivation to meet academic goals and this is called facilitative anxiety. When these feelings of anxiety become very intense and become detrimental to academic success, then learners must engage in coping strategies to manage their academic anxiety.

Ways to practice mindfulness include:

Live in the moment. For presence of mind, we should bring an open, accepting and discerning attention to everything that we do and find happiness in each and every work.

Pay attention. We need to take the time to experience our environment with all of our senses - sight, smell, sound, taste and touch. While eating our favorite food, we should try to take the time to smell and taste to enjoy it fully.

Focus on breathing. When we experience negative thoughts, we should sit down, take a deep breath and close our eyes and focus on our breath as and when it moves in and out of our body. Sitting and breathing for a minute can help tremendously.

Accepting yourself. We should try to accept ourselves as we would accept a good friend.

Body scan meditation. For this, we need to lie on our back with extended legs and arms at sides with facing up palms. We should focus our attention slowly and deliberately on each part of our body, in an order i.e. from toe to head or head to toe and feel sensations, thoughts and emotions associated with each part of our body. Body scan meditation includes:

- **Sitting meditation.** We should sit comfortably with our back straight, feet flat on the floor and hands in our lap. While breathing through nose, our focus should be on breath moving in and out of our body. If physical sensations or thoughts interrupt our meditation, we should note the experience and then return our focus to our breath.
- **Walking meditation.** In a quiet place of 10 to 20 feet length, we should begin to walk slowly and focus on the experience of walking, while being aware of subtle movements and the sensations of standing.

Academic Anxiety

Anxiety is a normal reaction to some certain specific situations. A small level of anxiety is considered normal, but severe anxiety can be a matter of concern. Academic anxiety is related to academic tasks such as assignments, tests, results and it can become more detrimental over time. As a learner's academic performance suffers, the anxiety level related to some specific academic tasks increases Huberty (2012). Most teachers will have learners with social anxiety or academic anxiety or both. Social anxiety can also affect learner's academic performance. If a learner has social anxiety, he or she might not be able to complete group tasks or might not feel comfortable in asking for help in classroom. Social anxiety can lead to academic anxiety. Teaching self-regulation to learners

can reduce anxiety and increase academic performance (Ader & Erktin, 2012). Students experiencing academic anxiety feel apprehensive over academic tasks. Learners may feel anxiety related to every academic task. Some may feel anxiety related to test taking or some in other specific tasks. But anxiety is not always negative.

Components of Academic Anxiety

1. Worry: Worry is the sum of all the thoughts that prevent us from focusing and successfully completing our academic task such as preoccupation with the consequences of doing poorly, prediction of failure or self-degrading thoughts. Some effective techniques for managing this component include disputing self-defeating and negative thoughts with realistic and more productive thoughts.

2. Emotionality: It shows the biological symptoms of anxiety which may be in the form of sweaty palms, fast heart-beat or muscle tension. Breathing and muscle relaxation exercises can work better to deal with emotionality.

3. Task generated interference: These are the behaviors related to the task in hand and such behaviors are unproductive and these prevent successful performance. These include- spending lot of time on those questions for which answers are not known, constantly watching the time on clock during exam. These behaviors can take many forms, but can be changed or reduced with the help of management techniques and the best management technique is to take the help of a counselor to identify the specific behaviors that cause problems and working with a study skills instructor to create a plan and for reducing or changing them.

4. Procrastination: Procrastination means to postpone for another day. It affects the psychological and behavioral health of learners. Academic procrastination is also a form of procrastination resulting in health problems such as stress, anxiety, a sense of guilt, severe loss of productivity as well as social disapproval for not meeting commitments. Piers Steel (2010) indicated that anxiety is just as likely to get people to start working early as late and studies focused on procrastination should be impulsiveness i.e. anxiety will cause delay only if people are impulsive.

5. Study skill deficits: These are the problems with learners' current study methods which create anxiety such as poor notes- taking during lecture which result in confusion during major assignments and last-minute cramming resulting in inability to answer the questions in exam leading to poor performance and less grades. Many learners' experience worry, emotionality and task related interferences as a result of study skills deficits. To improve the performance and grades, there is the need to address these study deficits. Only a study skills instructor can help in this.

Effects of academic anxiety

Anxiety plays important role in everyday life. It is not always a bad thing as a high level of anxiety interferes with concentration and memory. But without anxiety, learners would lack motivation to study for exams or doing daily homework. A moderate amount of anxiety helps to improve academic performance by creating motivation. But it should not be very high leading to health issues.

Review of the related literature

Anand (2024) studied the effect of mindfulness based instructional strategy on achievement, academic stress and achievement motivation of senior secondary school students. Sample of the study consisted of 50 commerce students of XII grade of Government senior secondary school, Panchkula. Academic stress scale by Sinha (2014), Mindfulness attention awareness scale by Brown et al. (2011) were used to collect the data. Experimental method with pre test-post test control group design was used to analyze the collected data. Descriptive statistical technique like mean, median, standard deviation, skewness and kurtosis were used to match the data and t-test and 2X2 analysis of variance was used to see the main and interaction effect of teaching strategies. Findings of the study revealed that there was significant difference in academic anxiety scores of students of experimental and control group, it was also observed that academic anxiety of experimental group was much more reduced as compared to control group.

Shreshtha (2024) revealed the influence of mindfulness on academic anxiety and emotional regulation among students. Convenience sampling (non probability sampling technique) was used to find the sample of 152 university students between the age group of 18-28. Academic anxiety scale by Cassady, 2010 and The mindful attention scale by Brown and Ryan, 2023 were used to collect the data. Regression analysis were used to ascertain the relationship between mindfulness and academic anxiety and it was found that as the unit of mindfulness increases, academic anxiety decreases.

Metasari, Andriyaningsih, Burmansah, Pramono, Suryanadi, Kasrah and Seneru (2024) examined the effect of mindfulness practice on students' learning anxiety. Sample of the study consisted of 81 students selected by using proportional random sampling technique. Survey method was used to collect the data. Simple regression analysis was done. t-values were calculated. Findings of the study showed a significant reverse relationship between mindfulness practices and learning anxiety. Jaismin,

Peter and Maurya (2025) studied the effects of mindfulness-based intervention on Academic Anxiety and well-being of rural adolescents. Sample of the study consisted of 47 rural school adolescents having academic anxiety. Mindfulness-Based Intervention (MBI) was applied to enable the adolescents to deal with academic anxiety and improve their well-being. Warwick-Edinburgh Mental Wellbeing Scale was

used to collect the data. Results of the study indicated a significant decline in academic anxiety of the rural students.

Rationale of the Study

In this digital era, learners are more connected with social media and have developed the habit of procrastination. They lack in time management and are less focused in the classroom teaching learning process. Absence of mind results into anxiety related issues in academics, as to survive in this competitive world, there is the requirement to be on the toes. Therefore, the need arises to adopt such strategies which can help them to be able to properly utilize the time and concentrate the attention in academics. Mindfulness instructional strategies consisting of different activities for concentration are the requirement of the day to reduce the academic anxiety. Therefore, the need aroused to adopt such mindfulness instructional strategies to see their effect on academic anxiety.

Objectives

The study was conducted to achieve the following objectives:

- 1) To study the effect of instructional strategies (mindfulness teaching strategy and conventional teaching strategy) on academic anxiety of students.
- 2) To study the difference in the academic anxiety of students in relation to intelligence (high intelligence and low intelligence).
- 3) To study the interaction effect of instructional strategies (mindfulness teaching strategy and conventional teaching strategy) and intelligence (high intelligence and low intelligence) on academic anxiety of students.

Hypotheses

The study was conducted to test the following hypotheses:

- 1) There will be no significant difference between mean gain scores of academic anxiety of students taught through two different instructional strategies (mindfulness teaching strategy and conventional teaching strategy).
- 2) There will be no significant difference in mean gain scores of academic anxiety in relation to intelligence (high intelligence and low intelligence) of students.
- 3) There will be no significant interaction effect of instructional strategy (mindfulness teaching strategy and conventional teaching strategy) and intelligence (high intelligence and low intelligence) on academic anxiety of students.

Present study was delimited to:

- 1) The students of IX class of secondary schools of Jalandhar City, Punjab.
- 2) The students of Punjab School Education Board only.

Method

Experimental method was used to conduct the study.

Design

Investigator used pre test post test control group design to see the effectiveness of mindfulness instructional strategies on academic anxiety.

Sample

The target population of present study consisted of all the PSEB students of IX class of secondary schools of Jalandhar City, Punjab.

A random sampling technique was used to draw out the sample. The list of Government schools was procured from Director Public Instructions (Schools) through District Education Officer, Jalandhar. All the Government Schools provided for internship of B.A.Ed/B.Sc.B.Ed students were shortlisted. Nehru Garden School was selected by using the lottery method. Sample of the present study consisted of 80 students of IX class only.

Tools

Following tools were used to collect the data:

- 1) The Mindful Attention Awareness Scale for Adolescents (MAAS-A) by De Bruin, Zijlstra, Van De Weijer-Bergsma and Bogels (2011)
- 2) Academic Anxiety Scale developed by Cassady, J.C., Pierson, E. E., & Starling, J. M. (2019)
- 3) General Group Test of Intelligence (GGTI) by G.C. Ahuja (2005)

Procedure

At the first stage, investigator practiced the mindfulness strategy to the pupil teacher dealing directly with the students. Pupil Teacher prepared the students mentally for before starting the procedure. The Mindful Attention Awareness Scale for Adolescents and Academic Anxiety Scale, General Group Test of Intelligence were applied as pre test on all the students to know the mindfulness level, academic anxiety, intelligence level of the students and matching of the groups was done. Out of the two homogenous groups, one group was assigned to experimental group and other was considered as control group.

Experimental group was exposed to mindfulness breathing exercises, mindfulness stretching, mindfulness body scan (walking meditation) before starting the teaching and during teaching learning process mindful listening, mindful questioning to the teacher to clear the doubts, mindful response to the questions asked by teacher, mindful reading, mindful writing, mindful assessment of content, mindful break in between the class, mindful sharing of thoughts, mindful reflection of experiences were focused. On the other hand, control group was taught with conventional teaching strategy. Both the groups were taught the selected topics of science such as Atoms and Molecules, Structure of Atom, Tissues for four weeks by using these methods.

After completion of the treatment, Academic Anxiety Scale was again administered to experimental and control groups to know the post test scores.

At the end, proper feedback was taken from the students about mindfulness teaching strategy. Opportunity was provided to them to share their experiences and difficulties while doing mindful breathing exercises, mindful body scan.

Results

Collected data was analyzed by using mean, standard deviation, t- test and Two way Analysis of Variance.

All hypotheses were tested as under

1) There will be no significant difference between mean gain scores of academic anxiety of students taught through two different instructional strategies (mindfulness teaching strategy and conventional teaching strategy)

To investigate the difference in academic anxiety (mean gain scores) of experimental and control group mean, standard deviation and t- ratio were worked out and calculated values are given in **Table 1.1.**

Table 1. Significance of Difference in Academic Anxiety (Gain scores) of Experimental and Control Group

Groups	N	Mean	Standard Deviation	t-ratio
Experimental Group	40	9.70	6.85	8.19*
Control Group	40	3.02	2.45	

The values of table 1. indicate mean gain scores of academic anxiety for experimental (Mindfulness instructional strategy) and control group (Conventional teaching strategy). These values show reduced academic anxiety. Values of mean for experimental and control group are 9.70 and 3.02. The value of t- ratio is 8.19, which is significant at (p<0.01). It shows that there is significant difference in academic anxiety (gain scores of experimental and control group. The hypothesis 1, states that “There will be no significant difference between mean gain scores of academic anxiety of students taught through two different instructional strategies (mindfulness teaching strategy and conventional teaching strategy)” is not accepted.

2) To study the difference in the academic anxiety of students in relation to intelligence (high intelligence and low intelligence)

To investigate the difference in academic anxiety (mean gain scores) of high intelligence and low intelligence group mean, standard deviation and t- ratio were worked out and calculated values are given in **Table 2.**

Table 2. Significance of Difference in Academic Anxiety (Gain scores) of High Intelligence and Low Intelligence Group

Groups	N	Mean	Standard Deviation	t-ratio
High Intelligence Group	40	10.19	5.90	2.99*
Low Intelligence Group	40	13.14	10.94	

Table 2. shows mean gain scores of academic anxiety for high intelligence group and low intelligence

group. It indicated improvement over academic anxiety. Values of mean for high intelligence group and low intelligence group are 10.19 and 13.14. The value of t- ratio is 2.99, which is significant at (p<0.01). It shows that there is significant difference in academic anxiety (gain scores) of high intelligence group and low intelligence group. The hypothesis 2, states that “There will be no significant difference in mean gain scores of academic anxiety in relation to intelligence of students (high intelligence and low intelligence)” is not accepted.

3) To study the interaction effect of instructional strategies (mindfulness teaching strategy and conventional teaching strategy) and intelligence (high intelligence and low intelligence) on academic anxiety of students

In order to find the main effect of Instructional strategy i.e. mindfulness teaching strategy and conventional teaching strategy and main effect of classificatory variable i.e. high intelligence and low intelligence alongwith interaction effect of teaching strategy and intelligence on academic anxiety, 2x2 Analysis of variance was worked out. The values are given in **Table 3.**

Table 3. Summary of 2x2 Analysis of Variance on Gain scores of Academic Anxiety

Test of Between-Subject Effects (Teaching Strategies and Intelligence Level)						
Dependent Variable: Academic Anxiety						
Source	Type III Sum of Squares	Df	Mean Square	F	P	
Groups (Teaching Strategy)	119.062	1	119.062	10.09	0.00	
Intelligence	112.45	1	112.45	9.53	0.00	
Groups (Teaching Strategy)* Intelligence	69.33	1	69.33	5.88	0.01	
Error	897	76	11.80			
Corrected Total	1197.842	79				

Main Effects: In the present study main effects were studied regarding:

- ✓ Treatment
- ✓ Intelligence

3. (a) Treatment

Main Effect of Instructional Strategy (Mindfulness teaching strategy v/s Conventional teaching strategy) on Academic Anxiety of Students:

Table 3. highlights that F- statistics corresponding to groups (teaching strategy) is 10.09, which is significant at 0.01 level. It shows that academic anxiety (gain scores) of experimental group is significantly better than that of control group. Therefore, mindfulness teaching strategy is better than conventional teaching strategy.

3 (b) Treatment

Main Effect of Intelligence (High Intelligence v/s Low Intelligence) on Academic Anxiety of Students:

Table 3 indicates that F- statistics corresponding to groups (intelligence) is 9.53, it is significant at 0.01 level. It shows that academic anxiety (gain scores) of high intelligence group is significantly better than that of low intelligence group students.

3 Interaction Effect

To know the joint effect of two variables, interaction effect is calculated.

3. (a) Treatment and Intelligence

Interaction Effect of Instructional Treatment (Mindfulness Teaching Strategy v/s Conventional Teaching Strategy) and Intelligence (High Intelligence v/s Low Intelligence) on Academic Anxiety of Students:

Table 3 indicates that F- statistics corresponding to groups (Teaching Strategy x Intelligence) is 5.88, which is significant at $p=0.01$. Therefore, hypothesis 3 which states that "There will be no significant interaction effect of instructional strategy (mindfulness teaching strategy v/s conventional teaching strategy) and intelligence (high intelligence v/s low intelligence) on academic anxiety of students" is not accepted.

Discussion

1) To study the effect of instructional strategies (mindfulness teaching strategy and conventional teaching strategy) on academic anxiety of students

The results of present study indicate significant difference between mean gain scores on academic anxiety of students taught through mindfulness teaching strategy and conventional teaching strategy. Students taught through mindfulness teaching strategy had significant higher mean gain scores than students taught through conventional teaching strategy. On the basis of results, it is concluded that mindfulness teaching strategy is effective technique to reduce the academic anxiety.

2) To study the difference in the academic anxiety of students in relation to intelligence (high intelligence and low intelligence)

The results of present study indicate significant difference between mean gain scores on academic anxiety of students in relation to intelligence. Students with high intelligence group had significant higher mean gain scores than students with low intelligence group. On the basis of results, it is concluded that mindfulness teaching strategy is more effective technique to reduce the academic anxiety of students with high intelligence.

3) To study the interaction effect of instructional strategies (mindfulness teaching strategy and conventional teaching strategy) and intelligence (high intelligence and low intelligence) on academic anxiety of students

After interpreting the data, related to interaction between instructional strategy (mindfulness teaching strategy v/s conventional teaching strategy) and intelligence (high intelligence v/s low intelligence), following results were found:

- Experimental group (taught through mindfulness teaching strategy) with high intelligence level has significantly reduced academic anxiety as compared to experimental group (taught through mindfulness teaching strategy) with low intelligence level.

- It is also observed that control group (taught through mindfulness teaching strategy) with high intelligence level and control group (taught through mindfulness teaching strategy) with low intelligence level do not differ significantly on academic anxiety.

From above discussion, it is concluded that there is significant interaction effect of instructional strategy (taught through mindfulness teaching strategy) and intelligence (high intelligence v/s low intelligence) on academic anxiety of students.

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