

## **CHAPTER III**

### **METHOD**

The current study titled, “**Efficacy of Expressive Arts Therapy to enhance Academic Achievement among Learning Disabled Adolescents**” focuses on the holistic development of the learning disabled adolescents. This chapter describes the methods used to carry out the research. It includes the Objectives, Research Hypotheses, Research Design, Tools used in data collection, Sampling Technique, Intervention Programme administered and the Conceptual Framework of the study.

#### **Objectives**

- To identify gender difference in emotional intelligence, social competence, working memory, attention and academic achievement among learning disabled adolescents.
- To measure the relationship between emotional intelligence, social competence, working memory, attention and quality of life among learning disabled adolescents.
- To enhance the emotional intelligence, social competence, working memory, attention, quality of life and academic achievement of the learning disabled adolescents through an intervention programme based on psychotherapy

#### **Research Hypotheses**

The following research hypotheses would be tested during the research

H1, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Emotional Intelligence”

H2, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Social Competence”

H3, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Working Memory”

H4, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Attention”

H5, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Academic Achievement”

H6, “There will be a significant difference among Learning Disabled Boy and Girl Adolescent students in Quality of Life”

H7, “There will be a significant relationship between Emotional Intelligence and Social Competence among Learning Disabled Adolescents”

H8, “There will be a significant relationship between Emotional Intelligence and Working Memory among Learning Disabled Adolescents”

H9, “There will be a significant relationship between Emotional Intelligence and Attention among Learning Disabled Adolescents”

H10, “There will be a significant relationship between Emotional Intelligence and Academic Achievement among Learning Disabled Adolescents”

H11, “There will be a significant relationship between Emotional Intelligence and Quality of Life among Learning Disabled Adolescents”

H12, “There will be a significant relationship between Social Competence and Working Memory among Learning Disabled Adolescents”

H13, “There will be a significant relationship between Social Competence and Attention among Learning Disabled Adolescents”

H14, “There will be a significant relationship between Social Competence and Academic Achievement among Learning Disabled Adolescents”

H15, “There will be a significant relationship between Social Competence and Quality of Life among Learning Disabled Adolescents”

H16, “There will be a significant relationship between Working Memory and Attention of the Learning Disabled Adolescents”

H17, “There will be a significant relationship between Working Memory and Academic Achievement among Learning Disabled Adolescents”

H18, “There will be a significant relationship between Working Memory and Quality of Life among Learning Disabled Adolescents”

H19, “There will be a significant relationship between Attention and Academic Achievement among Learning Disabled Adolescents”

H20, “There will be a significant relationship between Attention and Quality of Life among Learning Disabled Adolescents”

H21, “There will be a significant relationship between Academic Achievement and Quality of Life among Learning Disabled Adolescents”

H22, “There will be significant difference between Experimental Group and Waitlist Control Group in Emotional Intelligence among Learning Disabled Adolescents”

H23, “There will be significant difference between Experimental Group and Waitlist

Control Group in Social Competence among Learning Disabled Adolescents”

H24, “There will be significant difference between Experimental and Waitlist Control Group in Attention among Learning Disabled Adolescents”

H25, “There will be significant difference between Experimental Group and Waitlist Control Group in Working Memory among Learning Disabled Adolescents”

H26, “There will be significant difference between Experimental Group and Waitlist Control Group in Academic Achievement among Learning Disabled Adolescents”

H27, “There will be significant difference between Experimental Group and Waitlist Control Group in Quality of Life among Learning Disabled Adolescents”

H28, “There will be significant difference during before, after and follow-up phases in emotional intelligence among learning disabled adolescents”

H29, “There will be significant difference during before, after and follow-up phases in social competence among learning disabled adolescents”

H30, “There will be significant difference during before, after and follow-up phases in attention among learning disabled adolescents”

H31, “There will be significant difference during before, after and follow-up phases in working memory among learning disabled adolescents”

H32, “There will be significant difference during before, after and follow-up phases in academic achievement among learning disabled adolescents”

H33, “There will be significant difference during before, after and follow-up phases in quality of life among learning disabled adolescents”

### **Population and Sampling Frame**

#### **Location of the Study**

Wisdomms Special School and Learning Centre, Chennai and Saraswathi Kendra Learning Centre for Children, Chennai were selected for the study. The reasons for selecting these centers are

- \* Availability of the participants
- \* National Institute of Open School (NIOS) based curriculum
- \* Permission provided by the school authorities

#### **Sampling Procedure**

Purposive sampling procedure was followed and it is non probability sampling technique where the researcher deliberately chooses the sample items. It is also known as

deliberate sampling, judgment sampling, selective sampling, or subjective sampling (Kothari, 2004). The sample included 80 learning disabled adolescents aged between 11 years to 16 years. The learning disabled adolescents comprised of dyslexic adolescents. The learning disabled adolescents (N=80) were screened and diagnosed for intelligence, reading score and writing score to identify dyslexic adolescents. In the experimental group, “there were 22 boys and 13 girls. In waitlist control group, there were 14 boys and 17 girls.”

### **Inclusion criteria**

- Adolescents with dyslexia only
- Adolescents in the age group of 11 to 16 years
- Adolescents with poor memory and attention
- Adolescents with average emotional intelligence and social competency skills

### **Exclusion Criteria**

- Adolescents with intellectual disorder
- Adolescents with psychological disorder
- Adolescents with high academic achievement
- Adolescents with Attention Deficit Hyperactivity Disorder (ADHD)

### **Research Design**

Before, After and Follow-up with Waitlist Control Group Design was used for the purpose of research. In a waitlist control group design, the intervention will be administered to experimental group. The waitlist control group will be under waiting list and will receive the intervention after experimental group (Schimelpfening, 2021).

The primary data for the study was collected using questionnaires and the study was carried out in 4 stages.

Stage I: From Wisdomms Special School and Learning Centre, Chennai and Saraswathi Kendra Learning Centre for Children, Chennai, 80 learning disabled adolescents were selected. The learning disabled adolescents were diagnosed for dyslexia using Raven’s Standard Progressive Test, Schonell Graded Reading Test and Schonell Graded Spelling Test. After considering factors like moderate intelligence quotient (IQ) and low reading score and spelling score, 70 learning disabled adolescents were included in the study. All the 70 students were assessed using a Case Study Schedule, The Schutte Self Report

Emotional Intelligence Test (SSEIT), Social Competence Scale (SCS), Moss Attention Rating Scale (MARS), Youth Disability Screener and Digit Span Test.

Stage II: After assessments, the learning disabled adolescents were divided into 2 groups – 35 adolescents from Saraswathi Kendra Learning Centre for Children, Chennai and 31 adolescents from Wisdomms Special School and Learning Centre, Chennai. The adolescents of Saraswathi Kendra Learning Centre for Children (N=35) belonged to experimental group and the adolescents of Wisdomms Special School and Learning Centre belonged to waitlist control group (N=31). The experimental group received the intervention for 8 weeks (20 sessions) whereas the waitlist control group were kept waiting and they participated in the intervention at the end of follow-up phase. The therapy was administered to the Experimental group on every Monday, Wednesday and Friday for an hour for 8 weeks (20 sessions) and to the waitlist control group, the therapy was administered at the end for 1 month on every Tuesday, Thursday and Saturday for an hour.

Stage III: In this stage, the learning disabled adolescents were reassessed to measure the effectiveness of the intervention by administering the psychological tests used initially in stage II.

Stage IV: Here, the participants were measured using the same psychological tests used in Stage II. This follow-up phase followed after a month gap from the completion of intervention.

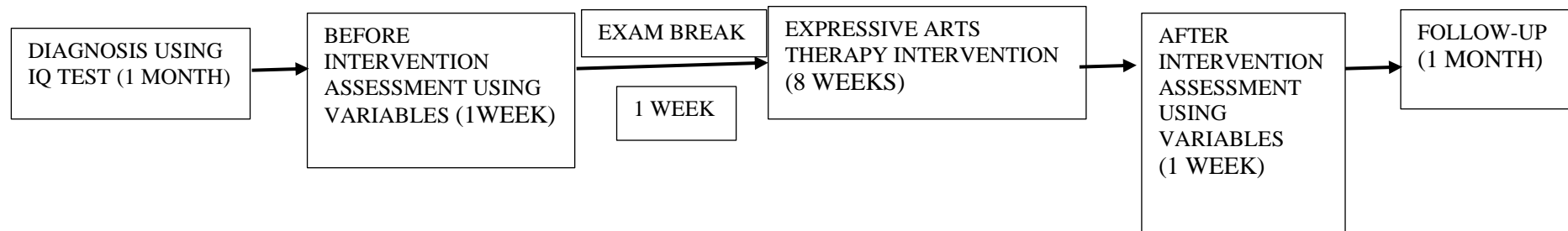
**RESEARCH DESIGN: BEFORE, AFTER AND FOLLOW-UP WITH WAITLIST CONTROL GROUP**

As per APA standards, Waitlist Control Groups are a group of research participants who receive the same intervention or treatment as those in the experimental group but at a later time (*APA Dictionary of Psychology, 2018*).

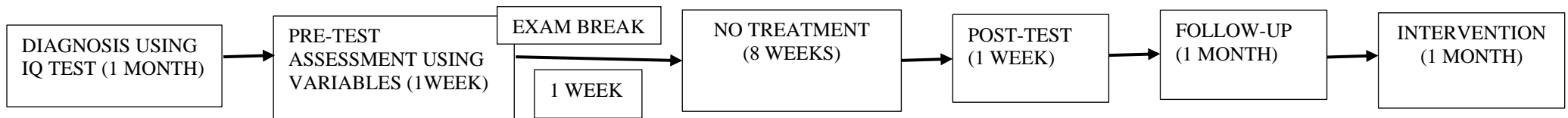
**Diagrammatic Representation of the Research Design**

**WAITLIST CONTROL GROUP**

**SARASWATHI KENDRA (EXPERIMENTAL GROUP): (4 Months, 3 Weeks)**

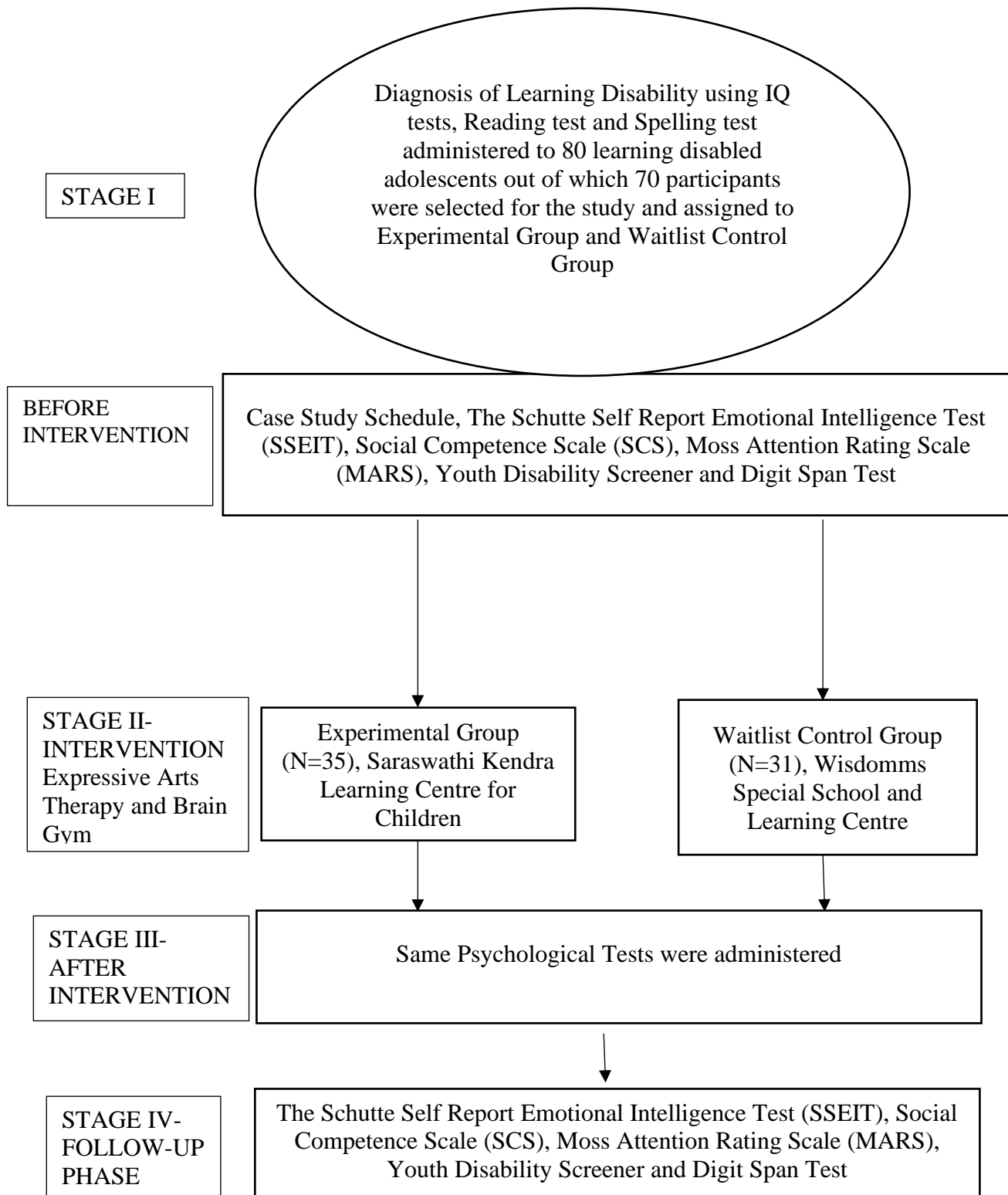


**WISDOMMS SCHOOL (WAITLIST CONTROL GROUP): (5 MONTHS, 3 WEEKS)**



**Figure 1: Waitlist Control Group**

**Flow Chart**



**Figure 2: Before, After and Follow-up with Waitlist Control Group**

### **Tools Used**

The tools used in the study were

1. Case Study Schedule
2. Raven's Standard Progressive Matrices
3. Schonell Graded Reading Test
4. Schonell Graded Spelling Test
5. The Schutte Self Report Emotional Intelligence Test (SSEIT)
6. Social Competence Scale (SCS)
7. Moss Attention Rating Scale (MARS)
8. Youth Disability Screener (YDS)
9. Digit Span Test – Subscale of Malin's Intelligence Scale for Indian Children

### **Case Study Schedule (Annexure II)**

Case study schedule was used to collect the demographic details like name, age, class, gender, family details, birth order and education.

### **Raven's Standard Progressive Matrices (Annexure III)**

Raven's Standard Progressive Matrices is a nonverbal, culture fair intelligence test was devised by Raven (1938). It measures general cognitive ability and fluid intelligence. The test consists of five subtests and each level contains different logic. The beginning of each level is easy and progressively becomes difficult to attend. In every level, the participant has to complete a pattern with a missing piece. This test can be administered to children and adolescents in the age group 6 to 16 years. The reliability of the test is 0.85 (John & Raven, 2003) and the validity of the test is 0.64 (Albokai & Al-Subaihi, 2021).

### **Schonell Graded Reading Test (Annexure IV)**

Schonell Graded Reading Test by F. J. Schonell is a reading and diagnostic test with 100 words. Each word proceeds to the other word with difficulty. Initial words that follow the phonological rules are easy to read and as the words progresses with difficulty, phonological rules cannot be relied upon. It can be administered for children in the age group of 5 to 15 years. There is no time limit (Teale & Rowley, 1984). The reliability of the test is 0.73 and validity is 0.85 (Jethwani & Subhashini, 2020).

**Schonell Graded Spelling Test (Annexure V)**

The Schonell Graded Spelling Test by F.J. Schonell has 100 graded words. These words are read aloud and the participants will write the spelling of the word (Veerabudren et al., 2023). There is no time limit. The reliability of the test is 0.69 and validity of the test is 0.83. The test can be administered to students aged from 6 to 15 years (Jyoti & Bhawana, 2013).

**The Schutte Self Report Emotional Intelligence Test (SSEIT) (Annexure VI)**

The Schutte Self Report Emotional Intelligence Test (SSEIT) by Schutte et al. (1998) is a 33 item self-report scale. The questionnaire is based on 5 point likert scale with 1 = *Strongly disagree*, 2 = *Strongly agree*, 3 = *Neutral*, 4 = *Agree* and 5 = *Strongly Agree*. Three questions out of the 33 items are reverse scored. The score ranges between 33 to 165. Higher the scores, higher emotional intelligence. The scale has a reliability of 0.90 and has proven fit for predictive and discriminant validity. The test can be conducted to young adolescents (Ciarrochi et al., 2001) and to learning disabled students (Hen & Goroshit, 2014).

**Social Competence Scale (SCS) (Annexure VII)**

Social Competence Scale (SCS) developed and validated by Agarwal and Vashistha (2016) measures the social skills among learning disabled adolescents. The test-retest reliability of the scale is 0.87 and Cronbach Alpha Reliability is 0.81. The Criterion related Validity score of the scale is +0.42. The test has 50 items with reverse scoring. Each of the 50 items are based on 5 point Likert scale ranging from 5 (most of the time) to 1 (almost never).

**Digit Span Test – Subscale of Malin’s Intelligence Scale for Indian Children (Annexure VIII)**

The Malin’s Intelligence Scale for Indian Children (MISIC) adapted from Wechsler Intelligence Scale for Children (WISC) with a reliability score of 0.91 and a congruent validity of 0.63 (Malin, 1968). Digit span sub test aims to measure working memory and children with specific learning disability face difficulty in forward and backward digit span tests (Giofrè et al., 2016). Digit span test is based on the method of digit recall in which requires the recall of numbers dictated in the correct sequence. Highest number of digits repeated without error is scored. This applies to both forward and backward numbers.

### **Moss Attention Rating Scale (MARS) (Annexure IX)**

Moss Attention Rating Scale (MARS) constructed by Whyte et al. (2008) is a 22 item scale devised to measure the attention span of clinical patients to be administered by clinicians. Lalingkar et al. (2020) incorporated MARS scale to measure the attention span of learning disabled adolescents in the age group of 12 to 16 years. The scale is compatible for children in the age group of 11 years too (Jacob et al., 2021). This test is scored based on a 5 point Likert scale with minimum score being 22 and maximum score being 110. The reliability of the scale is 0.64 and the Cronbach alpha score is 0.69. The scale is strongly correlated to assess attention (eg. Digit span test) proving its validity for measuring attention.

### **Youth Disability Screener (YDS) (Annexure X)**

Youth Disability Screener by the Seattle Quality of Life Group, is based on the assumption that disability not just includes health factors but also the level of functioning, activity and participation of the youth. This implies a broader perspective that includes environmental and personal factors. The YDS is a self-reported, 4 item screener with “Yes” or “No” responses. This can be administered for learning disabled adolescents. This screener has identified 62% with Attention Deficit Hyperactivity Disorder (ADHD) and 19% of adolescents with emotional disability (Topolski et al., 2002). The reliability >0.70 was computed using intraclass correlation and the content validity was computed using the adolescents themselves define the content of items.

## **INSTITUTIONAL HUMAN ETHICS COMMITTEE**

The study has been sanctioned the Institutional Human Ethics Committee approval to proceed with the study (No. IHEC/22-23/PSY-26) entitled, “Efficacy of Expressive Arts Therapy and Brain Gym Exercises in Enhancing Academic Achievement among Learning Disabled Adolescents” on 05.01.2023.

## **INTERVENTION PHASE**

### **Expressive Arts Therapy and Brain Gym**

Techniques like painting, movement, dance, music and writing are involved in Expressive Arts Therapy and Brain Gym through which the participant’s responses, reactions and feelings are expressed through picture, movements, letters and sounds. The therapy aims to enjoy the process of living in the present. Through this Expressive Arts Therapy, children with ADHD, Developmental Disabilities, Stress, Anxiety and Depression

gains support towards a change. Expressive Arts Therapy and Brain Gym also helps in improving social skills (Cherry, 2021). In the current study painting, writing, music and brain gym exercises (movement) were used to express emotions and feelings. Participants in experimental group were initially administered the Expressive Arts Therapy and Brain Gym for a period of 8 weeks (20 sessions). The package used in this study towards Expressive Arts Therapy was developed by Sivewright (2021). The description of the therapy is given below.

The participants in the experimental group (N=35) were asked to draw and colour based on the activities listed below. While they were drawing and colouring, music was played at the background (Music by Soothing Relaxation) (Soothing Relaxation, 2019) for an hour. And for movement, Brain Gym activities were administered for 10 minutes. The therapy continued for 20 sessions with 20 drawing activities and 12 brain gym activities.

### **Activity 1: Introduction to Expressive Art Therapy**

#### **Instructions**

There are 8 kinds of emotions namely anger, fear, sadness, disgust, surprise, anticipation, trust and joy. Every emotion has an essential component which are classified as subjective component, physiological component and expressive component.

Let us draw an emotion. How do we draw an emotion? For example: Fear.

#### **Probing Question**

Draw how do you look when you are afraid. Draw how others look when they are afraid. Are you afraid of some animals, food, people or anything – draw it out. When you are drawing, do you feel the fear? Do you feel the fear fading away or increasing? Do you like to continue drawing the fear? Is there any bodily process like palpitation, sweating that is bothering you while drawing?

#### **Activity 1 (a): Meditative Painting**

Instructions: Now stay calm and still. Try to reflect what you have drawn. Locate to the bodily part from where you feel tension and palpitation.

#### **Probing Question**


Do you feel relaxed when you focused on the body part that caused tension? Do you feel calm? Do you feel like you can overcome the fear?

#### **Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

### Activity 2: Calming the Nerves

**Instructions:** Create a scenery (topic- mountain) using water colour with music played.


**Probing Questions:** Do you feel calm? Do you feel tensed? Do you think the colours calm you down? Is there any particular colour that calms you? Is there any particular colour that stresses you? What happens when you avoid the colour you dislike? Are you free from your feelings? Are you relaxed? Do you like any specific colour? Is that colour in the scenery?

#### Expression Sheet

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

### Activity 3: Walking through the Valley of Stress

**Instructions:** Create an image of a valley with a mountain top. Think about a lower point in life (like getting low marks, your mother scolding you, your teacher not looking at you, you are looked down at everybody as different).

**Probing Questions:** How do you feel when someone looks at you with disgust? How do you feel when your parents scold you? How do you feel when your teacher doesn't look at you?

**Activity 3(a):** Create two mountain tops. Think of 2 high points in your life (like your taken to beach, you get your favourite food – chocolate, you get your best marks in exam, your teacher smiles at you, your mother hugs you)

**Probing Questions:** How do you feel when you are taken to beach, park? How do you feel when you get your favourite food? How do you feel when you get your best marks in exam? How do you feel when your teacher smiles at you? How do you feel when your mother hugs you?


**Solution:** Now, draw a bridge connecting the peaks of the mountain between the two high points or from low point to high point.

#### Expression Sheet

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

### Activity 4: Show Case Painting 1

**Instructions:** Show kindness by drawing the act of taking trash from ground and putting in the dustbin


**Probing Questions:** How do you feel when you care for Mother Earth? Do you feel you have done the right thing? How do you feel when others throw trash on the ground? Do you get angry or sad? When you draw this picture do you feel happy? Do you think you will share this act of kindness to your friends and family?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 5:** Show Case Painting 2

**Instructions:** Show kindness by drawing the act of providing change when someone asks


**Probing Questions:** How do you feel when someone asks you for help? Do you think we can offer help to a person when they are in need? When you provide change, do you feel happy? When you provide change, do you feel cheated? When you draw the picture, do you feel calm? When you draw the picture do you feel tensed?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 6:** Show Case Painting 3

**Instructions:** Show kindness by donating clothes to charity


**Probing Questions:** Do you feel happy donating clothes to charity? Do you think charity is good? Do you think poor people are made happy through charity? Do you think poor people also need new clothes and not old clothes? Do you feel sad? Do you think drawing the picture makes you happy? Are you calm when you draw the picture?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 7:** Show Case Painting 4

**Instructions:** Show kindness by cleaning the house of an elderly person


**Probing Questions:** Do you feel happy to help an old person? Do you think elderly people need help? Do you think there should be no old age home? Do you think elderly people need care and love from home? Do you have grandparents? Do you help them? Do you think they live a happy life? Do you feel happy for them? Do you feel sad for them? After drawing, do you feel calm? Do you feel sad?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 8:** Time line Story

**Instructions:** Draw a time for the following story on smartphones.

History of Smartphone - IBM company first created the smartphones in the year 1992. In 1994, the first smart phone called as Simon Personal Communicator (SPC) was sold in market. SPC had touch screen and it was able to send and receive messages. In 1997, the mobile game “Candy Crush” was introduced. In 2001, the first smartphone with internet connection was introduced. In 2007, apple iPhone was introduced and it was a huge hit in the market. Now in 2022, the entire world is in our hand, thanks to Android smartphones.


**Probing Questions:** How do you feel when you listened to this story? Do you feel excited? Do you feel happy to know something new? Were you able to get the timeline? Were you able to understand the story? Do you think smartphones are good? Do you think smartphones should not be there? Do you think smartphones have reduced talking among people? After drawing this timeline, do you feel calm? After drawing this timeline, do you feel tensed?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 9:** Mind map

**Instructions:** Draw a Mind map for the following story

History of Smartphone - IBM company first created the smartphones in the year 1992. In 1994, the first smart phone called as Simon Personal Communicator (SPC) was sold in market. SPC had touchscreen and it was able to send and receive messages. In 1997, the mobile game “Candy Crush” was introduced. In 2001, the first smartphone with internet connection was introduced. In 2007,

apple iPhone was introduced and it was a huge hit in the market. Now in 2022, the entire world is in our hand, thanks to Android smartphones.


**Probing Questions:** How do you feel when you listened to this story? Do you feel excited? Do you feel happy to know something new? Were you able to get answers and draw the mind map? Were you able to understand the story? Do you think smartphones are good? Do you think smartphones should not be there? Do you think smartphones have reduced talking among people? After drawing this mind map, do you feel calm? After drawing this mind map, do you feel tensed?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 10: Doodling**

**Instructions:** Draw anything without lifting the pencil. Include as many loops as you can. Try to give it a shape like a face or a thing similar to tree, table, chair. Draw anything like a monster.

**Probing Questions:** Did you have fun when you drew? Did you think about the figure that you were drawing? Did you plan what to be drawn? Or did you randomly draw the picture? Did you feel bored? Did you feel that these lines mean nothing? Did you feel calm by drawing meaningless lines? Did you feel tensed by drawing meaningless lines?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 11: The Wrong Hand**

**Instructions:** Draw anything in this room using your non dominant hand.


**Probing Questions:** Did you have fun when you drew? Did you think about the figure that you were drawing? Did you plan what to be drawn? Did you feel that the drawing is a mess? Did you feel that the drawing is a wonder? Did you think that you could draw beautifully with your non dominant hand? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

### Expression Sheet

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 12:** Drawing without looking! – Blind Contour Technique

**Instructions:** Draw anything in the room, without looking!


**Probing Questions:** Did you have fun when you drew? Did you think about the figure that you were drawing? Did you plan what to be drawn? Did you feel that the drawing is a mess? Did you feel that the drawing is a wonder? Did you think that you could draw beautifully with your eyes closed? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

### Expression Sheet

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 13:** Draw the Face 1 – Self-Reflection

**Instructions:** Imagine how you would be like when you are arguing and draw the same.


**Probing Questions:** Did you think of the situation when you argue? Did you feel angry? Did you feel sad? Do you think the other person is wrong every time you argue? Do you think people don't understand you? Did you picture your face when you argue? Do you think it is fun to imagine your face? Did you feel clam when you drew the picture? Did you feel tensed when you drew the picture?

### Expression Sheet

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 14:** Draw the Face 2 – Basic 6 Emotions

**Instructions:** Imagine how you feel when another person sneezes without wearing a mask.

**Probing Questions:** Did you feel disgusting when the opposite person sneezed? Did you feel angry when the opposite person sneezed? Did you think you must tell the person to wear a mask? Did your


face you drew shows anger? Did your face you drew shows disgust? Do you think people are careless? Do you think you want to change the world? Do you think changing the world is possible? Do you think it is right to wear a mask when someone is healthy? Do you think it is right to wear a mask when someone is sick? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 15:** Draw Yourself! – Transverse picture

**Instructions:** Draw yourself inside a box. Around the box draw as many things as possible that makes you tensed, angry, worried, irritated, sad and disgust.

**Probing Questions:** Did you feel comfortable to draw those things that created tension for you? When you drew yourself inside the box, how did you feel? Do you think you are surrounded by stressors that bothers you? Do you think you can fight these stressors? Do you have a plan to fight these stressors? Do you think you will be able to get out of the box? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

**Activity 15(a):** Draw thought bubbles!

**Instructions:** Draw as many dialogues as possible using thought bubbles.


**Probing Questions:** Were you able to draw thought bubbles and write inside them? Do you think the thought bubbles helps to fight the stressors? Do you think the thought bubbles will make you come out of the box? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 16:** Altered Images!

**Instructions:** Take some photos from the magazines or newspapers and alter the photo that you have chosen. For example: drawing a ‘bindi’ to a man, drawing moustache to a woman, drawing

water in a barren land etc.


**Probing Questions:** Did you have fun drawing the picture? Do you think when we alter the picture there is some meaning in it? Do you think the picture shows the future? Do you think the picture shows the past? Do you think you can alter your picture? If you have to alter your picture what will you do? Did you feel calm when you drew the picture? Did you feel tensed when you drew the picture?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 17: Collaboration**

**Instructions:** Split the students into groups A, B, C. All A's, B's and C's together. Each group does a collaborative painting. After then, it will be discussed as a presentation.

**Probing Questions:** In the presentation, the group has to explain what does it show? Who decided what? Did you make any changes? What were your thoughts while making? Did you argue over anything? Did you feel calm when you participated in the group activity? Did you feel tensed when you participated in the group activity?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 18: Thoughts!**

**Instructions:** Take some pages from a magazine and tear into small pieces. Take the pieces and make a collage out of it and stick them.

**Probing Questions:** Did you enjoy tearing the papers into pieces? Were you able to plan any shape or figure that you were going to make? Did you think that the irregular piece will add beauty to your collage? Did you think that the irregular piece will disturb your plan? Did you feel calm when you tore the papers? Did you feel tensed when you tore the papers?

**Activity 18 (a): Draw bubble to the collage**

**Instructions:** Create a scene or stick a face to the above collage. Draw thought bubbles to know what is the picture?


**Probing Questions:** Were you able to draw thought bubbles? Were you able to create a scene for the collage shape? Did you have fun creating the picture? Did you feel calm when you created the picture? Did you feel tensed when you created the picture?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 19:** Trace your finger!

**Instructions:** Split the students into 5 groups. Each student will trace their dominant hand. After tracing the hand, they will pass it to the next person. That person will write one positive quality about the owner of the sheet. Similarly, every student in the group will write a positive quality about the person. So there will be 4 positive quality written in the fingers and finally the owner of the picture will write a positive quality about himself/herself.

**Probing Questions:** Did you enjoy tracing the fingers? Did you feel happy when others were sharing good things about you? Did you feel that your friends know more about you? Did you feel calm when you were doing this activity? Did you feel tensed when you were doing this activity?

**Activity 19 (a):** Trace your finger II

**Instructions:** Split the students into 5 groups. Each student will trace their non dominant hand. After tracing the hand, they will pass it to the next person. That person will write one negative quality about the owner of the sheet. Similarly, every student in the group will write a negative quality about the person. So there will be 4 negative qualities written in the fingers and finally the owner of the picture will write a negative quality about himself/herself.


**Probing Questions:** Did you feel comfortable when others were sharing bad about you? Do you think you could change these bad qualities? Did you get angry when others were sharing bad qualities about you? Did you get irritated when others were sharing bad qualities about you? Did you get worries when others were sharing bad qualities about you? When you wrote a bad quality about you, did you feel shameful? Do you think you will be better if you change it? Did you feel calm when you were doing this activity? Did you feel tensed when you were doing this activity?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Activity 20: Draw Your Brain!**

**Instructions:** Draw what is inside your brain. Draw what is happening inside your brain. Your thoughts, feelings or nothing sometimes. If you could draw your emotions, how will you draw.


**Probing Questions:** How have you shown activity in your brain? How would you describe the activity – Wrong? Right? Calm? Tensed? Anger? Disgust? Joy? Fear? Surprise? Sad? Is your mind, body and feelings are in harmony? Did you feel calm when you took this activity? Did you feel tensed when you took this activity?

**Expression Sheet**

How do rate yourself after doing this activity?

**Subjective Component:**  Happy / Sad

**Physiological Component:**  Healthy / Unhealthy

**Expressive Component:**  Good / Bad

**Brain Gym – List of Activities**

Brain Gym includes series of physical activities that stimulate the nerve cells in the brain and it focuses to connect body and mind. This stimulation activates the cognitive functioning and improves better thinking, planning and other brain functions (Marpaung et al., 2017). The Brain Gym exercises are administered rhythmically with a time bound task. These exercises are based on the assumption that motor activities will strengthen the brain muscles and promotes neural connections between left and right hemisphere (Jalilinasab et al., 2021).

**Activity 1: Cross- Crawl**



Figure 3: Cross- Crawl. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 13.

In this right arm touches the left knee and vice-versa. This helps to strengthen brain hemispheres and improve in learning.

**Activity 2: Lazy 8**



Figure 4: Lazy 8. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 14.

The activity involves drawing 8 in the air with right hand and left hand for three times. Then, with both hands in clockwise and anti clockwise manner. This activity improves reading.

**Activity 3: The Elephant**



Figure 5: The Elephant. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 17.

In this activity, the knees are bent, the head is glued to the left shoulders, point your left hand across the room and make an 8 in air. Continue with right hand and right shoulders too. Repeat for three times in clock wise and three times in anti clockwise. This improves spelling.

**Activity 4: Neck Rolls**



Figure 6: Neck Rolls. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 18.

This activity includes breathing deeply and rotating the neck in circular action from and to right side shoulders in clockwise manner. Rotate the neck in anticlockwise manner by breathing deeply and exhaling gradually. This activity improves listening skills.

**Activity 5: The Rocker**



Figure 7: The Rocker. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 20

In this activity, the sitting posture with the hands behind the back resting on the floor is maintained. And this is followed by placing feet on the floor with knees raised. Once this posture is attained, the rocking of the whole body continues with back and forth movement.

**Activity 6: Belly Breathing**



Figure 8: Belly Breathing. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 21.

The hands are placed on the abdomen and exhale slowly to blow out the air. Then inhale slowly to feel the abdomen swell like a balloon. While this is done, the hands rise while inhaling and fall while exhaling.

**Activity 7: The Owl**



Figure 9: The Owl. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 26.

In this activity, the following instructions are followed. “Grasp the shoulder and squeeze the muscles firmly. Turn your head to look back over your shoulder. Breathe deeply and pull your shoulders back. Now look over the other shoulder, opening the shoulders again. Drop your chin to your chest and breathe deeply, letting the muscles relax. Repeat with hand squeezing the opposite shoulder”.

**Activity 8: Arm Activation**



Figure 10: Arm Activation. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 27.

In this activity, the arm is pushed against the other hand in four directions (front, back, in and away) by practicing breathing in and out. This activity helps in handwriting.

**Activity 9: Foot flex**



Figure 11: Foot flex. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 28.

In this activity, the feet are flexed by grasping the tender spots in the ankle, calf and behind the knee slowly. This helps in improving the memory and helps in responding to questions.

**Activity 10: Calf Pump**



Figure 12: Calf Pump. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 29.

The following instructions are followed in this activity. “As you lean forward and

exhale, press the back heel gently to the ground. As you release, lift your heel up and take a deep breath. Repeat three times on each side. The more you bend the forward knee, the more lengthening you feel in the back of the calf’.

**Activity 11: The Grounder**



Figure 13: The Grounder. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 31.

The following instructions are given in this activity. “Start with your legs comfortably apart. Point your right foot towards the right. Keep the left foot pointed straight ahead. Now bend the right knee as you exhale and, then, inhale as you straighten the right leg. Keep your hips tucked under. This strengthens the hip muscles (you feel it in the straight-leg side) and helps stabilize the back. Repeat three times, then repeat on the left side”.

**Activity 12: Energy Yawn**



Figure 14: Energy Yawn. Source: Dennison, P. E and Dennison, G. E. (1986). Brain Gym: Simple Activities for Whole Brain Learning. Edu-Kinesthetics Inc. Pg. 38.

The following instructions are given in this activity. “Pretend to yawn. Put your fingertips against any tight spots you feel on your jaws. Make a deep, relaxed, yawning sound, gently stroking away the tension”.

**Conceptual Framework**

The current study includes cognitive measures and affective measures. The cognitive measures include the executive functions such as attention, working memory and the affective measures include the emotional intelligence and social competence. Feraco et al. (2023) emphasized the significance of cognitive aspects and emotional aspects of self-regulated learning in relation with academic achievement and life satisfaction. Based on the above information, the following framework is designed in the current study.

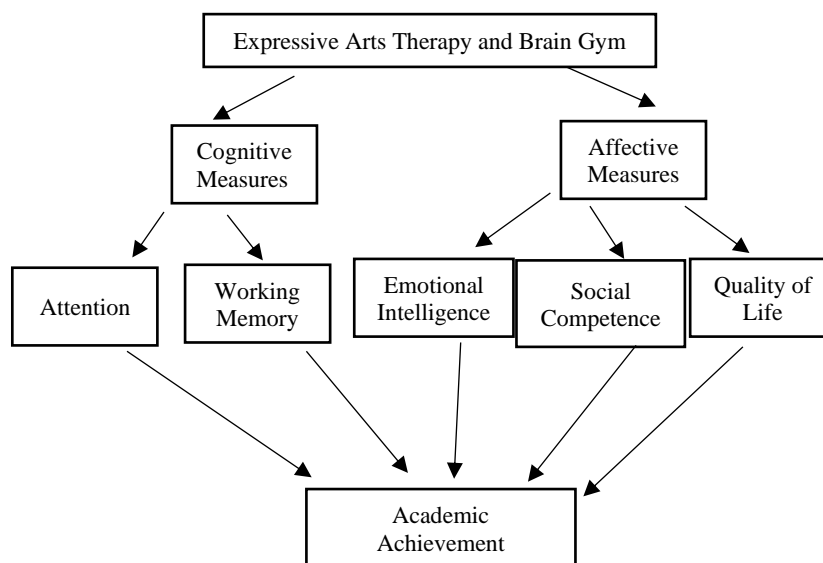


Figure 15: Conceptual Framework of the current study on Expressive Arts Therapy and Brain Gym

### Need for the Study and the Intervention

6 P's of change in a child with learning disability

- Progress
- Passion
- Purpose
- Persistence
- Pragmatism
- Perspective

Progress, Purpose, Persistence and Pragmatism are studied by measuring the determinants of academic achievements such as scores of attention, working memory and exam tests before, after and follow-up phases of intervention. Passion and Perspective are measured using emotional intelligence and social competence scales. These contribute to the cognitive measures and affective measures of academic achievement. Hence, the study focuses on the “progress in the growth of the children with learning disability by promoting passion in the children to learn with a purpose and persistence that defines the perspective

of growth to lead a pragmatic life” and thus catering to the sustainable goals of the UN stating that “development that meets the needs of the present without compromising the ability of the future generations to meet their own needs”.

### **Significance of NIOS Curriculum in the Study**

National Institute of Open Schooling (NIOS) provides special curriculum requirements of people with special needs and school drop outs ((*National Institute of Open Schooling (NIOS)*, 2021). **For the study, the two selected schools**, Saraswathi Kendra Learning Centre for Children, Alwarpet, Chennai and Wisdomms Special School and Learning Centre, Anna Nagar, Chennai caters to the NIOS curriculum to facilitate inclusive education.

### **Analysis of Data**

Statistical Package for Social Science (SPSS), version 25 was used to calculate descriptive and inferential statistics such as mean, standard deviation, One Way ANOVA, coefficient of correlation and Repeated Measures ANOVA and Post-hoc comparison.