CHAPTER V
DATA ANALYSIS AND INTERPRETATION

5.1 INTRODUCTION

This chapter presents the analysis and interpretation of the findings of the research concerned with the mind-body management education on self-development. According to Best & Kahn (2006)\(^1\), analysis and interpretation of findings is the most important part of any research since it represents the investigator’s contribution to the advancement of knowledge.

A multimethod methodology was adopted during the study. This chapter describes in detail the entire data analysis and states the result of the study. The analysis and interpretation of data analyzed is presented in this chapter phase-wise, objective-wise and hypothesis-wise.

5.2 DATA ANALYSIS OF PHASE I: LITERATURE ANALYSIS

• **Objective 1**- To analyze literature for interpretation of body-based programs and their effects on the body and the mind.

• **Objective 2**- To identify appropriate components for development of mind body management education MBME program.

The data, as presented in this chapter, have been arranged in tabular and graphical forms and the results were properly discussed “with reference to” and “in contrast with” past and recent references, and the product development/ experimental study as well as conclusion, suggestions, recommendations have been made accordingly.

The “Checklist” was used as a major tool in the literature analysis. The data collected on this checklist have been interpreted. However, the item-wise interpretation has been presented below.

5.3 Analysis of Standard Literature

The ancient as well as modern literature, which had a scientific basis, wider acceptability and popularity, were selected for review as follows:

• **For Mind-Body Issue**: review of historical perspective of the mind-body, the related health issues, philosophy and application of mind-body programs, and benefits of mind-body interventions.
• **For Science of Education**: review of educational remedies, the science of learning, need for new approaches to mind-body intervention.

• **For Managing Self-Development**: review of modern society’s need for successful mind-body management; self-development theory; self-development program and the particular importance of self-development element; value of self-development reflected in the selection of appropriate components from management theory for self-development.


The ancient as well as modern literature as reviewed systematically have revealed the major dimensions of Mind-Body Issue, Science of Education, and Managing Self-Development as follows:

5.4.1 Dimensions of Mind-Body Issue

The study was conducted in response to the widespread understanding that modern society had become increasingly mental and decreasingly physical, with significant ill effects (Biddle, Fox, & Boutcher, 2000). The context of the study is to examine the possibility that these ill effects can be mitigated by a bodily intervention – which would not only address the bodily issues involved but would also contribute to mental well-being.

According to the World Health Organization, “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Health implies a sufficient reserve of physical strength, ability and endurance and mental equilibrium to meet the demands of life.

• Historical perspectives of the mind-body:

  The change from our hunter-gatherer past to our present lifestyle (Redfield, 1953) has caused a dramatic change from a physical lifestyle to a mental one.

• Causes health issues:

  This change has had some dramatic negative effects on our physical and mental health (World Health Organization, 2005) (Wallace, Kohatsu, & Last, 2007).

  Biddle, Fox, & Boutcher (2000) report, modern society had become increasingly mental and decreasingly physical, with significant ill effects.
Today’s world is already complicated and stressful (Cummings & VandenBos, 1981), made more so by ever faster rates of change. It is estimated that 60-90 percent of visits to health care professionals are for stress-related disorders. (Elite, 1986). The physical problems associated with this are aggravated by an increasingly sedentary society that doesn’t have enough exercise.

- Philosophy and application of mind-body programs:

  A wide range of more traditional body-based interventions would also see their approach as integrating the body-mind: Yoga, Martial Arts, Tai-Chi, Qigong, many of which are still practiced today.

  There have been many studies of mind-body interventions that show clear improvements in bodily flexibility (De Vries, 1962) (Bal & Kaur, 2009) (Cowen & Adams 2005), and balance (Tsang & Hui-Chan, 2004) (Chen, & Sherman 2002), and others which show improvements in both flexibility and balance (Taylor-Piliae et al., 2006) (Hong, Li & Robinson, 2000).

- Benefits of mind-body interventions:

  Mind-body interventions have enormous potential to benefit participants, for both the body and the mind. The benefits extend beyond the body to the mind.

  Modern science (Roza, 2006) is now becoming aware that our internal lives are also very complex. This inner complexity involves our bodies and our minds, and there is an intimate interrelationship between the two (Diamond, 2007) (Wilfrid, 2008).

  One study (Wolsko et al., 2004) found nearly 20% of US adults surveyed “used at least 1 mind-body therapy” in the previous year, with about 20% of these “involving visits to a mind–body professional. Meditation, imagery, and yoga were the most commonly used techniques.” These services were used for a “full array of medical conditions” such as chronic pain, insomnia, conditions for which consensus panels have concluded that mind–body therapies are effective.” They were also used for “those with heart disease, headaches, back or neck pain, and cancer, conditions for which there is strong research support.”

  This study focuses on an intervention for “healthy people” rather than sick people, and explores the possibility of these healthy people becoming even more healthy.

**Benefits of Body to Mind Interventions**

U.S. National Institute for Health is clear in their advice to older citizens: They conclude that “Regular physical activity and exercise are important to the physical and
mental health of almost everyone, including older adults. Staying physically active and exercising regularly can produce long-term health benefits and even improve health for some older people who already have diseases and disabilities.”

They quote the U.S. Surgeon General’s Report on Physical Activity and Health, which concludes, “Inactive people are nearly twice as likely to develop heart disease as those who are more active. Lack of physical activity also can lead to more visits to the doctor, more hospitalizations, and more use of medicines for a variety of illnesses.” The confirm that exercise “is an effective treatment for many chronic conditions. For example, studies show that people with arthritis, heart disease, or diabetes benefit from regular exercise. Exercise also helps people with high blood pressure, balance problems, or difficulty walking.” In addition, they add that “Regular, moderate physical activity can help manage stress and improve your mood. And, being active on a regular basis may help reduce feelings of depression. Studies also suggest that exercise can improve or maintain some aspects of cognitive function, such as your ability to shift quickly between tasks, plan an activity, and ignore irrelevant information.”

The Surgeon General’s report puts it succinctly: “Regular physical activity greatly reduces the risk of dying from coronary heart disease, the leading case of death in the United States. Physical activity also reduces the risk of developing diabetes, hypertension and colon cancer, enhance mental health, fosters healthy muscles, bones and joints; and helps maintain function and independence in older adults.”

The report appeals to the reader: “I believe we can team up to create a new physical activity movement in this country. In doing so, we will save precious resources, precious futures, and precious lives. The time for action—and activity—is now.”

As our focus in on education, it is important to note the review by Janssen and LeBlanc (2010). They identified 11,088 papers on the health benefits of physical activity and fitness in school-aged children and youth after screening for eligibility, and then “abstracted data for 113 outcomes from 86 eligible papers.” They concluded, “Physical activity was associated with numerous health benefits. The dose-response relations observed in observational studies indicate that the more physical activity, the greater the health benefit.”

**Benefits of Mind to Body Interventions**

The most important and most thoroughly researched mind to body intervention is meditation, which is of particular interest in this study as “awareness” is also included as one of the main components of the study.
In addition to the studies mentioned above on the benefits of meditation and awareness (Baer, 2003)\textsuperscript{20} (Jacobs, 2004)\textsuperscript{21} (Donovan and Taylor 1999)\textsuperscript{22}, there is an increasing volume of valuable new data available.

Several studies have shown that “prolonged stress exposure leads to increases in measures of amygdala structure in rodents (Vyas et al., 2002)\textsuperscript{23} (Mitra et al., 2005)\textsuperscript{24}. Holzel, et al., (2010)\textsuperscript{25} have shown that participants in a mindfulness program showed that “the more participants’ stress levels decreased, the greater the decrease of gray matter density in the right amygdala.”

5.4.2 Dimensions of Science of Education

For Science of Education: reviewed of educational remedies, science of learning, need for new approaches of mind-body intervention.

The basis of this new approach can now be grounded in modern scientific research (Ratey, 2001)\textsuperscript{26} (Pert, 1997)\textsuperscript{27}, which is creating a new agreement within the scientific community that what effects the mind effects the body and vice versa; and that the brain is continuously adapting to the environment (Michel, 2012)\textsuperscript{28} (Diamond, 2000)\textsuperscript{29} (Rigoli et al., 2012)\textsuperscript{30}. Leading to the conclusion that physical education can also educate the mind (Blakemore & Frith, 2005)\textsuperscript{31}.

Educators are struggling with the challenge of giving students the kind of education that will create the flexible, innovative minds that their economy now needs, minds that can adjust easily to new situations – as opposed to the rigid, rote-learning style of today (Hulbert, 2007)\textsuperscript{32}.

The idea that education can be more than simply teaching students to be passive recipients is of fairly recent origins. Paulo Freire (1970)\textsuperscript{33} expounded the notion of the ‘practice of freedom’ in education, further expounded by Peter Mayo (1999)\textsuperscript{34} and Freire (2004)\textsuperscript{35}.

A less political and more personal approach to self-development has been articulated by Magolda (2004)\textsuperscript{36}. A groundbreaking longitudinal study on self-development in education, including annual interviews of 101 first-year students, which continued often into their early thirties, provides the author’s appreciation of self-development, or “self-authorship” as she describes it. She notes, “Survival in the 21st Century requires flexibility, adaptability... the ability to cope with rapid change, ambiguity, diversity and complexity – in their work, personal lives, and communities— the need self authorship.”
5.4.3 Dimensions of Managing Self-Development

The program was based on the proposition articulated by the business management community that the greatest challenge to modern people is the ability to be flexible and adjust quickly and easily to a rapidly changing world, and to remain balanced during the inevitable challenges we all face today. In particular we included the insights of Senge (2006)\textsuperscript{37} who emphasizes the importance of self-development in this process follow:

- To respond flexibly to ever changing situations
- To respond in an easy relaxed fashion to all the varied kinds of people that form part of any modern, management environment in today’s globalized market.
- To be totally involved in any activity without tension.
- To support innovation and creativity, which can only happen in a relaxed, stress-free atmosphere.

This new situation provokes the need for a new response to these problems: a radical approach to managing the mind and body and its relationship to an ever more complex world (Rose, 2006)\textsuperscript{38}.

In business the demands for people to change continue at all levels.

As our lives have become ever more complex, the difficulty of dealing with that complexity has created a universal need for “management” (Drucker, 1994)\textsuperscript{39} (Fairtlough, 2005)\textsuperscript{40}. In fact in the world around us the role of management has become a huge growth industry of its own (Swanson et al., 2001)\textsuperscript{41}.

There is clearly a potential need for a simple, effective body movement program that can remove stress, can satisfy the requirements for energy expenditure, and can help the mind to be more flexible and open to change, as part of an ongoing process of self-development.

The value of “self-development” has also been identified in recent years in child psychology (Shweder et al., 1998)\textsuperscript{42}, while Confessore and Kops (2004)\textsuperscript{43} identify the importance of “self-directed learning.”

These developments now form an important developing area of research in the field of education (Creamer et al., 2010)\textsuperscript{44} (Hirt, 2009)\textsuperscript{45} and have strongly influenced the direction of this study.
5.5 Findings on Checklist: Evaluation of New Mind-Body Intervention

The preliminary form of the checklist to assess the status of mind-body issue, science of education, and Managing self-development had 12 items respectively. Findings from 5 items; Meaning/ definition, Dimension / Factors, Role of mind-body Intervention improving, Importance of mind-body intervention, and Literature suggested mind-body intervention are in following table 5.1.

| Table 5.1 |
| Findings on Checklist |
| 1. Meaning/ definition of- |
| Mind-body issue of – |
| Science of Education of – |
| Managing self-development of – |
| A Historical Perspective of the Mind and Body |
| -The Theory of Mind and Body – Past and Present |
| -Human Evolution: From the Physical to the Mental |
| The Implication for Physical Health |
| The Implication for Mental Health |
| The Implication for the Way We Live Now |
| The Implication for Society in General |
| The Implication for Education and Self-Development |
| 2. Dimension / Factors of- |
| Mind-body issue of – |
| Science of Education of – |
| Managing self-development of – |
| Self Development in Education |
| Mind Body Management Education (MBME) for Self Development |
| 3. Role of mind-body Intervention improving of- |
| Mind-body issue of – |
| Science of Education of – |
| Managing self-development of – |
| Benefits of Mind-Body Interventions |
| Benefits of Body to Mind Interventions |
| Benefits of Mind to Body Interventions |
| 4. Importance of mind-body intervention of– |
| Mind-body issue of – |
| Science of Education of – |
| Managing self-development of – |
| Mind Body Integration |
| The Historical Review of the Philosophy and Application of Mind-Body Programs |
| 5. Literature suggested mind-body intervention for - |
| Mind-body issue of – |
| Science of Education of – |
| Managing self-development of – |
| Interdisciplinary Approach |
| 1. Movement Education – Psychomotor Considerations |
| 2. Psychological Considerations |
| 3. Management Theory |
| 4. Science of Education & Learning |
5.6 Observation and Interpretation of objective 1, 2

**Objective 1.** To analyze literature for interpretation of body-based programs and their effects on the body and the mind.

**Objective 2.** To identify appropriate components for development of mind body management education program and to measure body changes in respect of the same.

Literature Analysis and its effects on the direction of a new Mind-Body Intervention.

It was clear from the literature, particularly the evidence on physical health, for example – on obesity, diabetes and heart disease – that even the addition of almost any exercise will be beneficial to large proportions of the population.

There is ample evidence that the benefits of physical exercise can extend to include benefits to the mind as well as the body. These benefits include relaxation and wellbeing, and better “mental health” in general. Other studies are showing that these benefits may not be limited to feeling better, but include functioning better too. For example, studies showing specific cognitive and academic effects of such interventions have major implications for education. So, far from the old idea that the body was simply there to keep the mind and brain well fed, the implications from the latest research suggest actually the opposite: That the function of the brain is simply to help the body to move intelligently.

It is clear from management theory that perhaps the most critical challenge facing contemporary people is the issue of change: our own ability to change, to be able to respond intelligently to the endless changes around us. In particular this involves staying relaxed, balanced, and flexible in the midst of what can be experienced as threateningly unpredictable situations.

With this clarity from the literature analysis, it became clear that a new intervention could benefit from the many other ancient and modern interventions, and also address these new 21-century issues.

Clearly “flexibility” and “balance” are key requirements of modern people. In today’s fast moving world, balance means staying relaxed in the face of endless fluctuating circumstances. A body movement program began to emerge from this understanding: a program that would reflect exactly the experience of today’s life: some parts moving fast, some slow, some not moving, without any fixed pattern or “form.”
The evidence from the literature is that body movement programs can enhance what is described as “being present” being relaxed and aware. For the mind to have the best chance of absorbing these crucial lessons of flexibility and balance from the body, and incorporate them as cognitive functions and not just physical functions, these phenomena must be experienced consciously. Awareness was then a natural additional component. Breath was also a choice that emerges from the literature as breath as it is not only a doorway to relaxation, but a bridge between the mind and the body, exactly the relationship that was important for this study.

From a self-development perspectives, two aspects from the literature emerged. One is the self-esteem and confidence supports learning and the enthusiasm to learn. Also that being responsible for ones own development is itself one of the most valuable learning experiences: responsibility for one self. So, the possibility of helping participants both feel good about themselves and take responsibility for their own growth and development seemed a valuable outcome to aim for in the creation of the study. To this end, Grace and Beauty were added with a view to assessing the mental physiological outcomes of the program.

5.7 DATA ANALYSIS OF PHASE II: NEW PRODUCT DEVELOPMENT

5.7.1 Observation and Interpretation of objective 3

- **Objective 3.** To develop Mind-Body Management Education program which through managing improve the selected qualities of movement on the body and the mind.

In this present study, the researcher has developed new product MBME program, and used 4 stages of developing process: Proposed product, actual product, modified product and final product. and created new product of Mind-Body Management Education program to help participants to improve the selected qualities(Flexibility, Balance, Breathing, Awareness and Beauty/Grace) of movement on the body and the mind.

5.7.2 Creation of final product of MBME program

After the initial stage of modifications through pilot study it provided the opportunity to support the realization of the final product.

The following table 5.2 contains the final principles of Mind-Body Management Education program. And the following table 5.3 contains the final structures of MBME program and details of activities.
Table 5.2
Principles of Mind-Body Management Education program

<table>
<thead>
<tr>
<th><strong>Principles</strong></th>
<th><strong>Definition</strong></th>
<th><strong>Final MBME Program</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>How often you exercise</td>
<td>Initially, daily-then weekly.</td>
</tr>
<tr>
<td><strong>Intensity</strong></td>
<td>How hard you work during exercise</td>
<td>Increase your application daily to stimulate your body within your limits of comfort and enjoyment.</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>How long you exercise</td>
<td>30 minutes</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>The type of activity you're doing</td>
<td>5 finalized movement activities: Flexibility, Balance, Breathing, Awareness, &amp; Beauty/Grace</td>
</tr>
</tbody>
</table>

Table 5.3
Structure of Mind-Body Management Education program

<table>
<thead>
<tr>
<th>Stage</th>
<th>Components</th>
<th>Activity no. Name</th>
<th>Background Theory</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Flexibility</td>
<td>1. March &amp; Jump on the spot.</td>
<td>Dance, Movement Therapy</td>
<td>10 mins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Upper Body Twist</td>
<td>Kundalini Yoga, Artistic Yoga, Dance Therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Surya Namaskar</td>
<td>Yoga</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balance</td>
<td>1. Body Balancing</td>
<td>Dance Therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. One leg stand</td>
<td>Yoga, Pilates</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Balancing with Mudra</td>
<td>Zen Dance</td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Breathing</td>
<td>1. Yoga Breathing _ Pranayama</td>
<td>Yoga</td>
<td>10 mins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Breathing with pelvis and trunk</td>
<td>Yoga, Zen Dance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Breathing with Movement from feet to head</td>
<td>Dance Therapy, Yoga Dance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness</td>
<td>1. Body Posture</td>
<td>Dance therapy, Physiotherapy, Yoga</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Awareness Movement of different parts of the body</td>
<td>NIA, Zen Dance, Dance Therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Awareness Movement in your own style</td>
<td>Gabrielle Roth, Zen Dance, Yoga Dance</td>
<td></td>
</tr>
</tbody>
</table>
3rd Beauty/Grace

<table>
<thead>
<tr>
<th>1. Free flow of movement</th>
<th>Yoga Dance</th>
<th>10 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>_Lying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Free flow of movement</td>
<td>Zen Dance</td>
<td></td>
</tr>
<tr>
<td>_Sitting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Free flow of movement</td>
<td>NIA, Gabrielle Roth,</td>
<td></td>
</tr>
<tr>
<td>_Standing</td>
<td>Zen Dance, Yoga</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dance, Tai Chi flow</td>
<td></td>
</tr>
</tbody>
</table>

5.7.3. Description of activities of MBME program

**Flexibility**

- **Activity 1: March & Jump on the spot.**

  1. While marching on the spot raise knees up and pump arms in rhythm with the steps, keeping elbows bent.
  2. Increase speed and start jumping on the spot.
  3. Come back to marching on the spot.

  ![Fig. 5.1 : March & Jump on the spot](source: Actual photograph of the investigator)

- **Activity 2: Upper Body Twist**

  1. Stand straight, feet shoulder width apart. Lock fingers, palms facing forewords. Raise arms over the head, keeping palms facing upwards.
  2. Twist from the waist, keeping arms straight. Keep hips still.
  3. Unlock fingers and move arms slowly down the side while rotating hands from the wrists. Bring hands in front, shoulder high.
6.7. Again lock fingers, palms facing forewords. And twist form the waist, keeping arms straight. Keep hips still.

8. Unlock fingers and move arms slowly to the back while rotating hands from the wrists.

9.10. Lock fingers in the back raise arms as much as possible and twist form the waist, keeping arms straight. Keep hips still.

11. Bring arms back to comfortable standing position.

Fig. 5.2 : Upper Body Twist
Activity 3: Surya Namaskar 12 movements for stretching whole body.

1. Erect with legs together, Bring the palms together to namaskara mudra.

2. Ardha Chakrasana: While inhaling, Raise your arms above your head and stretch your body backwards. (it is OK to have your palms together in this position)

3. Pada Hastasana: While exhaling, bend your body forward. Try to touch your forehead to the knees. Keep the palms on the floor on either side of the feet. Do not bend your knees.

4. Ashva Sanchalanasana: While inhaling take the right foot back as far as possible keeping your palms on the ground. Push the buttocks forward and downward. So that the left leg is perpendicular to the ground, lower the spine, the chest up and look up.

5. Chaturanga Dandasana: While exhaling take the left leg also back, resting only on palms and toes. Keep the body straight from head to toes inclined to the ground at about 30°. Take care to keep the neck in line with the back.

6. Ashtanga Namaskar: Without shifting the positions of hands and toes, glide the body forward and hold the breath (Bahya kumbhaka) and rest the chin, chest, palms, knees and toes on the ground with elbows close to the body and raise the buttocks off the ground.

7. Urdhva Mukha Svanasana: While inhaling, raise the head and trunk making the spine concave upwards without changing the position of the hands and feet. Arch the back as far as you can until the elbows are straight. Toes maybe tucked in.

8. Parvatasana: While exhaling, raise the buttocks, chin to chest, push the head towards knees and try to touch heels to the ground without shifting the position of hands and feet.
9. Ashva Sanchalanasana: While inhaling bring the right foot in between the two hands keeping your palms on the ground. Push the buttocks forward and downward so that the right leg is perpendicular to the ground, lower the spine, the chest up and look up.

10. Pada Hastasana: While exhaling bring the left foot forward next to the right foot and reach down with your upper body to touch the forehead to the knees as in step 3.

11. Ardha Chakrasana: While inhaling, raise your arms above your head and stretch your body backwards (it is OK to have your palms together in this position).

12. Bring the palms together to namaskara mudra.

Fig. 5.3 : Surya Namaskar

Balance

- Activity 1: Body Balancing

1. Stand straight, feet shoulder width apart.

2. Move body weight to the left, bend left knee, and bring both arms to the left side.
3. Move outstretched arms over the head, and place whole body weigh on to both bent knees.

4. And repeat to the right side.

**Fig 5.4 : Body Balancing**

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1. Stand erect with legs together, hands by the side.
2. Fold right leg at the knee and place the sole near the left thigh joint.
3. Bring hands in front of chest, and the palms together to namaskara mudra.
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**Activity 2: One leg stand.**

1. Stand erect with legs together, hands by the side.
2. Fold right leg at the knee and place the sole near the left thigh joint.
3. Bring hands in front of chest, and the palms together to namaskara mudra.

**Fig 5.5: One leg stand**
• **Activity 3: Balancing with Mudra**

1. Bring hands together to form Lotus Mudra, and Raise arms over the head while lifting right leg. Keep in balance posture.

2. Repeat other side.

**Fig 5.6 : Balancing with Lotus Mudra**

Breathing

- **Activity 1: Yoga Breathing _ Pranayama**
  1. Close the right nostril with the thumb of the right hand, and inhale through left nostril.
  2. Close both nostrils and hold the breath for a while.
  3. Exhale through the left nostril.
  4. Repeat the other side.

![Fig 5.7: Yoga Breathing _ Pranayama](image)

Source: Actual photograph of the investigator

- **Activity 2: Breathing with pelvis and trunk**
  1. Sit with soles of feet touching.
  2. While exhaling, move trunk backwards, rotate pelvis forwards and touching tailbone to the floor. Arch lower back and keeping arms straight.
  3. While inhaling, sit up straight, slowly come back to sitting position.

![Fig. 5.8 : Breathing with pelvis and trunk](image)

Source: Actual photograph of the investigator
Activity 3: Movement from feet to head (with breathing)

1. Keep legs and arms parallel in front of body.
2. Move body backward. While inhaling move arms from the feet over the head.
4. Move body forward. While exhaling move arms back to the feet.

**Fig. 5.9 : Movement from feet to head**

Source: Actual photograph of the investigator

**Awareness**

- **Activity 1: Body Posture**

  Stand feet shoulder width apart and bend knees. Raise arms up shoulder high. Keeping the posture, focus awareness on the alignment of the body.

**Fig 5.10: Body Posture**
Activity 2: Awareness Movement of different parts of the body

1. Left ankle: Flex, extend, and circle your foot
2. Left knee: Bend and extend your lower leg
3. Left hip: Circle your thigh around and around
4. Left wrist: Flex, extend, and circle your hand and fingers
5. Left elbow: Bend and extend your forearm
6. Left shoulder: Circle your upper arm around and around
7. Spine: Bend to both sides and to the front and back, and twist left then right
8. Right shoulder: Circle your upper arm around and around
9. Right elbow: Bend and extend your forearm
10. Right wrist: Flex, extend, and circle your hand and fingers
11. Right hip: Circle your thigh around and around
12. Right knee: Bend and extend your lower leg
13. Right ankle: Flex, extend, and circle your foot

Fig. 5.11: Awareness Movement of different parts of the body

• Activity 3: Awareness Movement in your own style

Moving different parts of the body in your own style. Start to move from head to feet. And bring awareness into your whole body.

**Fig. 5.12. Awareness Movement in your own style**

![Image of Awareness Movement](source)

Source: Actual photograph of the investigator

**Beauty/Grace**

• Activity 1: Free flow of Movement _ Lying

Allow your body to move, spontaneously and naturally.

**Fig. 5.13 : Free flow of Movement _ Lying**

![Image of Free flow of Movement](source)
• **Activity 2: Free flow of Movement _ Sitting**
  Allow your body to move, spontaneously and naturally.

  **Fig. 5.14 : Free flow of Movement _ Sitting**

• **Activity 3: Free flow of Movement _ Standing**
  Allow your body to move, spontaneously and naturally.
Fig. 5.15 : Free flow of Movement _ Standing

Source: Actual photograph of the investigator

Experimental group during the treatment of MBME program

Fig 5.16. Flexibility Activity

Source: Actual photograph of the Subject of experimental group on MBME program

Fig. 5.17 : Balance Activity
Fig. 5.18. Breathing Activity

Fig. 5.19. Awareness Activity
5.8 DATA ANALYSIS OF PHASE III: EXPERIMENT

- **Objective 4** - To determine the effects of the MBME program on the body and the mind.

In the experimental method are designed after literature analysis and product development, to study and analyze the effects of MBME program on the body and the mind.

5.9 **Descriptive Statistics: Testing statistical properties of the variables.**

- For the variables of the study ((4 physical: flexibility, balance, breathing and awareness) + (13 psychological: Self-Evaluative, Motivational, Global self-esteem,

- SPSS software was used to test the following properties:
  2. Mean and Standard Deviation (SD)
  3. Paired Samples t-test

Before proceeding to analyze and interpret the data collected for the study and verify the hypothesis and before operating certain statistical treatment it is necessary to know whether parametric and non parametric treatment is appropriate. Therefore, an attempt has been made to know whether the distribution of variables in the study are normally distributed or not. To test normality of distributions for each variable, values of kurtosis and skewness were analysed. According to Wuensch (2005), a distribution is normal if values of kurtosis and skewness are in the range -1.0 to +1.0. In addition, charts with bell shaped curves also show normality of a distribution.

The statistical properties of variables in the study are presented in Table 5.4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
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<th>S.D.</th>
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<th>Kurtosis</th>
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Table 5.4

Statistical properties of variables in SPSS
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<td>Exp. Post</td>
<td>Cont. Pre</td>
<td>Cont. Post</td>
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<td>Cont. Post</td>
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<td>Cont. Pre</td>
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<td>55.34</td>
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<td>58.97</td>
<td>8.241</td>
<td>.047</td>
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</tbody>
</table>

**Note:** there are 17 measured variables used for this research study. From no. 1 to 6 above relate to the five selected components of MBME program and no. 7 to 17 above relate to self-development, which MBME program is designed to support.

### 5.9.1 Testing Normality of variables

The findings (Table 4.1) shows that some values of skewness and kurtosis for the variables studied are near to zero, which means the frequency distribution of the variables are nearly normal.

Most of variables are not in the -1 to 1 range. According to Dr. Ian Price (2000), “these numerical ways of determining if a distribution is significantly non-normal are very sensitive to the numbers of scores you have. With small sets of scores (say less than 50), measures of skewness and kurtosis can vary widely from negative to positive skews to perfectly normal and the parent population from which the scores have come from could still be quite normal.”

“Skewed distributions indicated violations of the assumption of normality that underlie other aspects of the analysis. However, violations of that assumption of normality are only problematic if the test is norm-referenced and being used for norm-referenced.” (Brown, 1996). This study is designed to investigate the possible changes related to MBME and is independent of the participants’ norms.
5.9.2 Histogram

The following histogram in Fig. 5.23 shows the scores of Flexibility pre- and post-test of Experimental group. The statistics on histogram of pre-test shows that the standard deviation is 9.866 with mean of 21.19 for a total N of 43. And the statistics on histogram of post-test shows that the standard deviation is 9.626 with mean of 24.63 for a total N of 43.

Fig. 5.22: A histogram of Flexibility pre- and post-test

The following histogram in Fig. 5.24 shows the scores of Self-Evaluative Salience pre- and post-test of Experimental group. The statistics on histogram of pre-test shows that the standard deviation is 0.427 with mean of 3.16 for a total N of 43. And the statistics on histogram of post-test shows that the standard deviation is 0.547 with mean of 3.26 for a total N of 43.

Fig. 5.23. A histogram of Self-Evaluative Salience pre- and post-test
5.10 t-test paired samples

The method for comparing the means of two samples is using three steps for determining the validity of a hypothesis.

1. Define the null and research hypotheses.
2. Calculate the \( t \)-statistic for the data.
3. Compare \( t_{calc} \) to the tabulated \( t \)-value, for the appropriate significance level and degree of freedom. If \( t_{calc} > t_{tab} \), we reject the null hypothesis and accept the research hypothesis. Otherwise, we accept the null hypothesis.

t-test: paired samples tests are presented in Table 5.5

Table 5.5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Mean Difference</th>
<th>( t_{calc} )</th>
<th>Finding</th>
</tr>
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</tr>
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<td>Experimental _R</td>
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<td>Experimental _L</td>
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<td>1.55263</td>
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</tbody>
</table>

**Note:**
- 14 of the variables above are “significant”, which means they are effective at the 1% and 5% level of significance.
- 2 of the variables above are “significant at the 5% level only”, which means they are not effective at the 1% level of significance.
- 1 of the variables above is “not significant”, which means it is not effective at the 1% and 5% level of significance.

**5.11 Observations and interpretations of objective 4**

**Objective 4.** To determine the effects of the MBME program on the body and the mind.

The following Table 5.6 ~ 5.22 of 17 variables are used for MBME program. 2 of variables (breathing and awareness) show increasing effect as the measured values decrease. The other 15 variables show increasing effect as the measured values increase.

**Table 5.6**

Observation and Interpretation of MBME program on Flexibility

**5.11.1. Flexibility**

**Observation** (Table 5.4.1)
- The Experimental group of Flexibility during the pre-test had the mean value (21.186), S.D. (9.8664), Sk. (0.335), and Ku. (0.630). And post-test had the mean value (24.628), S.D. (9.6258), Sk. (0.501), and Ku. (0.501).

  The Mean Difference is M.D. (3.44186), N = 43.
• The Control group of Flexibility during the pre-test had the mean value (20.711), S.D. (7.9590), Sk. (0.356), and Ku. (0.231). And post-test had the mean value (19.474), S.D. (5.6842), Sk. (0. 502), and Ku. (0. 144). The Mean Difference is M.D. (1.23684), N = 38.

**Interpretation** (Table 5.5.1)

- **Experimental Group**
  Null hypothesis 1. There are no differences in the mean values of the pre- and post- Flexibility Tests of the Experimental group.
  \[ t_{calc} 4.765 > t_{tab} 2.660 \ (p=0.01) \]
  Therefore: Null hypothesis 1 is rejected, as \( t_{calc} \) is more than \( t_{tab} \).

- **Control Group**
  Null hypothesis 1. There are differences in the mean values of the pre- and post- Flexibility Tests of the Control Group.
  \[ t_{calc} 1.607 < t_{tab} 2.704 \ (p=0.01) \]
  Therefore: Null hypothesis 1 is rejected, as \( t_{calc} \) is less than \( t_{tab} \).

**Acceptance/ Rejection of Research Hypothesis**

- There is an effect of MBME program on Flexibility significantly in an experimental group.
- There is no effect of MBME program on Flexibility in a Control group.

Therefore: the Research Hypothesis is accepted on Flexibility.

**Finding**

MBME program is effective to increase Flexibility significantly.

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**Table 5.7**

**Observation and Interpretation of MBME program on Balance**

**5.11.2. Balance**

**Observation** (Table 5.4.2)

- The Experimental group of Balance during the Right side pre-test had the mean value (3.7091), S.D. (3.32672), Sk. (2.537), and Ku. (8.578). and post-test had the mean value (5.3563), S.D. (2.58889), Sk. (0.870), and Ku. (0.065). The Mean Difference is M.D. (1.64721), N = 43.
• The Experimental group of Balance during the Left side pre-test had the mean value (3.5477), S.D. (2.44560), Sk. (1.966), and Ku. (4.738). and post-test had the mean value (5.4770), S.D. (3.88155), Sk. (1.793), and Ku. (3.496). The Mean Difference is M.D. (1.92930), N = 43.
• The Control group of Balance during the Right side pre-test had the mean value (2.2858), S.D. (1.21301), Sk. (1.789), and Ku. (6.919). And post-test had the mean value (1.9471), S.D. (0.76726), Sk. (0.377), and Ku. (0.082). The Mean Difference is M.D. (0.33868), N = 38.
• The Control group of Balance during the Left side pre-test had the mean value (2.0334), S.D. (0.86990), Sk. (0.744), and Ku. (0.446). And post-test had the mean value (1.7134), S.D. (0.70401), Sk. (0.571), and Ku. (1.187). The Mean Difference is M.D. (0.32000), N = 38.

Interpretation (Table 5.5.2)

• **Experimental Group**
  Null hypothesis 2. There are no differences in the mean values of the pre- and post-Balance Tests of the Experimental group.
  • Right side: $t_{calc} \, 3.445 > t_{tab} \, 2.660 \,(p=0.01)$
  • Left side: $t_{calc} \, 3.495 > t_{tab} \, 2.660 \,(p=0.01)$
  Therefore: Null hypothesis 2 is rejected, as $t_{calc}$ is more than $t_{tab}$.

• **Control Group**
  Null hypothesis 2. There are differences in the mean values of the pre- and post-Balance Tests of the Control Group.
  • Right side: $t_{calc} \, 1.587 < t_{tab} \, 2.704 \,(p=0.01)$
  • Left side: $t_{calc} \, 2.470 < t_{tab} \, 2.704 \,(p=0.01)$
  Therefore: Null hypothesis 2 is rejected, as $t_{calc}$ is less than $t_{tab}$.

Acceptance/ Rejection of Research Hypothesis

• There is an effect of MBME program on Balance significantly in an experimental group.
• There is no effect of MBME program on Balance in a Control group.
  Therefore: the Research Hypothesis is accepted on Balance.

Finding

MBME program is effective to increase Balance significantly.
Table 5.8
Observation and Interpretation of MBME program on Breathing

5.11.3. Breathing

Observation (Table 5.4.3)

- The Experimental group of Breathing during the pre-test had the mean value (20.47), S.D. (4.437), Sk. (0.440), and Ku. (0.397). And post-test had the mean value (16.07), S.D. (3.548), Sk. (0.124), and Ku. (0.854).
  The Mean Difference is M.D. (4.39535), N = 43.
- The Control group of Breathing during the pre-test had the mean value (14.97), S.D. (3.583), Sk. (0.748), and Ku. (1.099). And post-test had the mean value (15.03), S.D. (3.405), Sk. (0.102), and Ku. (0.286).
  The Mean Difference is M.D. (0.05263), N = 38.

Interpretation (Table 5.5.3)

- **Experimental Group**
  Null hypothesis 3. There are no differences in the mean values of the pre- and post-Breathing Tests of the Experimental group.
  \[ t_{calc} = 5.601 > t_{tab} = 2.660 \text{ (p=0.01)} \]
  Therefore: Null hypothesis 3 is rejected, as \( t_{calc} \) is more than \( t_{tab} \).

- **Control Group**
  Null hypothesis 3. There are differences in the mean values of the pre- and post-Breathing Tests of the Control Group.
  \[ t_{calc} = 0.095 < t_{tab} = 2.704 \text{ (p=0.01)} \]
  Therefore: Null hypothesis 3 is rejected, as \( t_{calc} \) is less than \( t_{tab} \).

Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Breathing significantly in an experimental group.
- There is no effect of MBME program on Breathing in a Control group.
  Therefore: the Research Hypothesis is accepted on Breathing.

Finding

MBME program is effective to decrease Breathing significantly.
### Table 5.9

**Observation and Interpretation of MBME program on Awareness**

#### 5.11.4. Awareness

**Observation** (Table 5.4.4)
- The Experimental group of Awareness during the pre-test had the mean value (0.1709), S.D. (0.02213), Sk. (0.721), and Ku. (0.013). And post-test had the mean value (0.1507), S.D. (0.03225), Sk. (0.320), and Ku. (0.471).
  - The Mean Difference is M.D. (0.02023), N = 43.
- The Control group of Awareness during the pre-test had the mean value (0.1432), S.D. (0.05084), Sk. (0.266), and Ku. (1.104). And post-test had the mean value (0.1539), S.D. (0.03908), Sk. (0.279), and Ku. (0.284).
  - The Mean Difference is M.D. (0.01079), N = 38.

**Interpretation** (Table 5.5.4)
- **Experimental Group**
  - Null hypothesis 4. There are no differences in the mean values of the pre- and post-Awareness Tests of the Experimental group.
  - \( t_{calc} \) **4.845** \( > \) **2.660** \( (p=0.01) \)
  - Therefore: Null hypothesis 4 is rejected, as \( t_{calc} \) is more than \( t_{tab} \).
- **Control Group**
  - Null hypothesis 4. There are differences in the mean values of the pre- and post-Awareness Tests of the Control Group.
  - \( t_{calc} \) **1.737** \( < \) **2.704** \( (p=0.01) \)
  - Therefore: Null hypothesis 4 is rejected, as \( t_{calc} \) is less than \( t_{tab} \).

**Acceptance/ Rejection of Research Hypothesis**
- There is an effect of MBME program on Awareness significantly in an experimental group.
- There is no effect of MBME program on Awareness in a Control group.
  - Therefore: the Research Hypothesis is accepted on Awareness.

**Finding**
- MBME program is effective to decrease Awareness significantly.
Table 5.10
Observation and Interpretation of MBME program on Beauty/Grace

1. Self-Evaluative Salience of Body Image Assessments (ASI-R)

Note: There are 2 variables measured by ASI-R (Body Image Assessments).

### 5.11.5. Beauty/Grace 1. Self-Evaluative Salience of Body Image Assessments (ASI-R)

**Observation** (Table 5.4.5)

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental</strong></td>
<td>3.1597</td>
<td>0.426840</td>
<td>0.171</td>
<td>0.632</td>
<td>3.2634</td>
<td>0.547380</td>
<td>0.013</td>
<td>1.061</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>3.2281</td>
<td>0.386957</td>
<td>0.020</td>
<td>0.583</td>
<td>2.9595</td>
<td>0.425934</td>
<td>0.539</td>
<td>0.500</td>
</tr>
</tbody>
</table>

The Mean Difference is M.D. (0.10367), N = 43.

- The Control group of Self-Evaluative Salience during the pre-test had the mean value (3.2281), S.D. (0.386957), Sk. (0.020), and Ku. (0.583). And post-test had the mean value (2.9595), S.D. (0.425934), Sk. (0.539), and Ku. (0.500).
  The Mean Difference is M.D. (0.26858), N = 38.

**Interpretation** (Table 5.5.5)

- **Experimental Group**
  Null hypothesis. There are no differences in the mean values of the pre- and post-Self-Evaluative Salience Tests of the Experimental group.
  \[ t_{calc} \, 1.426 \, < \, t_{tab} \, 2.660 \, (p=0.01) \]
  Therefore: Null hypothesis is accepted, as \( t_{calc} \) is less than \( t_{tab} \).

- **Control Group**
  Null hypothesis. There are differences in the mean values of the pre- and post-Self-Evaluative Salience Tests of the Control Group.
  \[ t_{calc} \, 3.122 \, > \, t_{tab} \, 2.704 \, (p=0.01) \]
  Therefore: Null hypothesis is accepted, as \( t_{calc} \) is more than \( t_{tab} \).

**Acceptance/ Rejection of Research Hypothesis**

- There is no effect of MBME program on Self-Evaluative Salience in an experimental group.
- There is an effect of MBME program on Self-Evaluative Salience in a Control group.
  Therefore: the Research Hypothesis is rejected on Self-Evaluative Salience.

**Finding**

MBME program is not effective to increase Self-Evaluative Salience on eauty/Grace.
Table 5.11
Observation and Interpretation of MBME program on Beauty/Grace

2. Motivational Salience of Body Image Assessments (ASI-R)

<table>
<thead>
<tr>
<th>5.11.5. Beauty/Grace- 2. Motivational Salience of Body Image Assessments (ASI-R)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation</strong> (Table 5.4.6)</td>
</tr>
<tr>
<td>The Experimental group of Motivational Salience during the pre-test had the mean value (3.4157), S.D. (0.533632), Sk. (0.103), and Ku. (0.924). And post-test had the mean value (3.5918), S.D. (0.500873), Sk. (0.264), and Ku. (0.683). The Mean Difference is M.D. (0.17619), N = 43.</td>
</tr>
<tr>
<td>The Control group of Motivational Salience during the pre-test had the mean value (3.3125), S.D. (0.548146), Sk. (0.425), and Ku. (0.263). And post-test had the mean value (3.4344), S.D. (0.653539), Sk. (0.172), and Ku. (0.506). The Mean Difference is M.D. (0.12197), N = 38.</td>
</tr>
<tr>
<td><strong>Interpretation</strong> (Table 5.5.6)</td>
</tr>
<tr>
<td>• <strong>Experimental Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are no differences in the mean values of the pre- and post- Motivational Salience Tests of the Experimental group.</td>
</tr>
<tr>
<td>$t_{calc} 2.228 &lt; t_{tab} 2.660 \ (p=0.01)$</td>
</tr>
<tr>
<td>Null hypothesis 5 is accepted, as $t_{calc}$ is less than $t_{tab}$.</td>
</tr>
<tr>
<td>$t_{calc} 2.228 &gt; t_{tab} 2.000 \ (p=0.05)$</td>
</tr>
<tr>
<td>Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$. Therefore: Null hypothesis is rejected at the 5% significance level.</td>
</tr>
<tr>
<td>• <strong>Control Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are differences in the mean values of the pre- and post- Motivational Salience Tests of the Control Group.</td>
</tr>
<tr>
<td>$t_{calc} 1.026 &lt; t_{tab} 2.704 \ (p=0.01)$</td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.</td>
</tr>
</tbody>
</table>

**Acceptance/ Rejection of Research Hypothesis**

- There is an effect of MBME program on Motivational Salience only at the 5% significance level in an experimental group.
- There is no effect of MBME program on Motivational Salience in a Control group.
Therefore: the Research Hypothesis is accepted on Motivational Salience at the 5% of significance level.

Finding
MBME program is effective to increase Motivational Salience at the 5% of significance level on Beauty/Grace.

Table 5.12
Observation and Interpretation of MBME program on Self-Development
1. Global self-esteem of MSEI

Note: There are 11 variables measured by MSEI (Multi-dimensional self esteem inventory).

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Observation</strong> (Table 5.4.7)</td>
<td>The Experimental group of Global self-esteem during the pre-test had the mean value (51.65), S.D. (8.159), Sk. (0.013), and Ku. (0.370). And post-test had the mean value (55.23), S.D. (7.128), Sk. (0.294), and Ku. (0.860). The Mean Difference is M.D. (3.58140), N = 43.</td>
</tr>
<tr>
<td></td>
<td>• The Control group of Global self-esteem during the pre-test had the mean value (50.39), S.D. (7.088), Sk. (0.221), and Ku. (0.114). And post-test had the mean value (52.42), S.D. (6.931), Sk. (0.786), and Ku. (0.045). The Mean Difference is M.D. (2.02632), N = 38.</td>
</tr>
<tr>
<td><strong>Interpretation</strong> (Table 5.5.7)</td>
<td>• <strong>Experimental Group</strong> Null hypothesis. There are no differences in the mean values of the pre- and post- Global self-esteem Tests of the Experimental group. $t_{calc} \ 3.245 &gt; t_{tab} \ 2.660 \ (p=0.01)$ Therefore: Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Control Group</strong> Null hypothesis. There are differences in the mean values of the pre- and post- Global self-esteem Tests of the Control Group. $t_{calc} \ 2.075 &lt; t_{tab} \ 2.704 \ (p=0.01)$ Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.</td>
</tr>
</tbody>
</table>
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Global self-esteem significantly in an experimental group.
- There is no effect of MBME program on Global self-esteem in a Control group.

Therefore: the Research Hypothesis is accepted on Global self-esteem.

Finding

MBME program is effective to increase Global self-esteem of MSEI significantly on Self-Development.

Table 5.13

Observation and Interpretation of MBME program on Self-Development

2. Competence of MSEI

<table>
<thead>
<tr>
<th>5.11.6. Self-Development _ 2. Competence of MSEI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation</strong> (Table 5.4.8)</td>
</tr>
<tr>
<td>The Experimental group of Competence during the pre-test had the mean value (50.53), S.D. (8.450), Sk. (0.074), and Ku. (1.060). And post-test had the mean value (53.77), S.D. (8.682), Sk. (0.402), and Ku. (0.387). The Mean Difference is M.D. (3.23256), N = 43.</td>
</tr>
<tr>
<td>The Control group of Competence during the pre-test had the mean value (49.03), S.D. (9.838), Sk. (1.099), and Ku. (1.824). And post-test had the mean value (52.92), S.D. (9.993), Sk. (0.454), and Ku. (0.473). The Mean Difference is M.D. (3.89474), N = 38.</td>
</tr>
</tbody>
</table>

**Interpretation** (Table 5.5.8)

- **Experimental Group**
  
  Null hypothesis. There are no differences in the mean values of the pre- and post- Competence Tests of the Experimental group.
  
  \[ t_{calc} \begin{array}{c} 2.704 \end{array} > t_{tab} \begin{array}{c} 2.660 \end{array} (p=0.01) \]
  
  Therefore: Null hypothesis is rejected, as \( t_{calc} \) is more than \( t_{tab} \).

- **Control Group**
  
  Null hypothesis. There are differences in the mean values of the pre- and post- Competence Tests of the Control Group.
  
  \[ t_{calc} \begin{array}{c} 2.491 \end{array} < t_{tab} \begin{array}{c} 2.704 \end{array} (p=0.01) \]
  
  Therefore: Null hypothesis is rejected, as \( t_{calc} \) is less than \( t_{tab} \).
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Competence significantly in an experimental group.
- There is no effect of MBME program on Competence in a Control group.

Therefore: the Research Hypothesis is accepted on Competence.

Finding

MBME program is effective to increase Competence of MSEI significantly on Self-Development.

Table 5.14
Observation and Interpretation of MBME program on Self-Development

3. Lovability of MSEI

5.11.6. Self-Development _ 3. Lovability of MSEI

Observation (Table 5.4.9)

The Experimental group of Lovability during the pre-test had the mean value (48.88), S.D. (7.980), Sk. (0.192), and Ku. (0.407). And post-test had the mean value (52.84), S.D. (9.396), Sk. (0.948), and Ku. (0.645).

The Mean Difference is M.D. (3.95349), N = 43.

- The Control group of Lovability during the pre-test had the mean value (46.05), S.D. (5.482), Sk. (0.093), and Ku. (0.731). And post-test had the mean value (48.37), S.D. (8.796), Sk. (1.429), and Ku. (2.983).

The Mean Difference is M.D. (2.31579), N = 38.

Interpretation (Table 5.5.9)

- **Experimental Group**
  Null hypothesis. There are no differences in the mean values of the pre- and post- Lovability Tests of the Experimental group.

  \[ t_{calc} \approx 3.797 > t_{tab} \approx 2.660 \ (p=0.01) \]

  Therefore: Null hypothesis is rejected, as \( t_{calc} \) is more than \( t_{tab} \).

- **Control Group**
  Null hypothesis. There are differences in the mean values of the pre- and post-Lovability Tests of the Control Group.

  \[ t_{calc} \approx 1.854 < t_{tab} \approx 2.704 \ (p=0.01) \]

  Therefore: Null hypothesis is rejected, as \( t_{calc} \) is less than \( t_{tab} \).
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Lovability significantly in an experimental group.
- There is no effect of MBME program on Lovability in a Control group. Therefore: the Research Hypothesis is accepted on Lovability.

Finding
MBME program is effective to increase Lovability of MSEI significantly on Self-Development.

Table 5.15
Observation and Interpretation of MBME program on Self-Development

4. Likeability of MSEI

5.11.6. Self-Development _ 4. Likeability of MSEI

Observation (Table 5.4.10)
The Experimental group of Likeability during the pre-test had the mean value (48.40), S.D. (10.953), Sk. (0.118), and Ku. (0.892). And post-test had the mean value (54.63), S.D. (10.123), Sk. (0.129), and Ku. (0.530). The Mean Difference is M.D. (6.23256), N = 43.

- The Control group of Likeability during the pre-test had the mean value (48.63), S.D. (11.787), Sk. (0.771), and Ku. (1.248). And post-test had the mean value (50.89), S.D. (11.491), Sk. (0.824), and Ku. (0.785). The Mean Difference is M.D. (2.26316), N = 38.

Interpretation (Table 5.5.10)

- **Experimental Group**
  Null hypothesis. There are no differences in the mean values of the pre- and post- Likeability Tests of the Experimental group.
  \[ t_{\text{calc}} \ 3.775 \ > \ t_{\text{tab}} \ 2.660 \ (p=0.01) \]
  Therefore: Null hypothesis is rejected, as \( t_{\text{calc}} \) is more than \( t_{\text{tab}} \).

- **Control Group**
  Null hypothesis. There are differences in the mean values of the pre- and post- Likeability Tests of the Control Group.
  \[ t_{\text{calc}} \ 1.323 \ < \ t_{\text{tab}} \ 2.704 \ (p=0.01) \]
  Therefore: Null hypothesis is rejected, as \( t_{\text{calc}} \) is less than \( t_{\text{tab}} \).
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Likeability significantly in an experimental group.
- There is no effect of MBME program on Likeability in a Control group. Therefore: the Research Hypothesis is accepted on Likeability.

Finding
MBME program is effective to increase Likeability of MSEI significantly on Self-Development.

Table 5.16
Observation and Interpretation of MBME program on Self-Development

5. Self-Control of MSEI

<table>
<thead>
<tr>
<th>Observation (Table 5.4.11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Experimental group of Self-Control during the pre-test had the mean value (50.26), S.D. (10.224), Sk. (0.076), and Ku. (0.084). And post-test had the mean value (55.58), S.D. (10.946), Sk. (0.060), and Ku. (0.570). The Mean Difference is M.D. (5.32558), N = 43.</td>
</tr>
<tr>
<td>The Control group of Self-Control during the pre-test had the mean value (49.05), S.D. (9.415), Sk. (0.782), and Ku. (1.972). And post-test had the mean value (52.05), S.D. (9.572), Sk. (1.300), and Ku. (2.500). The Mean Difference is M.D. (3.00000), N = 38.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpretation (Table 5.5.11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Experimental Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are no differences in the mean values of the pre- and post- Self-Control Tests of the Experimental group.</td>
</tr>
<tr>
<td>$t_{calc} , 3.681 &gt; t_{tab} , 2.660 , (p=0.01)$</td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$.</td>
</tr>
<tr>
<td>- <strong>Control Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are differences in the mean values of the pre- and post- Self-Control Tests of the Control Group.</td>
</tr>
<tr>
<td>$t_{calc} , 2.292 &lt; t_{tab} , 2.704 , (p=0.01)$</td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.</td>
</tr>
</tbody>
</table>
### Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Self-Control significantly in an experimental group.
- There is no effect of MBME program on Self-Control in a Control group.

Therefore: the Research Hypothesis is accepted on Self-Control.

### Finding

MBME program is effective to increase Self-Control of MSEI significantly on Self-Development.

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#### Table 5.17

Observation and Interpretation of MBME program on Self-Development

6. Personal Power of MSEI

<table>
<thead>
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<tbody>
<tr>
<td><strong>Observation</strong> (Table 5.4.12)</td>
</tr>
<tr>
<td>The Experimental group of Personal Power during the pre-test had the mean value (51.00), S.D. (6.373), Sk. (0.078), and Ku. (0.333). And post-test had the mean value (55.51), S.D. (8.760), Sk. (0.457), and Ku. (0.671). The Mean Difference is M.D. (4.51163), N = 43.</td>
</tr>
<tr>
<td>The Control group of Personal Power during the pre-test had the mean value (52.74), S.D. (8.648), Sk. (0.235), and Ku. (1.132). And post-test had the mean value (51.76), S.D. (7.160), Sk. (0.072), and Ku. (0.137). The Mean Difference is M.D. (0.97368), N = 38.</td>
</tr>
<tr>
<td><strong>Interpretation</strong> (Table 5.5.12)</td>
</tr>
<tr>
<td><strong>Experimental Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are no differences in the mean values of the pre- and post- Personal Power Tests of the Experimental group. $t_{calc} 3.735 &gt; t_{tab} 2.660 \ (p=0.01)$</td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$.</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
</tr>
<tr>
<td>Null hypothesis. There are differences in the mean values of the pre- and post- Personal Power Tests of the Control Group. $t_{calc} 0.844 &lt; t_{tab} 2.704 \ (p=0.01)$</td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.</td>
</tr>
</tbody>
</table>
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Personal Power significantly in an experimental group.
- There is no effect of MBME program on Personal Power in a Control group. Therefore: the Research Hypothesis is accepted on Personal Power.

Finding
MBME program is effective to increase Personal Power of MSEI significantly on Self-Development.

Table 5.18

Observation and Interpretation of MBME program on Self-Development

7. Moral Self-Approval of MSEI

<table>
<thead>
<tr>
<th>5.11.6. Self-Development</th>
<th>7. Moral Self-Approval of MSEI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation</strong> (Table 5.4.13)</td>
<td></td>
</tr>
<tr>
<td>The Experimental group of Moral Self-Approval during the pre-test had the mean value (49.19), S.D. (9.575), Sk. (0.034), and Ku. (0.618). And post-test had the mean value (54.28), S.D. (8.950), Sk. (0.362), and Ku. (1.371). The Mean Difference is M.D. (5.09302), N = 43.</td>
<td></td>
</tr>
<tr>
<td>The Control group of Moral Self-Approval during the pre-test had the mean value (45.89), S.D. (8.526), Sk. (0.086), and Ku. (0.177). And post-test had the mean value (46.58), S.D. (7.572), Sk. (0.361), and Ku. (0.037). The Mean Difference is M.D. (0.68421), N = 38.</td>
<td></td>
</tr>
<tr>
<td><strong>Interpretation</strong> (Table 5.5.13)</td>
<td></td>
</tr>
<tr>
<td><strong>Experimental Group</strong></td>
<td></td>
</tr>
<tr>
<td>Null hypothesis. There are no differences in the mean values of the pre- and post- Moral Self-Approval Tests of the Experimental group.</td>
<td></td>
</tr>
<tr>
<td>$t_{calc} 4.384 &gt; t_{tab} 2.660 \ (p=0.01)$</td>
<td></td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$.</td>
<td></td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
</tr>
<tr>
<td>Null hypothesis. There are differences in the mean values of the pre- and post- Moral Self-Approval Tests of the Control Group.</td>
<td></td>
</tr>
<tr>
<td>$t_{calc} 0.650 &lt; t_{tab} 2.704 \ (p=0.01)$</td>
<td></td>
</tr>
<tr>
<td>Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.</td>
<td></td>
</tr>
</tbody>
</table>
Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Moral Self-Approval significantly in an experimental group.
- There is no effect of MBME program on Moral Self-Approval in a Control group.

Therefore: the Research Hypothesis is accepted on Moral Self-Approval.

Finding

MBME program is effective to increase Moral Self-Approval of MSEI significantly on Self-Development.

Table 5.19

Observation and Interpretation of MBME program on Self-Development

8. Body Appearance


Observation (Table 5.4.14)

The Experimental group of Body Appearance during the pre-test had the mean value (58.16), S.D. (9.045), Sk. (0.611), and Ku. (0.370). And post-test had the mean value (61.00), S.D. (8.036), Sk. (0.295), and Ku. (0.280).

The Mean Difference is M.D. (2.83721), N = 43.

- The Control group of Body Appearance during the pre-test had the mean value (54.21), S.D. (7.253), Sk. (0.462), and Ku. (0.408). And post-test had the mean value (55.34), S.D. (8.095), Sk. (0.158), and Ku. (0.445).

The Mean Difference is M.D. (1.13158), N = 38.

Interpretation (Table 5.5.14)

- **Experimental Group**

  Null hypothesis. There are no differences in the mean values of the pre- and post- Body Appearance Tests of the Experimental group.

- \( t_{\text{calc}} 2.255 < t_{\text{tab}} 2.660 \ (p=0.01) \)

  Null hypothesis is accepted, as \( t_{\text{calc}} \) is less than \( t_{\text{tab}} \).

- \( t_{\text{calc}} 2.255 > t_{\text{tab}} 2.000 \ (p=0.05) \)

  Null hypothesis 14 is rejected, as \( t_{\text{calc}} \) is more than \( t_{\text{tab}} \).

  Therefore: Null hypothesis 14 is rejected at the 5% significance level.
• **Control Group**
  Null hypothesis. There are differences in the mean values of the pre- and post-
  Body Appearance Tests of the Control Group.

  \[ t_{calc} 1.021 < t_{tab} 2.704 \ (p=0.01) \]

  Therefore: Null hypothesis is rejected, as \( t_{calc} \) is less than \( t_{tab} \).

**Acceptance/ Rejection of Research Hypothesis**

- There is an effect of MBME program on Body Appearance only at the 5 %
  significance level in an experimental group.

- There is no effect of MBME program on Body Appearance in a Control group.
  Therefore: the Research Hypothesis is accepted on Body Appearance at the
  5% of significance level.

**Finding**

MBME program is effective to increase Body Appearance of MSEI on Self-
Development at the 5 % of significance level.

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**Table 5.20**

**Observation and Interpretation of MBME program on Self-Development**

9. Body Functioning of MSEI

|----------------------------------------------------------|

**Observation** (Table 5.4.15)

The Experimental group of Body Functioning during the pre-test had the mean
value (52.95), S.D. (9.079), Sk. (0.545), and Ku. (1.112). And post-test had the
mean value (57.95), S.D. (9.727), Sk. (0.024), and Ku. (0.446).

The Mean Difference is M.D. (5.00000), N = 43.

- The Control group of Body Functioning during the pre-test had the mean
  value (51.76), S.D. (9.202), Sk. (1.024), and Ku. (1.757). And post-test had the
  mean value (51.45), S.D. (8.608), Sk. (1.184), and Ku. (2.516).

  The Mean Difference is M.D. (0.31579), N = 38.

**Interpretation** (Table 5.5.15)

- **Experimental Group**
  Null hypothesis. There are no differences in the mean values of the pre- and
  post-BODY Functioning Tests of the Experimental group.

  \[ t_{calc} 4.545 > t_{tab} 2.660 \ (p=0.01) \]
Therefore: Null hypothesis is rejected, as $t_{\text{calc}}$ is more than $t_{\text{tab}}$.

- **Control Group**
  Null hypothesis. There are differences in the mean values of the pre- and post-Body Functioning Tests of the Control Group.
  
  $t_{\text{calc}} \, 0.302 \, < \, t_{\text{tab}} \, 2.704 \, (p=0.01)$

  Therefore: Null hypothesis is rejected, as $t_{\text{calc}}$ is less than $t_{\text{tab}}$.

### Acceptance/ Rejection of Research Hypothesis

- There is an effect of MBME program on Body Functioning significantly in an experimental group.
- There is no effect of MBME program on Body Functioning in a Control group.

Therefore: the Research Hypothesis is accepted on Body Functioning.

### Finding

MBME program is effective to increase Body Functioning of MSEI significantly on Self-Development.

### Table 5.21

**Observation and Interpretation of MBME program on Self-Development**

10. Identity Integration of MSEI

#### 5.11.6. Self-Development _10. Identity Integration of MSEI_

**Observation** (Table 5.4.16)

The Experimental group of Identity Integration during the pre-test had the mean value (49.49), S.D. (7.905), Sk. (0.221), and Ku. (0.229). And post-test had the mean value (57.53), S.D. (9.721), Sk. (0.215), and Ku. (0.684).

The Mean Difference is M.D. (8.04651), N = 43.

- The Control group of Identity Integration during the pre-test had the mean value (50.11), S.D. (7.728), Sk. (0.625), and Ku. (0.252). And post-test had the mean value (49.18), S.D. (7.158), Sk. (0.541), and Ku. (0.031).

  The Mean Difference is M.D. (0.92105), N = 38.

**Interpretation** (Table 5.5.16)

- **Experimental Group**
  Null hypothesis. There are no differences in the mean values of the pre- and post- Identity Integration Tests of the Experimental group.
  
  $t_{\text{calc}} \, 5.491 \, > \, t_{\text{tab}} \, 2.660 \, (p=0.01)$
Therefore: Null hypothesis is rejected, as $t_{\text{calc}}$ is more than $t_{\text{tab}}$.

- **Control Group**

  Null hypothesis. There are differences in the mean values of the pre- and post-Identity Integration Tests of the Control Group.
  
  $t_{\text{calc}}$ \(0.778\ < \ t_{\text{tab}} \ 2.704 \ (p=0.01)\)

  Therefore: Null hypothesis is rejected, as $t_{\text{calc}}$ is less than $t_{\text{tab}}$.

**Acceptance/ Rejection of Research Hypothesis**

- There is an effect of MBME program on Identity Integration significantly in an experimental group.
- There is no effect of MBME program on Identity Integration in a Control group.

Therefore: the Research Hypothesis is accepted on Identity Integration.

**Finding**

MBME program is effective to increase Identity Integration of MSEI significantly on Self-Development.

---

**Table 5.22**

Observation and Interpretation of MBME program on Self-Development

11. Defensive Self-Enhancement of MSEI

|---------------------------------------------------------------|

**Observation** (Table 5.4.17)

The Experimental group of Defensive Self-Enhancement during the pre-test had the mean value (61.56), S.D. (7.169), Sk. (0.391), and Ku. (0.839). And post-test had the mean value (64.65), S.D. (6.897), Sk. (0.827), and Ku. (0.090).

The Mean Difference is M.D. (3.09302), N = 43.

- The Control group of Defensive Self-Enhancement during the pre-test had the mean value (60.53), S.D. (8.133), Sk. (0.463), and Ku. (0.541). And post-test had the mean value (58.97), S.D. (8.241), Sk. (0.047), and Ku. (1.122).

The Mean Difference is M.D. (1.55263), N = 38.

**Interpretation** (Table 5.5.17)

- **Experimental Group**

  Null hypothesis. There are no differences in the mean values of the pre- and post Defensive Self-Enhancement Tests of the Experimental group.
Therefore: Null hypothesis is rejected, as $t_{calc}$ is more than $t_{tab}$.

- **Control Group**

  Null hypothesis. There are differences in the mean values of the pre- and post- Defensive Self-Enhancement Tests of the Control Group.

  $t_{calc} 1.723 < t_{tab} 2.704 (p=0.01)$

  Therefore: Null hypothesis is rejected, as $t_{calc}$ is less than $t_{tab}$.

**Acceptance/ Rejection of Research Hypothesis**

- There is an effect of MBME program on Defensive Self-Enhancement significantly in an experimental group.

- There is no effect of MBME program on Defensive Self-Enhancement in a Control group.

  Therefore: the Research Hypothesis is accepted on Defensive Self-Enhancement.

**Finding**

MBME program is effective to increase Defensive Self-Enhancement of MSEI significantly on Self-Development.

### 5.12 Major Findings from the results

In the following table 5.23 Major findings from the experiment related to research hypothesis have shown all five qualities (Flexibility, Balance, Breathing, Awareness and Beauty/Grace) and the Self Development are significantly affected – except one of two variables for Beauty/Grace.

**Table 5.23**

<table>
<thead>
<tr>
<th>Components</th>
<th>Variables</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Flexibility</td>
<td>Flexibility</td>
<td>Significant</td>
</tr>
<tr>
<td>2 Balance</td>
<td>Balance</td>
<td>Significant</td>
</tr>
<tr>
<td>3 Breathing</td>
<td>Breathing</td>
<td>Significant</td>
</tr>
<tr>
<td>4 Awareness</td>
<td>Awareness</td>
<td>Significant</td>
</tr>
<tr>
<td>5 Beauty/Grace</td>
<td>1. Self-Evaluative Salience</td>
<td>Not Significant</td>
</tr>
<tr>
<td></td>
<td>2. Motivational Salience</td>
<td>Significant at the 5% level.</td>
</tr>
<tr>
<td></td>
<td>2. Competence</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>3. Lovability</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Likeability</td>
<td>Significant</td>
</tr>
<tr>
<td>5.</td>
<td>Self-Control</td>
<td>Significant</td>
</tr>
<tr>
<td>6.</td>
<td>Personal Power</td>
<td>Significant</td>
</tr>
<tr>
<td>7.</td>
<td>Moral Self-Approval</td>
<td>Significant</td>
</tr>
<tr>
<td>8.</td>
<td>Body Appearance</td>
<td>Significant at the 5% level.</td>
</tr>
<tr>
<td>9.</td>
<td>Body Functioning</td>
<td>Significant</td>
</tr>
<tr>
<td>10.</td>
<td>Identity Integration</td>
<td>Significant</td>
</tr>
<tr>
<td>11.</td>
<td>Defensive Self-Enhancement</td>
<td>Significant</td>
</tr>
</tbody>
</table>

5.12.1 Acceptance/ Rejection of Research Hypothesis from Major Findings

1. MBME program is effective to increase Flexibility significantly.
   - There is an effect of MBME program on Flexibility significantly in an experimental group.
   - There is no effect of MBME program on Flexibility in a Control group.
   Therefore: the Research Hypothesis is accepted on Flexibility.

2. MBME program is effective to increase Balance significantly.
   - There is an effect of MBME program on Balance significantly in an experimental group.
   - There is no effect of MBME program on Balance in a Control group.
   Therefore: the Research Hypothesis is accepted on Balance.

3. MBME program is effective to decrease Breathing significantly.
   - There is an effect of MBME program on Breathing significantly in an experimental group.
   - There is no effect of MBME program on Breathing in a Control group.
   Therefore: the Research Hypothesis is accepted on Breathing.

4. MBME program is effective to decrease Awareness significantly.
   - There is an effect of MBME program on Awareness significantly in an experimental group.
   - There is no effect of MBME program on Awareness in a Control group.
   Therefore: the Research Hypothesis is accepted on Awareness.

5. MBME program is not effective to increase Self-Evaluative Salience on Beauty/Grace.
   - There is no effect of MBME program on Self-Evaluative Salience in an experimental group.
• There is an effect of MBME program on Self-Evaluative Salience in a Control group. Therefore: the Research Hypothesis is rejected on Self-Evaluative Salience.

5. MBME program is effective to increase Motivational Salience at the 5% of significance level on Beauty/Grace.

• There is an effect of MBME program on Motivational Salience only at the 5% significance level in an experimental group.

• There is no effect of MBME program on Motivational Salience in a Control group. Therefore: the Research Hypothesis is accepted on Motivational Salience at the 5% of significance level.

6. MBME program is effective to increase MSEI significantly on Self-Development.

• There is an effect of MBME program on MSEI significantly in an experimental group.

• There is no effect of MBME program on MSEI in a Control group. Therefore: the Research Hypothesis is accepted on Self-Development.
Reference


