

## 9. MANAGEMENT OF STUDENTS PERFORMANCE IN ENGINEERING EDUCATION : AN ANALYSIS

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### *Abstract*

*Engineering Education is a field of vast diversity and this being ever-demanding field of science and technology, the mediocre students find it hard to cope up with the increasing demands of engineering curriculum. Its important to improve the performance of an engineering graduate to help him develop in an all-round personality and a thorough professional in his respective field.*

*This paper deals with the effect of meditation on the Analytical power, Memory power, Concentration and Examination Performance of an engineering student. The proposed work provides a useful insight into the technique of meditation to be implied for improving the performance of an engineering graduate. As per the results obtained, after carrying out exhaustive study, we are encouraged to share this technique to be used by students in order to achieve excellence in the academic field of engineering.*

**Keywords :** Engineering Education, Meditation, Analytical Power, Memory Power, Concentration, Examination Performance, of Meditation Effects.

### INTRODUCTION

The real goal of technical education is to equip an individual to become a productive member of society in his/her chosen area of work. The Quality of technical education refers to polices, attitude, actions, procedures and implementation necessary to ensure that quality is maintained and enhanced. The output product of any process depends on its raw material and the quality of technical education very much depends upon the students. The students coming to the technical institutions should be smart mentally as well as physically able to perform, as an Institution is a temple of learning and

the teacher is GOD. The students must be imparted ethics like- sincerity, diligence, commitment etc.

It is also important to raise the performance level of a student to a certain standard upto which he/she is capable of. The process of meditation, is an age old process practiced by our sages and is deeply linked with the rituals and ceremonies of our Indian society. A technical institution with cream of students should also have high standard of output. Students, employees and society can be seen as customers and keeping these customers satisfied should be the main objective of Quality education. Further, the concepts of Knowledge Management (KM) are also being

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applied in this field. Before understanding the scientific technique of Meditation, it is important to know few things regarding Meaning, Properties & Functions of Mind

## MEANING, PROPERTIES & FUNCTIONS OF MIND

It is very difficult to understand the nature of the mind because it has no physical existence. It is very subtle as well as hidden. But the existence of the mind can't be denied, as many of our problems physical, mental and psychological are the outcome of our state of mind. Mind exists in the body but it is distinct from the body and organs.

Mind is also distinct from the spiritual self, 'the Knower' as he just observes the mind and its functions. The Knower perceives the external objects through sense organs but with the help of the mind. Perception of any event is not possible without the presence of mind. So in every event of perception there is an external object, an organ of perception (ears, eyes, nose tongue or skin), mind and the 'Knower' or 'self'. All these are connected very closely, inseparable but still distinct from each other. The mind can multiply or divide the strength of the Body. The person can't work if he is mentally not prepared for the work but a person can work with extra energy if he has mentally decided to work. The mind has tremendous speed. It can travel from one point to another point at infinite distance within fraction of a second. The mind interconnects the 'Self' with the physical body. The mind controls the physical organs through Brain, Autonomous Nervous System, and Endocrine Gland System.

We can summarise seven functions of the mind as follows.

- Consciousness
- Thoughts
- Emotions
- Perceptions
- Memory

- Intelligence
- Judgment

## THE CONDITION OF MIND

We have already seen that

1. Mind has no physical existence.
2. Existence of the mind is virtual.
3. The nature of the mind is to move from one point to another continuously.
4. The mind has tremendous speed.

It is clear from the points that the mind is highly unstable. Mind doesn't remain stable at any particular point or any object. It keeps moving all the time. Mind runs after the objects it likes, but runs away from the objects that it dislikes.

## CONTROLLING THE MIND

We have already studied that the function of mind is essential in the process of acquiring knowledge. For example when we are listening to a speaker in lecture, we learn through our ears. But if our mind is not concentrating on the lecture then we won't understand anything there. As the mind is unstable, it will run away from the lecture. So to learn what the speaker is telling, we must establish control over our mind and force it to listen to the lecture. Then only we'll be able to acquire knowledge.

Hence we have to control movements of mind and make it stable whenever we want, as per our requirements. But this is the most difficult part because of unstable nature of mind. This process of making mind stable is called Concentration.

This is true for any function of mind. If we want to remember a particular event, we will have to concentrate our mind till we remember that event.

It is clear from the above discussion that it is essential to control the mind. Only then,

one can get what he wants. But controlling mind is the most difficult task.

Efforts are being continuously made to find out the ways and means to establish control over mind. Hence, Meditation is one of the very effective ways to control the mind.

This control can't be achieved in short period. Meditation is a systematically designed technique to achieve this step by step.

## MEDITATION

Meditation is a practice of focusing attention, often formalized into a specific routine. It is a state of mind when mind is free from all kinds of thoughts. It focuses on a single subject. It helps a person to attain tranquility in life. It is a scientific technique to control the moment of mind and make it stable as per the requirements of an individual.

The techniques of applying Meditation are discussed here. Our mind and breathing are closely interconnected. The more restless, the mind becomes from the effects of lust and anger, the more our breathing loses its rhythm. If such loss of rhythm arises frequently, our peace of mind will be seriously jeopardized.

If we want our mind to be established in a state of perennial peace, we should practice some easy and simple methods of meditation, one of which is given below:

We know that Inhalation and Exhalation of breath is a natural process.

It does not require any effort from our side. While inhaling, silently chant, **O m — m**,

(AUM the 'Supreme Bliss' or 'Supreme Peace') ..and while exhaling, count one...two...three...with each exhalation. In this way, inhale while assume any of the God's divine virtues like Supreme peace, fearlessness, carefreeness, well-being, happiness, modesty, faith, truth,

steadfastness, firmness, etc. and go on counting during exhalation. Ensure that no breath goes without counting thus. In case, any breath goes without counting, re-start the counting from one. If we are able to count up to 50 or better still 108, our breathing will attain rhythm and the concentration of our mind will improve. While inhaling, visualize divine virtues being internalized, and while exhaling, visualize vices being discarded. If practised regularly, this Meditation is capable of taking us to great heights. Saint Kabirji has emphasized the grandeur of this technique. When the mind is calm, breathing becomes rhythmic and gradually the breathing becomes quieter. In other words, when breathing becomes more and more rhythmic, the mind proportionately becomes calmer. Concentrative meditation focuses the attention on the breath, an image, or a sound (mantra OM, the supreme bliss), in order to still the mind and allow a greater awareness and clarity to emerge. The simplest form of concentrative meditation is to sit quietly and focus the attention on the breath. Yoga and meditation practitioners believe that there is a direct correlation between one's breath and one's state of the mind. For example, when a person is anxious, frightened, agitated, or distracted, the breath tends to get shallow, rapid, and uneven. On the other hand, when the mind is calm, focused, and composed, the breath is slow, deep, and regular. Focusing the mind on the continuous rhythm of inhalation and exhalation provides a natural object of meditation. As we focus our awareness on the breath, our mind becomes absorbed in the rhythm of inhalation and exhalation. As a result, our breathing will become slower and deeper, and the mind becomes more peaceful.

## EXPERIMENTAL ANALYSIS

Analysis was carried out over a group of engineering students who practised meditation techniques regularly for a period of three months during the year 2006.

The different characteristics such as Efficiency, Memory Power and Studies Output Performance were analysed. It was observed that Meditation improves the Efficiency, Memory Power and Studies Output Performance of the students. Again the analysis was carried out over another group of engineering students who practised the above mentioned meditation techniques regularly for a period of three months during the year 2007. The different characteristics such as Analytical power, Concentration, Examination Performance and Memory power were monitored (Table 1), on the basis of the introspection (subjective observation) method of Psychology. The variation of these characteristics (before and after meditation techniques) has been shown in the figures (1 - 4).

#### EFFECTS OF MEDITATION

- Analytical power level of 80% students has been increased after meditation.

Figure 1(a)

- 95% students have experienced better

Concentration after meditation.

Figure 2(a)

- Examination/Studies Performance level of 65% students has been improved after meditation.

Figure 3(a)

- Memory power level of 70% students has been boosted after meditation.

Figure 4(a)

For the purpose of simplified analysis, the students having the assessment values of 10% and 30% have been considered at 20% (assumed as Low scale), 50% is assumed at Medium Scale and the values of 70% and 90% are considered as 80% (assumed as High Scale), before and after meditation.

After Meditation, the low scale values of all the four characteristics i.e. Analytical power, Concentration, Examination Performance and Memory power, have been reduced to Nil, the medium scale values have been reduced whereas high scale values have been drastically increased. (Table 2 to 5).

Table - 1

**Characteristics Analysis before and after MEDITATION**

S. No.	Student's Name	% Analytical Power		% Concentration		% Examination Performance		% Memory Power	
		Before	After	Before	After	Before	After	Before	After
1.	S1	50	70	30	70	30	70	50	70
2.	S2	50	70	50	70	70	90	50	70
3.	S3	50	50	30	70	50	90	50	70
4.	S4	50	70	70	70	50	70	50	70
5.	S5	50	70	70	90	50	70	70	70
6.	S6	50	70	30	90	30	70	70	90
7.	S7	70	90	70	90	90	90	70	90
8.	S8	30	50	50	70	50	70	70	90
9.	S9	30	70	30	50	50	50	50	70
10.	S10	50	50	30	70	70	70	70	70
11.	S11	50	70	50	90	70	70	50	70
12.	S12	50	50	50	70	50	50	70	90
13.	S13	50	70	50	70	90	90	70	70
14.	S14	50	70	50	70	70	70	50	70
15.	S15	30	50	50	70	30	70	50	70
16.	S16	50	70	30	70	30	70	30	50
17.	S17	50	70	30	50	30	50	50	50
18.	S18	30	70	50	70	50	70	70	70
19.	S19	50	50	70	50	50	70	30	50
20.	S20	30	70	30	70	30	90	50	50

**Table 2**

<b>Scale of Analytical Power</b>	<b>Before Meditation (Students %age)</b>	<b>After Meditation (Students %age)</b>
<b>Low (at 20%)</b>	25	Nil
<b>Medium (at 50%)</b>	70	30
<b>High (at 80%)</b>	05	70

**Table 3**

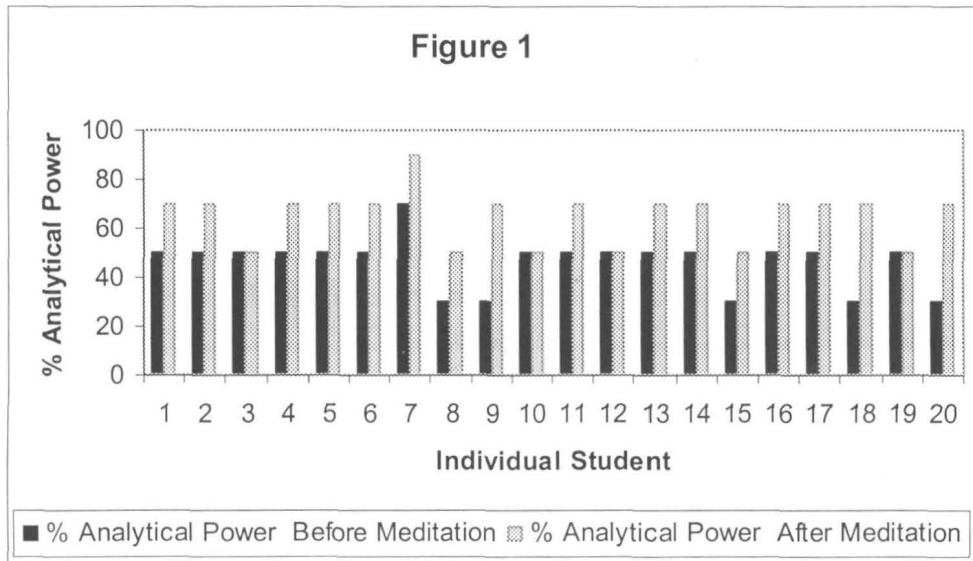
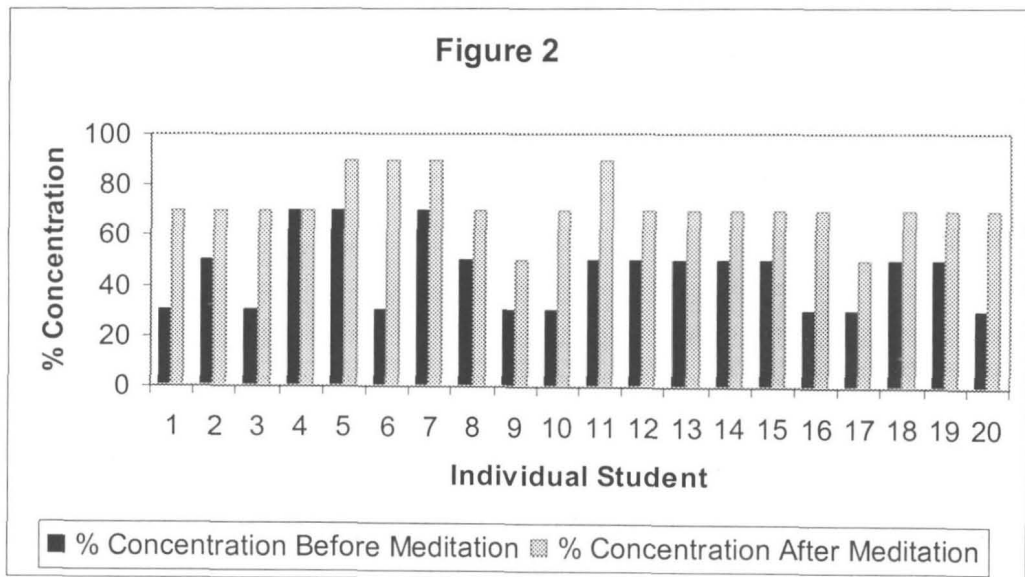
<b>Scale of Concentration</b>	<b>Before Meditation (Students %age)</b>	<b>After Meditation (Students %age)</b>
<b>Low (at 20%)</b>	40	Nil
<b>Medium (at 50%)</b>	45	10
<b>High (at 80%)</b>	15	90

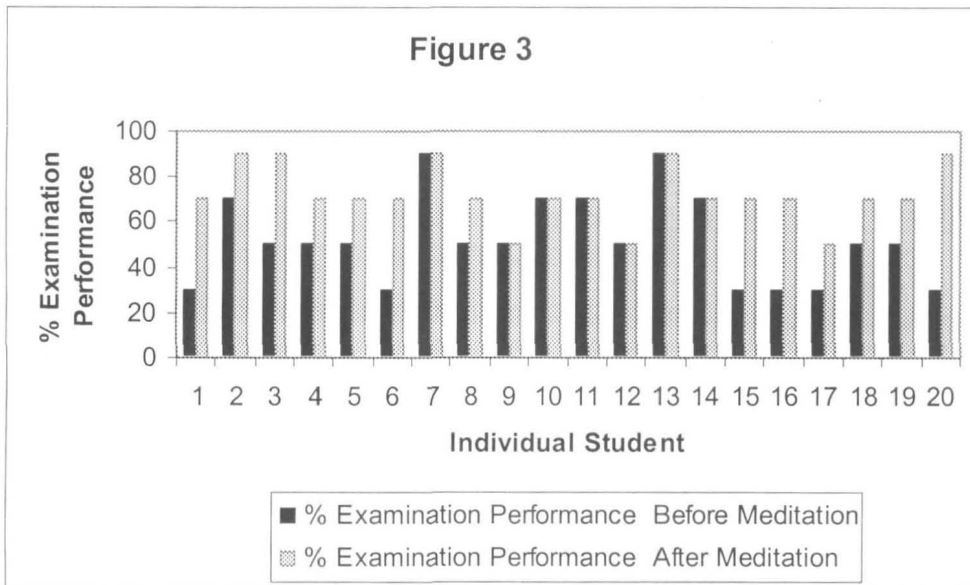
**Table 4**

<b>Scale of Memory power</b>	<b>Before Meditation (Students %age)</b>	<b>After Meditation (Students %age)</b>
<b>Low (at 20%)</b>	10	Nil
<b>Medium (at 50%)</b>	50	20
<b>High (at 80%)</b>	40	80

**Table 5**

<b>Scale of Examination Performance</b>	<b>Before Meditation (Students %age)</b>	<b>After Meditation (Students %age)</b>
<b>Low (at 20%)</b>	30	Nil
<b>Medium (at 50%)</b>	40	15
<b>High (at 80%)</b>	30	85

**Analytical power Total Improvement = 80 %****Concentration Total Improvement = 95 %**

**Examination Performance Total Improvement = 65%****Memory Power Total Improvement = 70%**