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A Study in Meditation: Implications for Learning.

Franklin E. Shurtliff
Northern Michigan University

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A STUDY IN MEDITATION:
IMPLICATIONS FOR LEARNING

APPROVED:

Robert M. Hanson
Advisor

April 14, 1977
Date

A STUDY IN MEDITATION:
IMPLICATIONS FOR LEARNING

RESEARCH REPORT

Presented to Dr. Robert N. Hanson of
Northern Michigan University
in Partial Fulfillment
of the Requirements
For the Degree of
MASTER OF ARTS IN EDUCATION

by
Franklin E. Shurtliff, Jr.
Marquette, Michigan

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CHAPTER I

INTRODUCTION

Statement of the Problem

The problem of this study was to determine if meditational practice has an effect on human potential in enhancing the process of learning.

Purpose of the Study

The purpose of this study was to show the relationship between human brain waves and the learning process and to review possible implications for learning theories.

Hypotheses

The basic hypotheses of this study are as follows:

1. Alpha brain waves are associated with relaxation and lack of tension.
2. The alpha state allows one to absorb great amounts of data effortlessly in a nonlinear fashion.
3. Meditation is a way to enable the human being to emit alpha waves at will.

Background and Significance of the Study

The physiological and psychological benefits reported from scientific investigations of meditation are impressive. Studies have shown many remarkable accomplishments which

meditational practitioners have demonstrated through the control of his/her own brain waves. The foundation of this study investigates what value is achieved in learning to control one's brain waves when applied to learning. In examining present studies, a state of paucity was encountered. Consequently, the establishment of the present status is reviewed and interpreted.

The inquiry into this problem stemmed from a psychological education class and curiosity as a practitioner of various forms of Eastern yogism. The class debated the psychological controversies of learning theories; although no attempt was made at getting involved within this study. One purpose of the education class was to bring students up to date on the psychology of education through the reading of journal articles. One such article, "The Functions of the Mind in the Learning Process," by Jay M. Yanoff began with "A teacher needs to understand the functions of the mind to facilitate learning."¹ He continues on without mentioning the basic electrical processes of the brain. These electrical currents are known as brain-wave rhythms. As a result of this lack of information, this study was conducted to find information about brain-wave rhythms and their relationship to learning.

¹Jay M. Yanoff, "The Functions of the Mind in the Learning Process," The Psychology of Open Teaching and Learning, edited by Melvin L. Silberman, Jerome S. Allender, and Jay M. Yanoff (Boston, 1972), p. 114.

Definition of Terms

Alpha brain waves are " . . . rhythms which go along with mental moods of complete relaxation and meditation; they are very slow, high-amplitude brain waves that range in frequency from 8 to 13 cycles per second. The more aroused a person is the fewer alpha waves he produces."²

Biofeedback " . . . refers to the process by which you are given instant information about your mind or body using an electronic instrument, or a monitor as the agent; biofeedback learning occurs as you become able to perceive the minute internal happenings of your body and mind, and learn to "feel" how to control events at will--how to turn on, or turn off, a bodily function."³

In meditation one learns a process of learning to reflect upon or contemplate the external world. Meditation is the consciousness force aware of itself; it is not a state in which time, space, and sequence play any part. "Meditation is not an escape from 'what is,' it is the understanding of it and going beyond it."⁴ "The ultimate aim of meditation is self-realization."⁵

²Colin Martindale, "What Makes Creative People Different," Psychology Today, IX (July, 1975), 44.

³Jodi Lawrence, Alpha Brain Waves (Los Angeles, 1972), pp. 5-6.

⁴J. Krishnamurti, Beginnings of Learning (New York, 1975), p. 243.

⁵Pandit Usharbudh Arya, Superconscious Meditation (Prospect Heights, Ill., 1974), p. 17.

In learning how to learn, the organism reorganizes his perception so that incoming stimuli are organized in a fashion which increase the acquisition of information.

Basic Assumptions

It was assumed in this study that:

a. Meditation is capable of being assimilated by anyone who can think.

b. The practice of meditation can be absorbed by any of the controversial learning theories.

c. Meditation increases one's inner awareness, allowing greater external involvement in developing human potentials.

CHAPTER II

A REVIEW OF LITERATURE

A first step in developing a relationship between meditation and learning is to understand more about the process of brain-wave learning. Once this has been established, one can then begin to comprehend the practice of meditation and see its potential relevance in our everyday lives.

Since meditation is an internal exercise, electronic instruments or monitors (EEG--electroencephalograph) are used to graph the electric currents emitted by the brain. These instruments, known as biofeedback machines, have uncovered new realms of mental control. Much of this impetus must be credited to three pioneers in the biofeedback field, Dr. Joe Kamiya, Dr. Barbara Brown, and Dr. Thomas Mulholland. Through the use of the biofeedback machine, these researchers have trained volunteers to enhance or suppress their brain waves. In mind control, the four brain wave rhythms which are considered are beta, alpha, theta, and delta. For the purpose of this study, attention is centered on alpha brain waves, since they are most important in self-regulation.

"When the brain is in a state of relaxed calm, it emits waves called alpha waves."¹ Brain waves should be thought of

¹Tomio Hirai, Zen Meditation Therapy (Tokyo, 1975), pp. 12-13.

as rhythms that move in wave-like ripples of electrical energy, currents that rise, fall, and rise again.

Alpha rhythms go along with mental moods of complete relaxation and meditation; they are very slow, high amplitude brain waves that range in frequency from 8 to 13 cycles per second. The more aroused a person is, the fewer alpha waves he produces If one's brain-frequency is too high, and one is too upset, anxious or stressed, it is hard to concentrate and settle down to the task at hand.²

"If a way were devised to cause it to emit only Alpha waves, the brain would remain free of tension and upset."³ However, one would not remain in this state forever. Alpha waves are associated with the receptive mode of thought which constitutes an orientation toward the present. The action mode, on the other hand, is related with ordinary consciousness which provides the body with problem-solving abilities. Neither of these modes is better than the other. ". . . we need the capacity to function in both modes, as the occasion demands."⁴

Through the use of the biofeedback (EEG) machine, people can learn to control their alpha brain waves; this is known as alpha learning. "Kamiya's (1969) experiments proved that people could learn to regulate their alpha brain waves."⁵

²Martindale, "What Makes Creative People Different," p. 44.

³Hirai, Zen Meditation, p. 13.

⁴Philip R. Lee, Robert E. Ornstein, David Calin, Arthur Deikman and Charles E. Tart, Symposium on Consciousness (New York, 1976), p. 87.

⁵J. Kamiya, "Operant Control of the EEG Alpha Rhythm and Some of Its Reported Effects on Consciousness," Altered States of Consciousness, edited by Charles Tart (New York, 1969), p. 515.

"Alpha-feedback learning is a different kind of learning because it is internalized and self-evolved."⁶

When you are 'in alpha,' you are more easily aware of both internal and external events in an alerted relaxation state. This allows you to absorb great chunks of data effortlessly in a nonlinear fashion. This 'alpha learning' state of consciousness has caused one educator to call it 'organic learning;' implying a natural use of the mind's resources for information intake.⁷

"Years ago, Dewey proposed that learning is doing, and doing is learning; Brown's technological system is based on 'learning by doing,' with the aid of the machine."⁸ Brown criticizes the behaviorists and hopes that her biofeedback discoveries will enable the individual to discover for himself the fact that he is responsible for his own thoughts and actions.

Dr. Barbara Brown, noticing how quickly people learned to control their alpha brain waves, decided that such learning was more an insight learning function than a conditioning learning function. Each one was actually interacting with himself, with a new knowledge of his own internal state. Somehow, each managed to activate a special kind of brain-wave activity.⁹

In the alpha state " . . . rewards are internal and subjective and they strengthen the response as you turn the alpha wave on."¹⁰

Most people produce alpha waves when they are relaxing, and reduce alpha frequency when they are working on a problem. Creatives produce less alpha when they are relaxing, and increase their alpha frequency when they work on an imaginative problem. Creativity and

⁶Lawrence, Alpha Brain Waves, p. 73.

⁷Ibid., p. 133.

⁸Ibid., p. 135.

⁹Ibid., p. 82.

¹⁰Ibid., p. 74.

intellectual ability require two different thought processes.¹¹

"But the imaginative students immediately produced significantly more alpha when we had told them to be original. That result was so stunning that it seemed as though the creative students were turning an alpha switch in their brains."¹²

"Research has indicated that while in alpha a person is capable of accelerated learning, healing of psychosomatic illnesses, increased creativity, memory improvement, extra-sensory perception and other psychic phenomena."¹³

Many research scientists believe that high-alpha people, who can turn large strength alpha brain waves on and off at will, learn in a more efficient manner than other people. It is thought that they absorb larger gestalts, and can be more aware of relationships between objects, events, and facts. Alpha control always implies completely suppressing alpha for fuller attention to more difficult fact collection.¹⁴

It would be a mistake to assume that alpha waves accelerate all types of learning. They are concerned with nonlinear learning; linear learning depends on another brain wave.

The studies cited above are concerned with controlling brain waves through the use of biofeedback instruments. In the same respect, meditation can also teach a person to control one's brain waves. A leading researcher in this area is Dr. Tomio Hirai, a Japanese specialist in psychophysiology. His

¹¹Martindale, "What Makes Creative People," p. 48.

¹²Ibid., p. 50.

¹³Anthony A. Zaffuto and Mary Q. Zaffuto, Alphagenics (New York, 1974), p. 5.

¹⁴Lawrence, Alpha, p. 132-133.

reports on the subject of seated Zen (Zazen--Japanese form of meditation) meditation in connection with brain waves have attracted the attention of specialists all over the world.

Hirai " . . . discovered that Zazen meditation is a way to enable the human being to emit Alpha waves at will."¹⁵
 "Examinations of the brain waves of meditating people show that the human mind is completely capable of being calm and static while remaining tensely aware of and receptive to its surroundings."¹⁶

Wallace and Benson (1972) verify these findings in their research:

These physiological modifications, in people who were practicing the easily learned technique of transcendental meditation, were very similar to those that have been observed in highly trained experts in yoga and in Zen monks who have had 15 to 20 years of experience in meditation.¹⁷

Hirai conducted some experiments to determine how much good even a little knowledge of Zen mental control could produce. He selected a subject from Tokyo University who had no Zen experience, and, before measuring waves, instructed him briefly in the breath-count breathing control method.

Although the majority of the waves his brain emitted were Beta, for periods of two or three seconds, he did emit Alpha waves. Of course, I am not underrating the long cultivation and intense effort needed to train a

¹⁵Hirai, Zen Meditation, p. 13.

¹⁶Ibid., p. 92.

¹⁷Robert K. Wallace and Herbert Benson, "The Physiology of Meditation," Scientific American, CCXXVI (February, 1972), 87.

person to be a mature master of Zen meditation, but it is extremely important that even a little instruction can produce this kind of effect, because it suggests the effects the Zazen method can have on the daily lives of ordinary people.¹⁸

We can see from this experiment that alpha brain waves can be contacted through meditation by ordinary individuals. However, patience and regular practice are required if its full effects are to be experienced. Meditation does not demand retirement into a Zen temple or Christian monastery but can be used as an active part of everyday life.

In reviewing the art of meditation, one contends with a vast array of methods initiated by religions, philosophies, and yoga on all continents. Each culture has its own indigenous techniques and precepts, with meditational formats ranging from the strictest of methods to the complete dissolution of methods. The practice of meditation is usually correlated with religious regulations although this is not entirely the case. Some meditational practices are not connected with religion or even a philosophy but rather a thought process which can enable individuals to achieve increased awareness and broader ranges of appreciation. The study of meditation has encompassed most cultures since the time of recorded history. Since a broad analysis is not the purpose of this study, we will concern ourselves with common assumptions. "The paths are many, but the goal the same."¹⁹

¹⁸Hirai, Zen Meditation, p. 82.

¹⁹Daniel Goleman, "Meditation Without Mystery," Psychology Today, X (March, 1977), 88.

"We are concerned with the total understanding of man. And this is meditation. Meditation is not an escape from 'what is.' It is the understanding of it and going beyond it."²⁰ There is no concern about dividing the inner and outer worlds but incorporating them into the conscious control of attention. In meditation, "focused attention" is concentrated on an object without loss of this particular focus; the object of attention will vary with the method practiced. Just closing the eyes and ears will not evoke a state of meditation.

For this reason, the mind is given some object to concentrate on, whether it be a specific light or a sound, or a chakra, center of consciousness, but first of all a mantram, so that the mind may be filled with that one object, work or sound and have some one point to remain attached to instead of becoming a boat without an anchor in a stormy sea.²¹

This is in the strictest conformity with the eastern method, which aims first to put a man in control of his mental apparatus, so that he becomes the one who uses it at will and is not the victim of the mind, swayed by thoughts and ideas over which he has no control, and which he cannot eliminate, no matter how strong may be his desire to do so.²²

The attempt is to create a mind of one-pointedness, withdrawn from external stimulus. "Concentration is not a state of tension and true concentration of mind can be achieved only in a physically relaxed personality."²³ Through the regular

²⁰J. Krishnamurti, Beginnings of Learning (New York, 1975), p. 243.

²¹Arya, Superconscious Meditation, pp. 90-91.

²²Alice A. Bailey, From Intellect to Intuition (New York, 1960), p. 119.

²³Ibid., p. 63.

practice of concentration one begins to notice that the thoughts are now beginning to come under control. One then begins to feel in control of the mind/body instead of allowing it to run rampant. "Whenever thoughts arise, just observe them as thoughts, rather than as being a subject."²⁴ The thoughts do not arise from anywhere but from within oneself. "There is a Zen metaphor that thoughts are like birds flying across the sky of one's mind, and one simply watches them come into view and then disappear."²⁵

"Before one can meditate one must learn to concentrate; otherwise one will be possessed with the will and the inspiration, but lack the necessary third ingredient, technique."²⁶ Once one has mastered the technique of concentration, then meditation and contemplation will follow.

Meditation really is a complete emptying of the mind. Then there is only the functioning of the body; there is only the activity of the organism and nothing else; then thought functions without identification as the me and the not-me.²⁷

Therefore, meditation is a method for getting one's inner self together. It is a device which centers on the mind as well as on the body. This is a tool which is to be used

²⁴Chogyam Trungpa, Meditation in Action (Berkeley, 1970), p. 64.

²⁵Mike Samuels and Nancy Samuels, Seeing With the Minds Eye: The History, Techniques and Uses of Visualization (New York, 1975), p. 113.

²⁶Christmas Humphreys, Concentration and Meditation (New York, 1968), p. 35.

²⁷Krishnamurti, Beginnings, p. 250.

in controlling the mind, to uncover the "organic center." Successful meditative practice produces clarity which is ". . . extremely useful in learning and performing a variety of tasks. Thus, the practice of meditation might be extremely useful in preparing the individual for the learning process and aiding him in making it more efficient."²⁸ This is to say nothing of the fact that meditational practice produces the highest recorded amplitudes of alpha brain waves.

Without special training, the average person's alpha brain waves would measure about 10 to 20 microvolts. With feedback training most people peak at about 60 microvolts. Zen masters have been measured and found to produce alpha brain waves that were as high as 100 microvolts or almost ten times the average person's strength.²⁹

Meditation is one answer for a "future shock" society. It is not feasible nor likely that the momentum can be changed, so the answer lies within us. "It is time that we made the receptive mode, and the experience which it engenders, a legitimate option for ourselves and for science."³⁰ "If the education process can recognize the uniqueness and the value of each child, it may become even more important in the development of healthy human beings."³¹ "By doing so, we can explore and regain a functional capacity that we may now

²⁸John Mann, Learning to Be: The Education of Human Potential (New York, 1972), p. 85.

²⁹Lawrence, Alpha, p. 212.

³⁰Lee, Symposium, p. 87.

³¹Ibid., p. 16.

need for our very preservation, as well as for the enlargement of our knowledge."³²

Abraham Maslow is in agreement with these ideas. ". . . many people never experience joy, those all-too-few moments of total life-affirmation which we call peak experiences."³³

We know that children are capable of peak experiences and that they happen frequently during childhood. We also know that the present school system is an extremely effective instrument for crushing peak experiences and forbidding their possibility.³⁴

He defines peak experiences as the goal and reward of learning, its end as well as its beginning. Maslow asserts that we should be teaching children to look within themselves and from this self-knowledge derive values. His ascription:

. . . introspective biology, of biological phenomenology, implying of the necessary methods in the search for spontaneity and for naturalness is a matter of closing your eyes, Taoistic and receptive fashion. The technique here is to just wait to see what happens, what comes to mind.³⁵

Meditation is the catalyst which can bring these peak experiences back into our educational institutions. In fact, the educational institution is our most prominent institution providing educators to facilitate such meditational learning effectively.

Krishnamurti inquires: "But if there is no tension at all,

³²Ibid., p. 88.

³³Abraham Maslow, The Farther Reaches of Human Nature (New York, 1971), p. 187.

³⁴Ibid., p. 188.

³⁵Ibid., p. 185.

no acquiring, no laying up of knowledge, is not the mind then capable of learning much more deeply and swiftly?"³⁶

So there may be the state of learning only when there is no motive, no incentive, when you do the thing for the love of itself . . . Do not pursue what you should be, but understand what is. The understanding of what you actually are is far more important than the pursuit of what you should be.³⁷

Finally, " . . . because I see, I am; because I hear, I am; because I taste, touch and smell, I am." The proponent of meditation states, "I am, therefore I think, I see, I hear."³⁸

³⁶J. Krishnamurti, Think of These Things (New York, 1964), p. 194-195.

³⁷Ibid., p. 196.

³⁸Arya, Superconscious Meditation, p. 7.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Standard educational learning theories do not take the natural brain-wave rhythms into account. This knowledge explains why our progeny fade in and out of cognition, producing states of intellectual boredom. Consequently, brain wave studies may help educators learn when to teach and what to teach. But of most importance, students can learn to increase their perceptual levels and thereby strive for individual learning potential.

In this study it was found that people can learn to control their brain waves through the practice of meditation. This practice produces alpha brain waves which are associated with relaxation and lack of tension. In the alpha state great amounts of information can be absorbed and assimilated in a nonlinear fashion. Therefore, meditation is a device which can be used by students to help them learn how to learn, and to enjoy learning, and to want to continue learning. It also provides motivation for learning by enhancing the students' identification with the subject matter.

Since we draw our associations from the subconscious, it is essential that we know how to bring these associations to the conscious level and engage in the process of associative

reasoning which is learning. Meditation facilitates the need for self-discipline and the acceptance of responsibility for self. Furthermore, meditation has a profound impact on education since it places the emphasis on learning, not on teaching, where it belongs.

Recommendations

Based upon the research conducted and subsequent conclusions of this study, the researcher submits the following recommendations:

1. The incorporation of brain wave knowledge into present-day learning theories.
2. The development of meditation classes and the subsequent promotion of alpha brain wave learning in the existing educational framework.
3. A similar scientific study should be conducted to investigate the meditational implications of fostering higher human attainment.
4. The development and research of "internal curriculums" to facilitate self-fulfillment and satisfaction in education.

BIBLIOGRAPHY

Books

- Arya, Pandit Usharbudh, Superconscious Meditation, Prospect Heights, Illinois, Himalayan International Institute of Yoga Science and Philosophy of USA, 1974.
- Bailey, Alice A., From Intellect to Intuition, New York, Lucis Publishing Co., 1960.
- Hirai, Tomio, Zen Meditation Therapy, Tokyo, Japan Publications, Inc., 1975.
- Humphreys, Christmas, Concentration and Meditation, New York, Penguin Books, 1968.
- Krishnamurti, J., Beginnings of Learning, New York, Harper Row and Publishers, Inc., 1975.
- _____, Think on These Things, New York, Harper Row and Publishers, Inc., 1964.
- Lawrence, Jodi, Alpha Brain Waves, Los Angeles, Nash Publishing Corporation, 1972.
- Lee, Philip R., Robert E. Ornstein, David Galin, Arthur Deikman, and Charles E. Tart, Symposium on Consciousness, New York, The Viking Press, 1976.
- Mann, John, Learning to Be: The Education of Human Potential, New York, The Free Press, 1972.
- Maslow, Abraham, The Farther Reaches of Human Nature, New York, The Viking Press, 1971.
- Samuels, Mike, and Nancy Samuels, Seeing With the Minds Eye: The History, Techniques and Uses of Visualization, New York, Random House Inc., 1975.
- Silberman, Melvin L., Jerome S. Allender, and Jay M. Yanoff, The Psychology of Open Teaching and Learning, Boston, Little, Brown, and Company, 1972.
- Tart, Charles E. editor, Altered States of Consciousness, New York, McGraw-Hill Co., 1969.

Trungpa, Chogyam, Meditation in Action, Berkeley, Shambala Publications, Inc., 1969.

Zaffuto, Anthony A., and Mary Q. Zaffuto, Alphagenics, New York, Double Day and Company, Inc., 1974.

Articles

Goleman, Daniel, "Meditation Without Mystery," Psychology Today, X (March, 1977), 66-70, 88.

Martindale, Colin, "What Makes Creative People Different," Psychology Today, IX (July, 1975), 44-50.

Wallace, Robert K. and Herbert Benson, "The Physiology of Meditation," Scientific American, CCXXVI (February, 1972), 85-90.

ABSTRACT

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The purpose of this study was to show the relationship between human brain waves and the learning process and to review possible implications for learning theories.

It was found that when the brain is in a state of relaxed calm it emits alpha brain-wave rhythms. During meditation such a state is produced, with a resulting amplitude up to ten times higher than the normal state. It was found that even a little knowledge of meditation can produce alpha brain waves. In an alpha state, large amounts of data can be absorbed effortlessly in a nonlinear fashion.

Meditation consists of seeing what arises in the mind and this perception creates a "state of nowness." A method for dealing with the present, meditation is an internal receptive mode of thought which can feasibly direct a "future shock" society. Through contemplation and concentration the individual reaches a state of consciousness which is unaffected by external stimuli. Thoughts become controllable as one learns to regulate the brain-wave rhythms.

Meditation is an answer for finding one's self center. When functioning within this center one creates perceptual clarity, clarity which uncovers a new awareness, an altered state of consciousness, which encompasses all facets of one's

existence.

The practice of meditation alters one's consciousness and perceptions. Therefore, incoming stimuli can be organized in a fashion which is indigenous to the individual, allowing an enhancement of the subject matter. This natural phenomenon can help the student learn how to learn, and to enjoy learning, and to want to continue learning.

Based upon these conclusions, the researcher feels that present brain-wave rhythm knowledge should be incorporated into present-day learning theories. In addition, "internal curriculums" should be developed to promote self-fulfillment and satisfaction in education, and similar scientific meditational research should be conducted to foster higher human attainment.

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