Chapter 11
INTRODUCTION

Since olden days vibration has been used for therapeutic purposes. In ancient cultures, music or to be more precise acoustic vibrations was the most commonly used method to produce therapeutic stimulation. In primitive cultures, drums, whistles, crystals and horns were used to produce low frequency sounds. Human voice was also used to produce audible overtones and so as to create a model of perfect harmony. Perfect harmony exists in nature. We should learn the wisdom of it.

Ibu Syna, the Arabic writer has dealt with the effect of music on disease. Healing by the power of music was a science in the orphic school. It was handed down that in Greece, a wound of Ulysses was healed by the use of music.

In the 16th and 17th centuries there was a opinion that a flute of Lellebome cured dropy; a flute of popular wood cured Sciatica, a pipe of cinnamon wood proved a sovereign remedy for fits of fainting.

During 18th century Richard Brown employed musical treatment for mania, melancholics, and hypochondrias. During those days physicians believed firmly the strong influence of music upon the higher cerebral centres and hence through the sympathetic nervous system upon other portions of the body, thus promoting digestive secretory circulatory, nutritive and respiratory functions.

Thales (600 BC) was called from Crete to sparta to cure plague by means of music. In the second century AD there was a traditional belief that the music of flute will relieve sciatica.

Medical records of the thirteenth century reveal that the Arabs dominating portions of Europe and founding great hospitals in which a music room - a striking feature a - place where musicians played constantly for the sick.

The role played by music in the psychological lines of human beings are unique. Music enables a person to acquire an artistic and aesthetic conception of life. Having a mathematical base, music also serves as an abstract interpretation of life. Different types of music reflect the particular travails and joys of various culture. The little knowledge about the cerebral cortex, where abstract thought takes place limits further interpretation.
Music and Learning

From historical days, music as a medium, was helpful in innumerable number of ways. Music is helpful in education—especially on the part of learning. Music as therapy with medicine is practised world over. The therapeutic value of music was known from prehistorical days. In modern times music has been used to understand about perception, behavior modification, music with handicapped children yielded encouraging results.

The effects of contingency guitar lessons on reading behavior was studied by Sensarin and Susan (1974) for children in the age group of 7 years and it improved their reading behavior with contingency.

Individualized music attention with systematic instruction was studied by Packer Judith, W.W Lilal (1974). It is a useful way to teach skills to elementary school children.

The effect of action songs on the development of body image and body part identification in hearing impaired children was studied by Galloway, Herbart, FPBean (1974). In this way some selected concepts may be taught to the children with impaired hearing.

Academic improvement in relationship with free play and choice of music lessons as contingencies has been designed and studied by Madson Clifford and others (1976). Music used as reward to improve the academic performance.

Scott and Carol (1977) studied on the pitch concept formation in preschool children.

McCarthy William(1965) studied the language development through music. The study suggests that power of music and those elements of language (rhythm, harmony melody form, dynamics and mood) are valuable aids to language development in children.

Hillard O'mark and others (1989) studied about the effect of familiarity of background music on reading comprehension. Familiarity of music makes children to perform well in the given task and leads to better concentration.

Music as Therapy

Music as therapy with medicine or without medicine has of late been highly recognised by children and adults alike in the performance. Researchers have high regard for the therapeutic value of music.
Wagner Michael (1975) studied the effects of music and Biofeedback on alpha brain wave rhythm and attentiveness. The study reveals that attentiveness in a silence condition and during musical stimuli are similar and no special difference has been noticed.

Mary and Priestly (1975) studied Music therapy in action. Music for preventive work the possible applicability for laymen also studied.

The significance of musical associations in the context of psychoanalytic therapy was studied by Payn Stephan (1975).

Dolan. Catharine studied (1973) the application of music as a therapeutic aid. Music therapy as a scientific tool will bring specific changes in an individual's behavior. Music as Therapy will help to attain predefined goals, and lengthen the temporal commitment to the desirable behavior to elicit.

Gromska Jadwiga (1975) studied about the Musico Therapy in the treatment of hyperkinesis and anxiety neurosis in children. Hyperkinetic children with difficulties in secondary coordination were subjected for musicotherapy. It helps to strengthening the ability for independent decision making, in solving life tasks, developing active attitudes toward self and environment awakening aesthetic sensibility, musical perception, musical memory and imagination. In this study two forms of music therapy were used.

(i) The receptive form - which involves listening to music. The auto expression of movement.

(ii) The active form-image projection - movement to music.

This therapy encouraged change in behavior and allowed the children to discontinue medicine.

Music with text and music without text and silence on the production of alpha rhythm in children showed high alpha production in a silent condition. The rhythms in the temporal lobes were normal. In this study the effect of musical stimuli on brain wave production of children was normal according to Furman Charles (1976).

Relaxation training, systematically combined with music in the treatment of tension headaches decreased the severity of headaches, and improved interpersonal relations as reported by patients. This result was gained in 19 sessions of Relaxation, which reveals that the number of attacks with tension headaches also decreased considerably.
Hernikova Libuse (1980) studied music therapy as part of the remedial educational project in children with Minimal Brain Dysfunction syndrome. This study demonstrates that stimulating and sedative remedial effects as well as educational ones can be evoked by musical stimuli. In children with MBD musical stimuli can stimulate subcortical and cortical attention, acoustic and visual motor integration, memory and the spheres of higher emotion and creativity. Three forms of therapy are described.

(i) receptive group form combined with painting;

(ii) An active form using (Orff 1984) musical instruments

(iii) Vocal and musical improvisation of fairy tales and stories.

In another study Formann Radl (1980) studied the function of Music therapy in the behavioral treatment of neurotic patients. In this study music has made a substantial contribution in reinforcing subjects basic ethical concepts. It also served as a medium of free communication by breaking the barrier of expression and enriching the pool of potential vocabulary.

In another study Schante Stefan (1980) studied the relationship between basic mood and experience of music form. This study investigated the influence of music on the basic mood-hypomanic versus depression.

In another study Hanser, Suzanne and Larson Sheron 'O' Connell Andree S(1983) studied the effects of music on relaxation of expectant mothers during labor.

The effects of music therapy program upon awareness of mood in music groups cohesion and self-esteem among hospitalized adolescent patients were studied by US Army Fr Rucker Ac 1983.

Forenlich, Mary (1981) demonstrated that music therapy session was more effective than medical play therapy. Findings indicate that music therapy elicited a more involved type of verbalization than did medical play therapy.

In another study, Ruhnet (1974) et.al. Music exposures were found to aid children in developing basic concepts essential to the development of other communicative skills, the ability to discriminate between tonal, atonal or pentatonic. This ability first appears in boys rather than in girls.
In boys, this ability appears at the age of six, and in girls at seven years. It is suggested that perception of music requires a holistic strategy in which, the play of patterned frequencies is recognized within a matrix of time. Music is a direct experience before being translated into thought and feelings.

Nathawana (1985) considered music therapy as a solvent of tensions and a means of unifying experience.

Nathawana (1985) Clinical Psychologist studied the psychology of music. Music therapy is increasingly used in psychiatric setup. According to the investigator, it is still debatable, whether music has a purely aesthetic relationship with human emotion, particularly in the case of resolution of tension. In this study, Music as a solvent of tensions and a means of unifying experience is emphasized. It has been shown that music can have an important role too play in the treatment of severely handicapped children, autistic children, Brain damaged children and children who have lost faith, basic trust etc.,

Music with Handicapped Children

There were reports of researches which discuss the usefulness of Music therapy for children with behavioral, emotional disorders, learning disabilities, physical disabilities and mentally retarded. This form of non-verbal situations extend across a wide range of ages and disabilities. The use of music therapy in the treatment of a mildly mentally retarded boy of 5 years was tried. The therapy for 18 month period helpful in regaining the lost spontaneity and also in achieving the set goals by regression techniques was studied by Alwin Julliette in 1981. Music therapy with developmentally handicapped children in making them aware of consciousness, ability to discriminate between self and therapist was studied by Boxhill Edith (1981).

Reflection pattern of music (instant playback) identification type of music (symbolic representation) content song (reciprocal range-), these were helpful in actualizing the client's potential

Musical preferences and behavior in normal children and emotionally disturbed children was studied by Merle Fishman (1982) and others. Emotionally disturbed children made more irrelevant comments and more tonal responses. The spontaneous responses of normal and emotionally disturbed children differed significantly.
Efficacy of music as therapy in schizophrenics in treating the anxiety and fear effectively in children was established in 1982 by Carol and others. In another study it was proved that music facilitates learning in children with learning disabilities. With music the children performed relatively well on tasks related to right hemisphere, but poorly on left hemisphere tasks.

Rhythm and time in the perception of Down's Syndrom's children was studied by Stratford Brain and Ching Conney in 1983.

Music was utilized in making the emotionally handicapped children to learn their body parts and self comforts and increased self expression by Adler, Ruthlee and others (1985).

Influence of Music in other fields

Bonny Helen (1975) studied about Music and consciousness. In this study music was used as a projective technique and as a means of teaching individual children to understand themselves through states of consciousness evoked by music.

Creativity and music was studied by Albert Montstart (1976). The study discusses the contributive factors involved while a person is attempting a creative activity to express emotions and ideas.

The role of perception in Music - studied in USSR by Tsekhanski (1976). In this study on the perception of harmony and musical meter, the results reveal that a connection exists between the temporal and tonal structure of musical ability in the perception of music.

The differential effects of stimulative and sedative music on anxiety concentration and performance was studied by Smith Carol and Morris Lang (1977). The study reveals, the effects of music are to be understood in terms of cognitive processes, rather than primarily on the basis of physiological, affective responses to musical stimuli.

The effects of Music, and Melodic perception, instruction on pitch discrimination, and vocal accuracy in children was studied by Hilary Everlet (1983) and others. Fuji Hana Tachnino and Jogushira Nabuko (1984) studied the multi dimensional scaling of classical music perception. Students who had musical background and exposure to music performed better than others who were not exposed to music. Their responses were dominated by affective dimensions.
Balch William (1984) studied the effects of auditory and visual interference on the immediate recall of melody, memory and cognition.

In the area of brain and cognition Segalowitz et.al. (1985) ascertained that music draws attention to the left, and speech draws attention to the right hemisphere. Findings show that the right handed subject is more likely to attend to the right side, when attending the verbal stimuli, and to the left side when attending to the musical stimuli. This study suggests a generalized attentional asymmetry.

In a study on the medical aspect of musical development (Manchester Ralph 1988), music development is discussed in terms of the interaction of mental and physical processes of the nervous system, respiratory organs. Other organs also play a supportive role. Health problems affecting any of these components can interfere with music development.

Effect of tempo on children's music preferences showed that children who concentrate more feel the tempo of music actively. Labale's (1983) study reveals that children's preferences for slow and fast tempo differs significantly with regard to time.

Music and Perception

Psychologists and other humanistic researchers have begun only recently to explore higher level processing of music. According to Kumhans' (1985), "When we listen to music, we hear the sounded elements not as disconnected units but in relation to one another. The individual tones are perceived in terms of their functions in the broader context of pitch and rhythm, and we achieve a sense of the underlying organization of the composition.

For psychologists studying mental capabilities, music is interesting because cause it requires the listener to perceive and remember complex events occurring over a period of time.

Diana Deutsch (1973), performed a classic experiment in the psychology of music to demonstrate the similarity of tones and octave apart.

According to Burns and Ward (1982) tones separated by one Octave are in some respects musically equivalent. This concept is often called "Octave generalization"
Carol Krumhansl (1985) used a method called the probe tone technique to examine the tonal in music. In the probe tone technique listeners first listen a musical chord or a scale, either of which provides sufficient information to establish a key. Then a single tone or probe tone is presented. The listeners are instructed to rate how well that tone fits within the scale or chord presented earlier.

Krumhansl (1985) found a high positive correlation between probe-tone ratings and the total duration of the tones. Krumhansl was curious to see whether these ratings of probe tones were correlated with the use of these tones in classical music. Krumhansl found a high positive correlation between probe tone ratings and the total duration of the tones in music.

Perception of loudness with regard to music, when music is played in an enclosed space we need to consider both direct sounds and indirect sounds, which reach the listener after bouncing the walls. According to Rasch & Plomp (1962) these indirect sounds influence not only the loudness of music but also the impression of spaciousness.

Deutsch (1996) Points out, “timber may be described as that perceptual quality of a sounds, when simple attributes such as pitch and loudness are held constant (Flute and Oboe) nasal sound of same pitch are easily distinguishable.

The important determinant of timber is the harmonics that supplement the fundamental frequency.

Helmholtz’s classical view of timber proposed that differences in the sound quality of musical instruments could be entirely traced to the distribution of harmonics (Risset & Werfel 1982)

A musical tone has three sections during the time it is played

(i) The beginning, build up of a tone; (ii) The middle portion of a tone, (iii) The decrease in a multitude at the lend of a tone.

It is clear that the perception of consonance and dissonance depends upon individual differences and cultural backgrounds

Pattern & Organization in Music.

Gestalt laws of grouping and the figure ground relationship can be applied to audition.
The Law of Similarity

Classical music compositions can exploit this law. When music is played fast enough, listeners prefer to group a tone with tones from approximately similar pitch ranges. At slower speeds listeners still tend to group tones in terms of similarity. Other research indicates that listeners group not only in terms of pitch similarity, but also in terms of similarity in loudness, timber and spatial location. (Deustch and Ferore, 1981).

The laws of good continuation is important, a melody that is clearly perceived as a unit because it continues in a consistent direction. Research has demonstrated that good continuation is important in music perception (Tongas and Bregman, 1985).

Figure and Ground

Sluboda (1985) points out that in music only one melodic line can be heard as "figure" at any time. The other melodic line or lines forms the background.

Constancy in Music

Edworthy reports that according to early English (1985), Gestalt Psychologists Von Ehrenfels (1890) melodies can retain their perceptual identities even when they are transposed to different keys, as long as the relationship between adjacent tones in the melody remain constant. Deustch (1986).

Relaxation Training

Bennett, Gerald and Mill and Mark Rochdale (1985) studied about the compliance with relaxation training. In this study relaxation training was used in anxiety management. In this study RT has been induced as additional information about the procedure and its rationale to test the effect on compliance with recommended practise of relaxation training.

According Joel Rorch (1986) Relaxation training was added as a therapy increases attentive behavior, this study also asserts that cognitive components can be reduced through relaxation training.

Waranch Richard and Keenam David, studied the behavioral treatment of children with recurrent headaches. In this study fifteen 10 to 17 year old children who suffered from migraine, muscle contraction, and tension headaches and who were treated in a behavioral medicine clinic by using Relaxation, biofeedback and behavior counselling. At the end of 4 to 11 sessions, individuals
were reported free from headache, and 5 others exhibited a marked reduction in headache frequency and severity. Improvement was maintained at follow-up period of 6 to 22 months after the relaxation training was used.

Hampstead William (1986) studied the effects E M G assisted relaxation training with hyperkinetic child as an alternative to medicine. Relaxation training was also used for Alcholics, Fire behavior, chronic headache, fits counselling as an alternative to drug treatment.

Linoff Marian and west Colleen studied about the relaxation training with tension headaches combined with music in 1982. In this study geriatric patients, were instructed in the following pattern. (1) verbal instruction with music Medications reduced or discontinued. In nineteen serious patient reported decreased headaches, more comfortable, and improved interpersonal relations with others.

The effect of music on relaxation of expectant mothers during labor was studied by Hanser, Susanne and others in 1983.

BRT with developmentally disabled was first(1982) demonstrated by Bonne Mcgimpsey. The primary goal was to develop and test BRT modification and to determine the feasibility of applying them to develop mentally disabled persons. Four subjects two men and two women in the age group of 21 to 44 years were refered for relaxation training. Training occurred fivedays a week at a university office. Sessions were 25 to 30 minutes in duration including a five minutes adaptation, ten minutes training, five-minutes assesment periods, baseline, post training, and fourweek follow up session's results were collected. The results of this study demonstrated the feasibility of BRT with developmentally disabled adults

BRT with brain injured individuals was demonstrated by Donna Zahara (1983). Three subjects in the age of 22 years, 30 years, and 29 years were refered for the study. The subjects were 'nervous' or irritable, and who felt relaxation would benefit their motor control, social interactions, and general health. The first subject had been injured in an automobile accident and mainfested both gross and fine motor skill impairment. The second subject displayed impulsivity, restlessness, and social skill deficits. The third subjects problem included reasoning, memory, and speech impairments.
Training sessions were scheduled three times weekly and lasted approximately 30 minutes. Motor skills assessment took place after each session. The subjects reached 80% relaxation criterion in four to eight sessions, and maintained or improved this level in subsequent sessions. This study showed the feasibility of BRT with brain injured individuals.

BRT with hyperactive children was demonstrated by Raymer and Roger Poppen (1985). Three boys referred for the study. The first trainee was 11 years, and second trainee was 9 years old and the third trainee was 9 years old. Training was conducted with a large recliner and a one way window. Training session were conducted approximately twice a week. Follow up measurement were conducted two to three months after training. After that, the parents of the subjects also trained in BRT. This study demonstrated that children meeting multiple diagnostic criteria for hyperactivity, could learn to relax. Effects of relaxation on the broader class of hyperactive behaviors were reflected in improvements on the hyperactivity index.

Behavioral treatment of hyperkinetic children, was studied by Daniel Oleary et al. (1976) and his associates. Children studying in lower middle class were assigned to control group and behavioral treatment group-8 in the former and 9 children in the later were selected. The average age of children was 10 years. All the children were of average intelligence and were above average on the activity scale and none of the children were receiving medication for hyperkinesis. The critical element of the program was the selection of appropriate rewards for the children. Drug therapy alone helpful with hyperkinesia, in the short term. The results presented suggest strongly their behavior therapy can be effective for hyperkinesia.

Behavior therapy and pharmacological treatment of hyperkinetic children was studied by Gittelman et al. (1975). In this study children selected were in the age group of 6 to 12 years, attending elementary school and have observable behavior problems in the classroom and disruptive classroom behavior. Children selected for the study were randomly assigned to one of the three experimental treatments for an eight week period.

1. Behavior therapy with methylphenidate
2. Methylphenidate alone,
Behavior therapy was implemented in both the home and school. The behaviors most frequently reinforced in school were listening to teachers, not calling out, not interrupting, not leaving seat, doing the work, and not disturbing other children. At home the behaviors modified typically consisted of listening to parents following stipulated rules, cooperating with duties, not fighting with siblings.

Children treated with behavior modification alone had a mean improvement of 1.48 on the hyperactivity factor of Teacher Rating scale. Parents reported improvement on their children who underwent behavior therapy in the classroom.

Dobson (1980) conducted and investigation to find out the potential sources of stress in a student's life. Subjects were 223 six-form students, administered a fifty item questionnaire to study the sources of stress. The result showed that preparation for public examination caused them either a 'lot of stress' or 'extreme stress'. Sources of stress were correlated with self-reported student stress. The item relating to 'examination pressure' was consistently associated with higher level stress. A principal component analysis of the sources of stress produced twelve factors suggesting that stress is not unidimensional but multidimensional. The factors were problem in getting down to work petty school discipline, parental demands, standards of work required by the teacher, future goals, demands of academic life, examination pressure, travelling to school, size of the class, problems with peers and family.

Vace and Greenleaf (1980) examined the effect of relaxation training and covert positive reinforcement on maladaptive behavior in elementary school students. They were given a Behavior Rating scale and Taylor manifest Anxiety scale. Out of 60 students attending special classes for behavioral disturbances, 28 were randomly selected and assigned to one of the four experimental groups. They were: (i) deep muscle relaxation training (ii) deep muscle relaxation training supplemented by covert positive reinforcement (iii) placebo, unrelated and unsupervised activities (iv) no treatment. The first two groups received half an hour training twice a week for four weeks. It was noted that the results did not differ significantly though they had changes.
Thomson et al. (1980) examined the effect of EMG Bio feedback and relaxation training on students, academic achievements. 19 test anxious fresh college women were administered the Achievement Anxiety Test, Eysenck Personality Inventory, and the State-Trait Anxiety Inventory. The subjects were exposed to 6 sessions of either anxiety management or stress management training with live instructions. Results indicate that all 4 treatment combinations successfully reduced both somatic and cognitive anxiety symptoms. The average, grade point average of the experimental subjects was significantly higher than the matched no treatment controls.

Stouten et al. (1980) examined the effect of relaxation training on students 'persistence and academic performance'. The subjects were college students. The research show that fifteen EMG Bio feedback subjects had greater persistence (contact hours) than the fourteen subjects who were given progressive relaxation. Further it confirmed the both techniques had beneficial effects on students academic performance compared to 12 no treatment controls.

Siddharthan (1980) examined the study of the effect of relaxation and placebo therapy on school children. 50 children were administered cantela's cues for Tension and Anxiety survey schedule, Patil's Insecurity and Insecurity Questionnaire, know cube imitation Test, Letter Cancellation Learning Test, Wechsler's Digit Span and Associated Learning Task. The results of pre-post test evaluations indicate that, both relaxation and placebo therapy significantly reduced their tension, anxiety, inferiority feelings and insecurity feelings.

Dotson (1985) studied the effect of progressive relaxation exercise on classroom behaviors that interfering with learning. Subjects were forty junior high school students, who were identified as behavior disordered or emotionally disturbed and were placed in a special education program, known as Significant Identifiable Emotional/Behavior disorders (SIEBD). The experimental and control group contained 20 students each. The behavior of students were evaluated by their teachers using the Hahnemann High School Behavior Rating Scale (HHSB). The experimental group received the progressive relaxation exercise training in addition to the standard SIEBD program components, classroom instructions and counselling services to students individually and in groups. The control
group was not given the progressive relaxation exercise, but they received the standard SIEBD program. The training consisted of 5 sessions of one hour each. The statistical analysis of covariance was used to evaluate the effectiveness. The one way analysis was used to measure the relationship of time-in-program, sex, grade and age to the thirteen factors contained in the HHSB. The results show that no overall significant differences were found with the self-control of classroom behaviors between the experimental and control groups. There was some significant relationship with two factors on the HHSB labelled as General Anxiety and Dogmatic Inflexible, but this result did not affect the overall difference between the two groups.

**Low Frequency Sound in Vibrational Medicine**

In music the harmonic cover of the human organism represents the same kind of perfect order as (Rudhyar, 1991). There are theories that human health is also a certain type of harmonic, vibrational whole.

Nikolai Tesla developed in the 19th century a pattern in which diseases could be understood as deviations from the natural frequencies. He also developed a method of transmitting energy long distance (Gerber 1989). The name Tesla was accepted as a standard measure for the strength of an electromagnetic field. Harmony is a well known concept for music therapist. Therapists are using musical structures as a tool in creating similar of order in the human mind and body. Perfect harmony exits in nature.

Standley (1991) reports about her experiments where acoustic stimulation was used to produce changes in pulse blood pressure and skin temperature. In her study music and drill noise were compared. The results show that body responds to sound stimulation. In an earlier study (Standley 1991) clinical trials indicates statistically significant changes in heart rate when music has been used.

Modern, Standley and Gregson (1991) reported that vibrotactile stimulation resulted in no significant change in heart rate, but they observed that the heart rate tended to follow the changes in the tempo of music. Emotional reactions were positive and varied between moderate and strong.
Low Frequency Sound in the Physio Acoustic Method

There are several system where sound is played. The sound stimulation used is usually pre-recorded music, or other kind of acoustic information. In the Physioacoustic method low frequency sound is produced by specially designed computer, which creates sinusoidal sound waves. The frequency varies from 27 to 113 (CPS) since waves are used because single sound wave is the purest coherent acoustic information. Coherence is an important concept in a coustic vibrational therapy. This method is a new application of sound therapy.

Music is an essential part in the physioacoustic therapy. It has both a psychological and physiological effect. Psychologically it creates a security and comfort. Physiologically high frequencies of music cause intra cellular resonances. This method can be used in a precise and well controlled way to correlate in input into the body with the physiological responses.

Behavior Problems in Class Room

Kearney David, Chislon Banj Knight Grenville and others of psychological service Baltimore house, (1988) studied the development of an effective role for educational psychologists in helping teachers to reduce disruption. This study discusses the development of a package for helping teachers to reduce disruptive behavior. The preventive approaches to disruption (PAD by chishom 1986) through three broad areas of teaching

(i) Effective communication, (ii) Lesson organization (iii) Pupil management

Four main assumptions underlie the intervention. Behavior of the teachers influences the behavior of pupils, effective teachers can avoid disruption techniques for class room management.


Macay (1974) studied the teachers assessment of children's competence in class room lessons. He analyzed video tapes of teacher-child interactions and concluded: the teacher thus treats the child as empty of knowledge (ie. Correct answers) and moves him from this state of emptiness
to a state of fullness, i.e. knowledge, a process she accomplishes by asking questions and reformulating them until the child gives the 'correct' answer. In some instances the teacher not only asks the questions but also finally gives the correct answers. Instruction is the occasion for adults to exercise their preference for a certain meaning of the word for the child.

Bremme and Erickson (1972) carried out an video tape analysis of a teacher-pupil activity called "First Circle", in which 24 children and their teachers sit on the rug for about 15 minutes in the morning to discuss things and plan for the day. The authors found a subtle distinction between "teachers' time" and "students' time". There is no formal designation of these time periods, but pupils and teachers "know" which is which and act accordingly. These rules are entirely informal and they are reinforced by the pupils as well as the teachers by attending or ignoring appropriate or inappropriate behaviors in the class.

Stebbins (1975) carried out a study in which he observed and recorded teacher-pupil interaction situations in 70 classrooms, then interviewed the teachers to elicit their definitions of them. He found that teachers shared a cognitive map of pupils delineated by the following dimensions: deportment - attentiveness and orderliness, academic performance, socio economic status, shyness, activeness, and tardiness. Teachers, by virtue of their vested authority, have considerable influence on children behavior.

In channelizing the pupils careers teachers may base their actions on implicit predictions of each pupil's likelihood, of improvement. These judgements are formed from observing pupils in a variety of classroom situations.

Mehan and others (1973, 1974) have seriously undermined the assumption of objectivity in academic tests. Mehan (1973) video taped the administration of individualized language development tests to a class of 23 first graders. After hearing a question read by the tester, a child was required to point to one among several pictures, only one of which demonstrates the correct answer. He found that testers "interpreted" a large number of answers, especially in situations in which children placed their fingers between two pictures, answered correctly before they had heard the entire question.
Hodgkinson (1967) observed a spelling baseball game that was supported to improve pupil's spelling abilities. Afterwards he asked pupils to write down everything they had learned from the game; children gave variety of answers, but more mentioned spelling, the pupil's showed no improvement over their previous performance.

Combach (1975) noted in a research paper, numerous cultural, motivational, personal preference and personality characteristics are known or suspected to interact with instructional variables in determining educational outcomes of children.

An extensive survey of studies of prevalence of behavior problems has been made by Gildewell and Swallow (1969). The most prevalent problems were problems of intrapersonal distress. They included temper tantrums, day dreaming, unusual fears, and frequent crying. They appeared in about 20% of school children. They unusual fears, and crying appeared more often in girls than boys. The next most prevalent problem was the deficit of interpersonal skills, appearing in about 15% of school children and showing no sex differences. Antisocial behavior appeared in only 5% of the school children and appeared more often in boys than in girls.

Spivak and Shure (1974) have developed a preventive program for nursery and K.G. children. They use an adoption of the Bereiter and Englemann language program to teach children listening, language, logic and interpersonal skills in solving actual problems, but in game form-a tension management device. Children receiving training offered significantly more solutions to interpersonal problems than controls and maintained their gains for 2 years.

Anderson (1964) made observations in a special classroom which revealed a small group of disruptive children monopolized most of the teachers attention. For these deviant children, the rates of deviant behavior covared with the rate of teacher attention. Teacher training programs and their successful outcomes seems effective in altering classroom behavior for problem children.
Durrand et al. (1989) selected treatment strategies for 14 students with severe developmental disorders and problem behaviors. These were based on the reinforcers that were maintaining the problem behaviors. Thus if problem behaviors were maintained by social attention, social attention was used effectively as a reinforcer for task performance. If problem behaviors were maintained by negative reinforcement, (escape from a task) breaks from a task were effective reinforcers for task performance. The researchers found that reinforcers that are functionally related to a problem behavior can serve as a effective reinforcers for desirable behavior.

Touchette, MacDonald and Langer (1985) examined the relationship between problem behaviors and environmental stimuli by using a scatter plot. This scatter plot indicated the time periods when problem behaviors occurred. This study provides a clear demonstration of the rearrangement of environmental stimuli, based on an environmental assessment to eliminate problem behavior.

In a study the effects of strategy training on retarded persons was described by Hen R Leaws (1982). This study furnishes the teaching technique to help mild to moderately retarded children learn (instrumental) music. It helps intellectually handicapped children, creativity to develop self expressions socialization and musical competence.

Ramakrishna, Singh, Sharma, Shrivastava (1988) studied about the use of relaxation technique in the treatment of essential hypertension. In this study, relaxation therapy alone helped in reduction of blood pressure.

The effect of melodic symmetry on need for resolution ratings for musical intervals was studied by Timothy Maker and Nazir Jairazbhoy (1985). The findings revealed that, gestalt principles to the understanding of musical materials and providing a sound perceptual basis.

Rao, Moorthy and Parthasarathy Studied Teacher's perception of behavior problems in primary schochilren. (1983) 300 students were included for the study. Of them 72 were problematic, 228 non-problematic children. The problems usually considered by Mental Health professionals were not recognized as problems by teachers. But nervous habits like chewing bag, bag tie are commonly
considered as problems. The boys are said to be problematic in school when they damage or destroy to the property, disobedient and inattentive in the class, quarrel with other children in the school. Poor socio-economic status presented more problems. Problems like chewing the bag, tie, not maintaining silence in the class, not mixing with others were seen more frequently among girls. Parental concern with children's education plays a vital role not only in the scholastic performance but also in behavior problems.

Peet and Johnson, Clark (1988) studied the effect of parental rejection on negative attention seeking classroom behaviors. Of concern to teachers are, student displaying class room behaviors, which are disruptive in attaining pupil success in learning and also teacher success in teaching. The effect of parental rejection on negative attention seeking classroom behavior has significant influence in disruptive behavior.

Indian Studies on Music

India is the first country to evolve a system of solmisation - Srngmpdn - this is mentioned in such an early work as the 'Naradha Parivrajaka Upanishad' written more than 3000 years ago. There was a manuscript called 'Raga Chikithsa' in Tanjore saraswathi Mahal Library. (Burnell). There are innumerable number of unique informations available with regard to the classical ragas and its effects on human being are refered in but unregistered in journals.

To mention a few instances, in relation to the impact of classical ragas on humans, sleeplessness can easily be cured by making the afflicted persons listen to pieces in Nilambari raga, periodically under specified conditions.

Martial fervor can be instilled in persons by making them listen to pieces in kedara raga or bilahari raga under specified conditions. Sriraga aids good digestion. Sama raga helps to restore mental peace in agitated minds. The basic Chara relief from paralysis can be obtained by listening to pieces in Divijawanthi Raga. Melancholic mood may be made cheerful by listening pieces in the raga Bilahari. Nadanamakriya makes individual to be humane. The accelerated heart beat can be brought back to normality with the tempo of music. The heart beat will react to the tempo of music sympathetically.
Madhyamavathi is a raga which takes the first three notes in the cycles of fifths and fourths (Samvada dvaya) has a high degree of 'rakthi' in it. A state of aesthetic equilibrium and tranquillity are restored in individuals who had been subjected to emotional appeals of a varied character.

The emotional feeling gained through music is an experience and has a psychological basis. Music is a powerful vehicle for the portrayal of feelings. It is a subject of universal significance. There were innumerable number of studies available in the Indian origin and history has ample evidence, and practically unable to establish the findings because of its intricate applicability to subjects.

In a study on concordant and discordant intervals on school children by Kalanidhi M.S. (1970) two sets of notes were played on the piano to a group of 82 middle school and 92 high school girls in small batches. In the first series five concordant and discordant notes were alternately arranged and each played twice with five seconds interval in between trials. The subjects recorded each item as to whether they liked it or disliked it. After an interval of ten minutes, in the second series, ten concordant and discordant phrases were alternately arranged and played twice each with five seconds intervals, between trials.

The results of the study indicated a general trend, for concordant to be more liked than disliked among middle school children, and high school children for both simultaneous and successive presentation of notes. While discords seems to be the preference for middle school children. High school children have expressed definite dislike of the same in the simultaneous presentations. It was also found that the younger age group are less negatively disposed toward discordant intervals. Lastly successive presentation was found to reduce the effect of dissonance.

In a study of mood effects of music, by Kalanidhi (1973) ragas such as hamsadhwani, bilahari, kapi, hamsanadhama, were rated significantly as happy in their effects, while mukhari, chenuka, malahari and subhapantuvarali was rated relatively as sad. None of the boys in the sample had any technical knowledge, training, practice in Karnatic music, thereby confirming the spontaneity of the effects mentioned.
The absence of flat swara, the presence of major second as the slanting note, for all the happy notes, pleasant, consonant, intervals use of semitones, in successive presentation along with other stable and consonant intervals generally help to produce a happy mood. The study highlighted, that the mere presence of flat notes and semitones never indicate a particular mood. But it is entirely based upon sequence of intervals, and the spontaneous choice of certain ragas by the composer himself to express his feelings speaks much about the natural expressiveness of such ragas.

Music for blind children to learn concepts was also studied by Kalanidhi (1972). It was also represented the blind children have especially a flair for music and its helps them to learn concepts quickly. It was also said to be the case of preschool children in cognitive development.

Semantic descriptions and synesthetic relations of Ragas studied by Deva and Virmani (1974). This study reports about an empirical study of psychological responses to a few ragas of Indian classical music. The chief aim of these researches was to make a comparison of the mood ‘Created’ with the mood ‘intended’ by music.

In the experiment four musical excerpts, namely ragas, Kafi, Misremand, Pooriya Dhanasri, and Rageshri, obtained from the recordings of the performance of Ravishankar on the sitar only the alap position. The subjects selected for the study one untrained in classical music. The intended mood of Kafi raga depicting gaiety, devotion, romance and pleasantness etc., was found from their responses to have been created on the respondents as a mood of lourfulness, refreshing, colourful, active etc.,

An attempt was also made to examine, whether respondents associated any specific color, season and time of the day with a raga. Efforts were also made herein to study the meaning of music in relation to certain bio-data of the subjects, sex educational qualification, age and training in classical music. There were 228 individuals of various age groups, different types of educational background and varied training in classical music.
present project indicate the efficacy of Music therapy in multidisciplinary approach to the improvement of language skills. These model scientific studies both in west and in India may validate the claims of the ancients about the power of music in the life of mankind.

In another study Virmani (1976) studied about the experimental psychology and Indian music. In this study the author describes about the music, as aesthetics, music as behavioral science and the subject matter of aesthetic as behavioral science. The study also discusses about empirical contributions, conceptual contributions, perception and music creativity, musical aptitude, musical taste etc.,

Sudhirbhushan Bhattacharya of Calcutta (1976) studied about the role of music in society and culture.

Premalatha sharma (1976) studied about the "Rasa theory and Indian Music" According to the author, Rasa in its essential form of aesthetic delight is undoubtedly present in music, but its direct analysis in terms of traditional exposition is neither fully possible nor it is warranted. Music is also capable of making an 'Ahridaya' (a heartless man) into a 'Sahridaya' (a hearty man) by purifying his heart. This cathartic value of music should not be lost sight of in an attempt to glorify it with the crown of Rasa.

In another study by Sadagopan (1976) discusses about the aesthesics of some Karnatic musical forms.

Raga and Rasa on the basis of Gestalt principles was studied by Narendra Rai Shukla 1974. Gestalt psychology maintains that all our mental experiences occur in structural plans with inherent dynamic organization Likewise the patterns in music appear not only in the tone-to-tone motion, but equally in tonal groups, subgroups, supergroups at several planes of a multi-tired architecture, bringing out inherent a symmetricality of its details.

In another study, Ashok Kelkar studied about the understanding "Music and the scope for psychological probe" in 1977. In this study the author discusses the norms to recapitulate musical culture such as musical taste, music making, musical ideology, musical activity. The study also
elucidates ideas regarding the (i) understanding the musical artist, (ii) understanding the listener and his activities, (iii) understanding the formation and reformation of a musical sensibility, and (iv) understanding the musical work in all aspects.

Rajagopalan and his associates (1976) studied about, a scientific analysis of the appeal of some Ragas in Karnatic music. In this study an attempt is made to measure or quantify the appeal of some of the ragas of Karnatic music. Six ragas have been chosen and excerpts from them, only alap, were played on the violin for two minutes each. Two groups of thirty (30) individuals each, were chosen for the study. In the two groups one having the knowledge and intricacies of music, and the other consisted of persons who had little or no knowledge of this music. In this study both groups recorded their opinions for the same music that was played to them. Six ragas were chosen out of the almost infinite ragas available. In this study violin music was played to subjects. Ragas used for the study were Hamsadhwani, Kharaharapriya, Subhapantuvarali, Kalyani, Bhairavi, Attana.

Somnath Bhattacharya studied (1980) about the “psycho analysis and creativity with special reference to musical creativity. In this study creativity has been considered as a sublimation, creativity as a restitution for the aggressive impulses creativity as a compensation for inferiority, creativity and personality etc.

Bimal Mukherjee (1980) studied about the instrumental music and social consciousness. According to him, music whether in vocal form or in instrumental form is a means of establishing communion for an individual with his creator. Music has a language of its own and the notes produced whether in abstract melody or any composition has some message to convey or some mood to create. The language of music though different, is very largely common in both the presentation of abstract music like raga alap.

Some of the new ideas in the psychology and theory of music was studied by Gerhard Alberstein in 1980.
Lloyd Slind and Evan Davis (1976) studied about bringing music to children. In this aspect the investigators conducted a study on music methods for the elementary school teacher. For upper elementary grades and junior high school children, listening to music should give pleasure, develop music skills, to develop creative music capacities, to develop knowledge of music literature, to understand music symbols and structure of music and also to understand the human feelings and expressions.

Panthasarathy (1990) studied about compassionate Diversities. Patterns in Karnatic music. The author studies and explains about the horizon in Karnatic music went on expanding down the centuries with almost never ending patterns of compositions with the result, that are now have twenty (20) varieties of which many are sung day-to-day recitals.

Gordon Epperson (1991) studied about value discriminations in Musical Aesthetics. According to the author, aesthetics examines the human need for formal expression in art, and shines a season light on the legacy of 'past' forms as well as those which are now emerging. There is the double responsibility often a source of inseparable conflict, to elucidate general principles and yet to attempt to do justice to the uniqueness of a particular work and to the indispensable element of novelty.

In another study by Surendranath (1974) musical imagery on selected Ragas was studied. In this study the investigator compares the musical imagery collected from the subjects on the selected ragas with earlier imageries of luminated musicians of the history. The following imagery came up to the subject; forest, lonely cottage, rain pouring heavily, can almost feel the shower on him. Young woman waiting near the door of the hut. I'm approaching the hut: when hearing Malkaus, there are moments, when I feel that you are just a dream, and no reality and the thick cigar smoke, gives you a figure, and you only exist in voice, and you are like rock black, and the water when it passes over a rock in the voice of yours, with liquid sounds titling and dancing colorful drops and splashing and you don't move, but move others around you, Kalyani: 'My book on the clock. Here I hear the embrace and the mad rhythm and the show why is it the picture of water and rocks always comes when I listen to music'. 
At the end of the investigation few preliminary suggestions towards understanding the psychology of Indian Music has been given.

When we hear a consonant set of tones, it creates a pleasant sensation. Dissonant notes creates unpleasant sensation. Melodic music, might be slow, fast tempo, high pitched or low pitched. Its rhythm might be simple or syncopated. All these make our body and mind relaxed or tensed as the case may be. And also there create tension and relaxation and engender an excited or a calm state of mind or certain tonal forms which have no referents.