CHAPTER SEVEN

MODERN APPROACH TO VOICE TRAINING, VOICE DISORDERS AND REMEDIES

1.1 INTRODUCTION

Voice Culture has been a disputed study in the past. At that point, there was skepticism, even derision, from leading musicians and critics, because voice culture was considered a fancy term. In the past, voice was not given priority. The argument was that the voice, with all its characteristics is something one is born with. It's God given. A voice cannot be cultivated; they insisted and scoffed at the idea.

Here there is a very important fact that "In the traditional system of teaching, scientific methods of vocal exercises were not explored. In Indian classical music the main importance was given to the learning of Music and Raga System, the whole Indian Classical music was depending on face to face learning or Guru Shishya Parampara written work was not much. That's why the teaching methods are very unstructured. We cannot put it down in points anywhere. Voice was given the least priority. Except the passing reference to the Merits and Demerits of the voice in our ancient musical literature and a few articles by musicologists in the technical journals, there was no publication dealing with the subject. But today, an effective and impressive voice is a must for singers to succeed. To succeed, a vocalist has to know the voice related important things and Voice Culture covers all the aspect in this area. That's why Voice Culture is becoming very important for a singer, one interesting thing is that it is helpful in other professionals also like Public Speaker, Actor, Teacher who ever related with impressive voice. As a concept of an ideal voice differ according to the system of Music, Western music is based on Harmony, Indian music is based on Melody, Carnatic music has its own unique style, In Hindustani music every Gharana's voice training is different ¹. Soft singing is necessary in film music. A good voice has
become imperative in the current scenario. Voice Culture covers all the voice related things for example: Voice flexibility and ensures Control of Breath, Uniformity in voice, Clarity in diction, Articulation, Resonance, Vocal range. Scientific and the medical aspect of voice culture are to maintain Voice hygiene and preserve the voice from voice disorder. But, the best voice is which is most flexible.

One can say that man began to sing since he had words. But the singing of Classical music before an audience is a somewhat different matter which cannot be effectively performed without proper training and study however liberally the vocalist may be endowed with a sweet voice. The voice training methods eliminate the defective elements and make the voice rich, steady and flexible. The art of voice culture is necessary so as to bring out the smooth transition of Swaras and Alankara, artistic twists and various tonal shades which are the principle requisites of a good singing. In present date scientific methods of voice training need to be introduced for further improvement with our traditional voice training method. For Indian Classical Music it is a new subject to research and from the point of application. The future of Voice culture depends on the understanding of this subject and availability by common enquiry.

Voice culture is the coming together of an understanding of science (to a high degree) with the physical feel of the voice. We will have to understand the terms anchoring, focusing, erection and fusion of the voice itself.

Voice Culture, this term is familiar in Western music. The anatomy of voice and music both go together. The students are admitted to music classes only after undergoing initial steps of physiology and psychology test and at every stage, the team monitors the use of the voice by the student. In India, all this is still a rarity. There is at least a two hundred year solid tradition of rationalized voice engineering, with various schools of thought. The western musicologist Enrico Caruso (1873 to 1921), has done tremendous job in voice culture area. He was considered the greatest tenor of his day and probably of all time. The book – “The Scientific Culture of the Voice” Written by noted laryngologist and student of voice P. Mario Marafioti, this historic volume, dedicated to the great tenor and published shortly after Enrico Caruso death, explains clearly and scientifically how Caruso achieved his phenomenal voice production. The book is replete with practical instruction and advice for aspiring singers.
The greatest tenor of his day, Caruso possessed remarkable breath control and enunciation along with an intense quality of vocal pathos. This guide explains clearly and scientifically how singers can emulate his phenomenal vocal production. Written by a noted laryngologist who devoted most of his career to Caruso, it includes detailed diagrams, instructions, and exercises. The careful study of Marafioti’s book gives the idea of voice training of Western music, the correct singing technique, vowel modification and other such musical nuances at the technique. The clarity of voice, resonance, and overall production of voice and excellent instruction how to gain a resonance that fills a very large house (without a microphone). Any serious vocal student can get benefits of proper vocal technique. The Western world has studied voice in relation to the both, the music as well as anatomy and physiology; in Western music everything is structured. In New York, an institute called Voice Forum has an ENT specialist, a psychologist, a physiologist and a musicologist working together to treat the voice.

For Indian classical music voice culture is a new subject for research and study. How the great vocalists maintain their voices as they are able to sing well even to today? With them voice culture might have been instinctive. An analysis is needed to get to the crux of it. In Indian Classical Music the oral traditions have never had any knowledge of the actual anatomy and physiology of the singing voice. The Sangeet Ratnakara, do speak they draw from Yoga traditions and do not reflect insights within the oral musical traditions. Only in the context of voice the Sarira’s Guna Dosha had been described. Traditionally, Hindustani Classical musicians, especially Dhrupad singers had certain insights into voice culture or voice engineering. There has always been an understanding that a voice has to sound and behave in a certain manner to be able to do justice to the demands of the music. These are the few techniques of training like 'kharaj bharna', 'mandra saptak sadhana', various kinds of 'paltas' are all voice development techniques. Desired qualities in a voice have been identified as optimum resonance (bulandgi), timbral attractiveness (taseer), 'roundness' (golai), tonal continuity over the range, steadiness, maximization of range, volume, ability to modulate volume, ability to articulate vowels (especially akaar) and consonants correctly without distortion, Most of all, the ability to execute techniques, especially virtuoso techniques like tans. 'Kharaj bharna' and 'mandra saptak sadhana' have been uniformly recognized as techniques for 'opening' the voice, opening up the range and volume, optimizing tonality in Hindustani and Carnatic Music system. All this ability is inculcated progressively through the lengthy abhyasa gana or Swar Sadhana system. But, the
main purpose was the presentation of music not the Voice. That why the attention was not paid to the cultivated voice. The knowledge of the actual anatomy and physiology of the singing voice was not practiced. The oral traditions have never had any knowledge of the actual anatomy and physiology of the singing voice. Voice culture has been a relevant and necessary subject whether the style of music is Carnatic, Hindustani or Western; the fundamental techniques for good voice production can apply effectively to all systems. Once the fundamentals are understood, we should then strive to work on the specific aspects of that music system and strengthen the foundations. In the 20th century, musicologists like Prof B.R. Deodhar had studied voice engineering and made an attempt to work with Indian musicians³. Many vocalists also have reportedly had chance encounters with Western vocalists or voice teachers and have perhaps benefited from some tips and techniques. However, there has been no proper and substantial cross cultural work, with tangible and publicized results in the form of techniques. Voice Culture has been recognized as a necessary tool for professional excellence. Prof. B.R. Deodhar had done some work in this area. According to Deodhar instructions, Hindustani vocalist Smt Nirmala Gogate (a performing artist) she was making efforts on her voice strictly. As a result there was considerable improvement in her voice and she gave ample evidence of this improvement in her performance in March, 1977 and again at Pune in November, 1977 when she gave a concert at the Sawai Gandharva Music Festival. Since from their point of view, there are many, who have heard her earlier performances therefore; this noticeable improvement in her voice was a miracle. This is indeed an important landmark in the history of Hindustani classical music. But according to Prof. Deodhar who believed that more such experiments need to be conducted. Prof Peter Calatin and his teacher Prof Fredirick Bruckner Ruggerberg, Germans settled in Rep of Ireland were the famous voice experts. They had spent their lives finding the right voice techniques. Late Prof Fredirick Husler, a genius of great merit. They had been teaching this technique to some Indian musician. Smt Rukmini Devi Arundale was an Indian theosophist; dancer and choreographer of the Indian classical dance form of Bharatnatyam had invited Prof Peter Calatin and his teacher Prof Fredirick Bruckner Ruggerberg to India in the early 80's. Prof Peter Calatin was in India and he met different top professional musicians for interactions and counseling sessions. A lot of valuable work was done, where musicians were keen to have some techniques of voice improvement. Ludwig Pesch is known for his penchant for the unusual. Ludwig Pesch was a teacher in a music school in Germany. He is known for his penchant for the unusual. A
chance listening of the music of the short lived genius Ramnad Krishnan brought him to India where he did a stint at Kalakshetra in Chennai. For a Westener used to the idea of elaborate and systematic voice training, this would be astounding. Pesch attempts to revive what He would like to think as traditional theories and techniques of voice training in India by drawing parallels between the theory of chakras” in the Yoga system and the Western theory of placing the tone. This is largely reproduced from an article written by an orientalist, Friedrich Brueckner that Pesch translated into his theory. Western music has the capacity of producing the correct techniques of Voice Culture. While Indian music, has the capacity to produce a principal emotion or a mood in a raga. Indian classical music basically stirs our spiritual sense and discipline, a longing for realization of the self salvation. Singing is a worshipping act and not an intellectual exhibition of mastery on the technique of a raga. In Western culture, singing is a formal and secular exercise, and does not involve piety or devotion as compared to Indian music.

In India, the pioneer voice expert, Dr. S. A. K. Durga, has toiled hard to bring awareness of the subject of Western vocal science to India. Today, for a lot of musicians, her name symbolizes voice culture and that is a beginning of enquiry. Carnatic vocalist Aruna Sayeeram, she started this enquiry about voice culture. She finally found Prof. Eugene Rabine in Germany and worked out a basic understanding for herself. Her understanding and development of her own voice can be an excellent example of what voice science can contribute. The other voice experts are – late Pt. Sunil Bose, Shri T. V. Gopalkrinan, Ananth Vaidhyanathan, Prof. T. Unnikrishnan and many more. From the expert view of these musicians and voice expert, we can get benefit from Western and Indian music, both the systems especially in context of voice culture, which require scientific and traditional methods. The human voice is comparable to a wind instrument. The human voice has high resilience. Knowing the natural technology of sound production it is easy to use it. It is the body that produces music. Push it to its capacity and then give rest. It will take care of itself. If our voice get troublesome as we sing our techniques requires examination.

Indian classical music is founded purely on empirical basis so far, relying on the pernicious system of trial and error, along this a proper understanding of physiological mechanism is very important to growth of this subject Voice Culture.
The study of Voice Culture has within it a great deal that is quite outside the province of music. Physiology, physics and psychology contribute a great deal towards the deduction of scientific methods of voice training.

The traditional principles of voice production were excellent – that is why we have had great Indian voices that have manifested Indian music with such dramatic impact – *Ustad Bade Ghulam Ali Khan, Pt Bhimsen Joshi, Ustad Amir khan, M. S.Subbulaxmi*. Their principles of placement, mechanics and the principles of gamaka were outstanding.

Voice is the most wonderful musical instrument. Hence, it is up to us to cultivate and preserve this instrument. Voice culture is a combination of traditional and scientific methods to improve the singing voice. In Western music, there is no vocal music training without voice training. They are completely integrated. Among good musicians, voice training is integral to music training within the perimeter of the style. Voice management is an art. It is a combination of physiological and psychological procedure. Singers should understand the nature of their own voice and assess the range within which they can comfortably sing. The ear is to be trained to identify their own voice and avoid singing in false voice. One should not try to mimic another singer, as it would give rise to stress on his or her voice. A healthy mind, positive thinking, right diet and proper exercise will help a singer maintain the voice better. Periodical consultation with a team of voice specialists will help in identifying vocal problems early and treatment can be initiated at the appropriate time.

In India from the ancient time, Human Voice and production of voice are related to theory of chakras and the Yoga System. If we really understand the metaphysics and quantum of music, we will be able to understand why Yoga works on the voice in a faster, better and holistic way than the general, traditional and the modern techniques of Voice culture. Though modern and traditional music and speech techniques are quite fruitful, as their approach is not a holistic one (that which affect quantum level and all our Koshas), they have many limitations and work more in a temporary style on the voice than making a permanent culturing. The primary source of energy to produce the voice is the smooth flow of air provided by the breathing apparatus. All varieties of voice modulation and the voice leveling can be mastered only when we have enough breathing capacity. Incorrect breathing can cause disorders in voice production.
Hence *Yoga* and *Pranayama* are integrated in the voice training methods with a set of Asanas, Breathing exercises, Bandhas and Meditation specially selected and developed. The importance of voice culture from the days of Natya Sastra and later treatises, Musicians should not just read it as theory, but understand the necessity to retain quality voice. He enlisted some techniques of voice production. One should use the anatomy and physiology of voice. The three components of voice production are resonatory, phonotory and respiratory; which help in relaxing the muscles and ligaments of the larynx, give energy for singing and ability to manipulate effectively to get the required voice. He drew a distinction between amateur singing, professional singing and folk singing.

Though not trained, professional singers have their own ways of maintaining their voices and the folk singers have their natural ways of modulations. Three voice registers and ability to sing in three octaves is necessary. By constant practice, careful tonal placement, pranayama and adherence to the basic principles of voice culture, a singer will easily be able to sing any kind of music.

### 1.2 INFLUENCE OF YOGA AND PRANAYAMA

The traditional way of culturing the voice and developing musical ability is by learning from a teacher or in an institution, it is a process of several years. The purpose and origin of words, language and music seen in all cultures is similar. Language was developed for expression and communication. Music was developed for expression and communication. Music was developed to praise the lord or for spiritual evolution. The basic principles and effects of music and yoga are universal. Yogis were aware that music soothes the mind. They were aware that when speech was linked with a musical voice it was more effective. Music was developed as a Yogic Practice in particular and also as complimentary to many other Yogic practices. Yoga is the melody and harmony of the unseen inner self and music is the melody and harmony of the unseen outer self. So, both can harmonize our inner and outer self together. Yogis have experienced that the cosmic life energy is received through the energy plexuses i.e. Chakras, to receive extra energy. This quality of Yoga makes it different from all other forms of exercises. It is only because of these
subtle qualities of Yoga the latent musical potential is stimulated, developing the musical ability of a musician, within unbelievably short span of time.  

Voice disorders do exist and proper yoga techniques can be used as remedies to get over these problems. There are three basic pillars in the production of the voice and these aspects concern phonetics, resonance and the respiratory system. The voice analysis of many singers has shown how they exert excessive pressure that would only cause immense strain on the voice. There are three registers from which the voice is produced chest, head and false and recommended the use of all these as that would help in proper landing of the voice and also result in tremendous improvement in voice quality.

Any yogic breathing, after due consultation could follow a pattern where the principle of long breathing should be followed with proportional changes in inhalation and exhalation, leading to a gradual way of learning the method of retaining the breath inside the system. A thumb rule for those who care about their voice could be the method of quick inhalation and regulated exhalation. This should influence our voice and the ultimate aim should be a golden voice that would be like a tightened string.

Three breathing techniques; Kapalabhati, Nadi Shodhana and Bhashthrika for the best musical sound. For yoga our physical body has an equivalent at the quantum level. Quantum is defined as the basic unit of matter or energy. It is from 10,000,000 to 100,000,000 times smaller than the smallest atom. All the quanta are made of vibrations, visible and invisible, measurable and immeasurable vibrations. Energy which is invisible when needed takes physical or material form. Physical structure can be changed faster and more easily by working on the quantum levels. Thanks to modern research and technology. Now, it has become easy to believe such facts laid by ancient Indian texts as they are being proven by contemporary technology. All these facts were not only known but, mastered by saints.

The Practitioner of Yoga, Yogis, Ayurvedacharyas (doctor of Ayurveda), and Ancient Musicians, all of them practiced Yoga for Voice thousands of years before modern discoveries.

Yoga explains these facts

Twenty eight (28) principle Elements, Koshas, Chakras, Nadis
Yoga further explains different practice to be followed to bring about the intended changes. It is these subtle quantum levels that hold greatest energy potentials. Yoga can heal these quantum levels and many changes including voice changes can be brought about on the gross level also. To change the texture of our Voice, we should learn and practice the Asanas and Breathing exercises.

**Practical use of “Yoga” in Voice Culturing:**

These are the few important aspect of Yoga which is directly beneficial for voice production. All these practice help to expand the Awareness step by step, from physical to spiritual level. The practice of Dharana (concentration) and Dhayana (meditation) help a singer in many ways. The mind becomes balanced and clam. There is a positive change in personality and character. This helps in making the voice more confident and smooth, steady and rich in texture.

These are few practical Kriyas, Asanas, Bandhas, Mudras, Pranayams and Omkara for voice production and singing.

1. **Kapalbhati:** In this Kriya we have to do forceful, fast and jerky active exhalation using the abdominal muscles and inhalation is passive. This cleanses the full respiratory and voice tract and is stimulation to the brain cells. It cleans the sinuses. It stimulates the nerves of the larynx, pharynx, and brain. Thus, helping better breathing capacity, good resonation, better memory and good synchronization needed for voice production and singing. It activates the Mooladhar and Swadhisthan Chakras. This helps to improve the energy level in the voice and builds confidence. It improved the depth in the voice and it cleanses the abdominal resonators.

2. **Jivhamooladhauti:** The root of the tongue is given a light massage by the first and second finger and then twisted. This helps to make the tongue flexible and tongue root strong, helping in good articulation.

3. **Kapalarandhradhauti:** With the help of the thumb, the area between the soft and hard palate is given a light massage. This rejuvenates the inner walls of the mouth making them softer for better articulation. It stimulates the *nadi* and nerve endings near the soft and hard palate. This kriya also helps to keep the nasal and head sinuses clean for good resonation and sweeter voice.
4. **Jivha Bandha or the Tongue Lock:** the tongue is rolled backward and its tip is made to touch the soft palate. This Bandha strengthens the tongue, its root and the upper larynx. It regulates the flow of Prana in the head region just above the hard and soft palate. It develops the *Lalana Chakra* bringing a blissful tone to the voice.

5. **Jalandhar Bandha or the Chin Lock:** The chin is pressed on the chest. Either positive or negative pressure is built at the throat region. It is helpful in any musical activity and ability, as it energizes the Throat Chakra. It regulates the flow of Prana in the throat and mouth region and the upper flow of prana in the throat and mouth region and the upper chest region.

6. **Udiyan Bandha or the Diaphragm Lock:** The abdominal muscles are contracted upwards, locking the Prana at the diaphragm. It helps in strengthening the diaphragm and the abdominal muscles. This helps control of the breath and develops steadiness in the voice. It also helps to bring depth to the voice, i.e., develops lower harmonic resonance. It helps to develop the required enthusiasm for a singer and his/her voice.\(^\text{11}\)

**Pranayam:**

The word *Pranayam* is made of two words Prana and Ayam. *Prana* means the life force energy and *Ayam* means the regulation or balancing. So Pranayam means the balancing and regulation of Prana. It is done with the help of Breath as breath is that form of Prana which can be handled and understood with ease. Pranayams are special breathing techniques which help the singers.

**Omkar:**

*Omkar* is a combination of sound *A* (as in along), *U* (as in put) and *M* (as in sum). It is pronounced in many different ways for achieving different results. It is pronounced basically as *A+U+M* as three sounds or as *O=M* (as in dome) as two sounds, with different variations.

In *Omkar Shatakam*, Bhakta Vamana explains the manner in which Omkar should be pronounced or chanted. Bhakta Waman says:
Santatam tailadhaaraiva dlrghagha ntaaninaadavat Dlrgham pranavamuchchaarya
Gambhiramshankhanaadava t

Meaning: Omkar should be pronounced with long consistency like a continuous and uniform flow of oil, should sound like a continuous ringing of a bell, sand should deep and resonant like the sound of a couch.

When Omkar Sadhana is practiced with the help of a tuned tanpura (Indian drone instrument) it helps a singer in many ways. It helps to strengthen the lung capacity. It improves all the disorders of voice. It makes the voice sweet and melodious. Apart from this, it strengthens the mind by removing its stresses.

Yoga improves the Agni and Vayu (Prana) of the body and this forms the core of Nada importance of a straight spine or sitting straight for proper voice production. Some of the Asanas are very important like Virabhadrasana and Surya Namaskaram. The importance of chanting Om is also important while doing the Asana and this would improve the voice and breathe control. Asanas like Janushirasasana are supposed to cure stammering. The practice of Pranayama exercises are said to be very good for musicians. Kapalabhati helps in the breath control; Sheetali helps in preventing the dryness of throat. Bastrika clears the nose and throat passage. All the Asanas and Pranayama exercises should be practiced only with the help of a trained Yoga teacher.

Meditation and Voice Culture, Meditation is an essential part of Indian Culture from ancient period and it can be used in advance voice culture also.

1.3 PSYCHOLOGY AND VOICE CULTURE

Many disorders of voice and failure of successful performance are due to psychological reasons. One has to condition the mind to get rid of all negative aspects of mind. Singing is an aesthetic calling of the mind, the feeling or the emotional output comes to a particular level where psychophysical parallelism begins to operate and then only the person is able to produce the
voice. Eena Garnetti, speaking at an international congress described the production of the voice psychophysically as follows:

When the body is musically coordinated on a more or less mean tension and all the orificial suctorial activities are correlated functionally on a happy mean in relationship to breath, the physical energy of the individual form finds vent in vocal expression. This constitutes the natural exercise of the body for establishing the vocal instrument and inducing the phenomenon of voice.  

Voice is not conditioned by throat alone but is the result of a series of interacting forces, a substantial part of which are more psychological than physiological. When producing a vocal note, the singer first gets a mental picture of the note. It awakens the motor centers, which control the currents necessary for the approximation and changes in the tension of the vocal cords for the required tone. Hearing is the main sensory stimulation for the act of voice production. When one hears the sound, the impression is being made in the brain. The brain then induces the muscular effort necessary to produce the particular sound through different impulses. Though the singer does not actually feel the muscular movement of the vocal cords in the throat when producing a note, the mental image which is obtained through hearing, guides him for the producing of the note with correct modulation of pitch and intensity.

In musical and phonetic literature, the mind is said to excite the bodily fire which in turn strikes the air. The air which resides in Brahmagrahthi comes upwards, passes through Nabhi Hruth Kantha and Murdha: brings forth the voice:

Atma vivaksamano ayam matala prarayate manah

Dehastam vahnimahanti sa prarayati marutam

Brahmagranthoisthitai so aym kramadrudhwapate caram

Nabhihrtkanthamurdhasthesvabhir bhavyati dhvanism

The mind gives impetus to the fire which derives the breath out:

Manah kayagnimahanti sa prarayati marutam
The act of speech and song is neurological connected with the development of the cerebrum in man. The nervous system of man is almost the same like that of dog and completely alike of an ape except the cerebrum of the brain. Therefore Mind is the head of the singing department and those who lack the proper cerebral organization find it difficult to produce correct vocal tone. 

_P.L. Batra_, in his book *Science and art of Indian music* remarks as follows:

Vocal music is the most difficult type of music to produce. Strictly speaking it is of the Tat Sushir variety, i.e. Exhaled air. No frets or other possible mechanical aid being available for regulating the length of the chords for production of different notes. The desired result is achieved by mental control.

Singing is an activity of physical and mental movements. It is a synchronization of our physical and mental state. So, physical and mental fitness are necessary for good and happy singing. Sometimes experience reveals that overwhelming emotions affect our voice controlling capacity. Negative emotions also affect the tonal quality of our voice. Negative emotions are a hindrance to the growth of voice production. Mental fitness leads to a better synchronization of the singing activities.

The art of singing is the musical expression of emotions suggested by our thought and imagination. Almost the whole of humanity has a desire to sing. The vocal mechanism the singer’s instruments is also fit enough to produce musical sounds but it is so astonishing to find that many do not sing well. The fault is mainly upon the defective mental perception of the musical sounds than the conditioned of the mechanism of the voice. Research experiments have shown that in many cases vocal impurities such as short vocal compass and unsteadiness of the voice result more from psychological factors than physiological factors. A very soft and low tone is also due to the suppression of emotions. Depression and sorrow effect the lowering of the soft palate which makes the voice nasal. As vocal music is imbued with live emotions and feelings, it has become the most difficult type of music.

Psychologically, the voice acts as a mirror to the inner feelings. Normally a habitually tensed person produced his voice at a higher pitch level than a relaxed person. Sharp and nasal voice is generally produced by a nagging person. A hard hearted person produces a harsh and guttural tone.¹⁷
The kernel of singing is based upon self confidence and purity of mind. The singer must be confident that god has bestowed him/her a good voice and by practice can bring the instrument under his/her control. He must also have an extreme love and devotion to the art of singing, which give him more strength to practice assiduously. Dissatisfied and dejected attitude towards singing should never be present. Shyness and fear should be eliminated as the emotional tension affects the ability to control the vocal organs. Raja Someshwar in his valuable work *Manasollasa* prescribes seven qualities to be possessed by a good singer. Among which *Nirbhayata* or fearlessness is included. The verse runs as follows:

*Sariram ca dhvanim medhyao proudhigamaka kousalam*

*Talanyata nirbhayata gatu hu sapata mahagunah* \(^{18}\)

Self consciousness during singing makes the singer feel shy and nervous which in turn prevents the person from clear concentration. Physiologically, self consciousness induces tension which makes the tongue to go back partly closing the throat. The nasal passage at the back also becomes too stretched and the jaw stiffens which cause distortion upon the voice.

Sometimes experience reveals that overwhelming emotions affect our voice controlling capacity. Negative emotions also affect the tonal quality of our voice. Negative emotions are a hindrance to the growth of voice production. Mental fitness leads to a better synchronization of the singing activities. The psychological factors that could affect the voice and hence the singing that confidence and anxiety level of a performer are two main things that decide a performance a guilt feeling, paranoia, over drugging and most important, depression can be detrimental to the condition of the voice and hence hampers the singing. The psychological important factor is the willingness to keep trying when the voice fails to hit a note. Fear and shyness prevent a singer from clear concentration. However, the most important thing is to clear mind blocks. It is the mind which controls the voice. Often the problems are to do with psychology rather than physiology. So first of these we have to believe that we have a good voice, that there is nothing really wrong with it, and to let go of worry.

Singing is interconnected not only with the whole physical organization of the body but also with feeling, attitude, intellect and intuition. The physiological mechanism Voice is controlled more by the psychological part Will. If this unconscious imitative urgent the *will* does not function
properly, there is no method or mechanism that can produce the tone\textsuperscript{19}. The singer trains the voice more by kinesthetic and coenaesthetic sensations. It is said that a good vocal teacher must also be a competent psychologist. It will be better if he advises the student to do the right things in the proper manner instead of telling him the things which should be avoided.

Regular meditations or any tension releasing exercises Regular exercise, healthy and balanced diet and are a necessity for our fitness. We should remember that the above steps are traditional and proofed method of culturing the voice help and it helps us to reach the finer points of singing by our own potential.

Usually in Voice culture Seminar or workshop the presenter provides vocal information for singers, singing teachers, colleges, universities, conservatories, corporations and those who work with or care for the voice. The information is based upon the latest voice science and medicine as well as professional experience in the field of voice training and care, most particularly in professional singing in Indian Classical music both Hindustani and Carnatic.

A classical singer or a aspiring music student, playback singer, service to music schools and programs, theatrical, film and recording producers, professional voice users, teachers of singing and all those interested in the voice, All of them can be benefited by attending Voice Culture seminar where the voice expert are providing training and techniques to relax, strengthen and develop the voice.

The human voice is not limited and that everyone can have a beautiful, expressive voice, no matter what previous experience may have been. Everyone can train his or her voice to be flexible, powerful and persuasive, full vocal expression leads to deeper personal fulfillment.

Music, especially vocal music, is healing to do and to hear and that all people have equal and free access to the musical instrument that's inside their own body their voice. Techniques of Auto Suggestion, Visualization etc are incorporated to enhance the Unconscious Competence and also to build High Self Esteem.

\subsection*{1.4 WORKSHOPS AND SEMINARS ON VOICE CULTURE}
In the seminars and workshops the voice expert explains the voice quality and explains how to preserve and to take care of the voice. Voice experts explains the scientific aspects of voice culture that, when we hear when we speak or sing is produced by the vocal folds when air is expressed through the throat into the mouth and shaped into sounds, words, and phrases through mental intention. The voice, therefore, resides in the body and is produced by a unity of body and mind, of lungs, throat and mouth. Vocal development begins with mental clarity and awareness.

The awareness of the body is vital to vocal expression and that it can be learned. Coupled with correct information, sound making becomes an intimate, immediate experience done in a deliberate manner. Finally, in these workshops the expert makes them believe that everyone can learn to have a wonderful voice and can learn to sing, and sing well.

The Workshop and the Methodology

Diagnosis of voices:

Identification of problems perceived and not perceived by the singer. Better range, hit higher notes, better tone, flexibility, speed, better timbre, better articulation, better execution of phrases. In fact their entire view of what is possible in their own voice can change.

Teaching techniques of breathing:

Attack, Vocalization, Registration etc. Evolving practice methods suitable to each voice and monitoring results.

Finalizing a set of practice methods for a reasonable period:

Voice Counseling & Voice Analysis sessions are done to improve the voice quality of singers, Overcome the voice problems of boys during the puberty period, Techniques to improve Range & Depth of the Voice, Techniques for effortless singing in all octaves without any strain, Techniques of Voice leveling to sing various styles of music, Techniques to get rid of phobias like Stage fear, Anxiety, Tension and Nervousness, Training to enhance the breathing capacity and right way of breathing, Training of Tone Placements for Voice Modulation, Knowledge of various Voice Disorders and preventive measures.20
Aspects of voice engineering on which advice/therapy can be sought: Damage to the voice, vocal chords, breathing mechanism, resonators. Range, Volume & Timbre, Voice Placement, Tonal Continuity, Resonance, Malleability (ability to execute nuances and embellishments applicable to genres of choice – e.g. Tana), Modulation & Articulation, Breathing.

Useful topics for the Voice related workshops:

Disorders of Voice
Vocal Acoustics
Articulation
Versatility of Voice
Care and Hygiene of Voice
Psychology of singing
Yoga & Singing
Vocal Fitness
Use of Alternate medicine in Voice Cure
Physiology and Anatomy of Voice production

1.5 VOICE CULTIVATION TECHNIQUES AND ANALYSIS

A vocal music teacher should ideally be teaching the student to know his/her own voice well, what the options are and how to use them for a free and healthy sound.

Singing when done with proper vocal technique is an integrated and coordinated act that effectively coordinates the physical processes of singing. There are four physical processes
involved in producing vocal sound: respiration, phonation, resonation, and articulation. These processes occur in the following sequence:

1. Breath is taken, quick inhalation slow exhalation,

2. Sound is initiated in the larynx,

3. The vocal resonators receive the sound from the vocal cord and reinforce the voice soon,

4. The articulators shape the sound into recognizable units.

Although these four processes are often considered separately when studied, in actual practice they merge into one coordinated function. With an effective singer or speaker, one should rarely be reminded of the process involved as their mind and body are so coordinated that one only perceives the resulting unified function. Many vocal problems result from a lack of coordination within this process.

Since singing is a coordinated act, it is difficult to discuss any of the individual technical areas and processes without relating them to the others. For example, phonation only comes into perspective when it is connected with respiration; the articulators affect resonance; the resonators affect the vocal folds; the vocal folds affect breath control; and so forth. Vocal problems are often a result of a breakdown in one part of this coordinated process which causes voice teachers to frequently focus intensively on one area of the process with their student until that issue is resolved. However, some areas of the art of singing are so much the result of coordinated functions that it is hard to discuss them under a traditional heading like phonation, resonation, articulation, or respiration.

Once the voice student has become aware of the physical processes that make up the act of singing and of how those processes function, the student begins the task of trying to coordinate them. Inevitably, students and teachers will become more concerned with one area of the technique than another. The various processes may progress at different rates, with a resulting imbalance or lack of coordination. The areas of vocal technique which seem to depend most strongly on the student's ability to coordinate various functions are:

1. Selection of correct Pitch
2. Extending the vocal range to its maximum potential

3. Developing consistent vocal production with a consistent tone quality

4. Developing flexibility and agility

5. Achieving a balanced vibrato

**Correct pitch selection:**

One’s natural pitch should depend on the thickness or thinness of the voice and not on the extent of the current range. A vocalist voice should traverse in two and the half octaves minimum. The voice problems will disappear by correct pitch selection.

**Strengthen the vocal muscles:**

Singing is a skill that requires highly developed muscle reflexes. Singing does not require much muscle strength but it does require a high degree of muscle coordination. Individuals can develop their voices further through the careful and systematic practice of both songs and vocal exercises. Vocal pedagogists instruct their students to exercise their voices in an intelligent manner. Singers should be thinking constantly about the kind of sound they are making and the kind of sensations they are feeling while they are singing. Vocal exercises have several purposes, including warming up the voice; extending the vocal range; lining up the voice horizontally and vertically; and acquiring vocal techniques such as legato, staccato, control of dynamics, rapid figurations, learning to sing wide intervals comfortably, singing trills, singing mellismas and correcting vocal faults.

In Hindustani Classical music there are many exercises to strengthen the vocal muscles for eg: Sur Bharna (Sā), (Standing on one note without wobbling).

**Breathing and breath support:**

Natural breathing has three stages: breathing in period, breathing out period, and a resting or recovery period; these stages are not usually consciously controlled.
Within singing there are four stages of breathing: breathing in period (*inhalation*); a setting up controls period (*suspension*); a controlled exhalation period (*phonation*); and a recovery period. These stages must be under conscious control by the singer until they become conditioned reflexes. Many singers abandon conscious controls before their reflexes are fully conditioned which ultimately leads to chronic vocal problems.

In Hindustani classical music Yoga and Pranayama are integrated in the voice training methods.

**Extending vocal range**

An important goal of vocal development is to learn to sing to the natural limits of one's vocal range without any obvious or distracting changes of quality or technique. Vocal pedagogists teach that a singer can only achieve this goal when all of the physical processes involved in singing (such as laryngeal action, breath support, resonance adjustment, and articulatory movement) are effectively working together. Most vocal pedagogists believe in coordinating these processes by (1) establishing good vocal habits in the most comfortable tessitura of the voice, and then (2) slowly expanding the range.

There are three factors that significantly affect the ability to sing higher or lower:

1. The *energy* factor — "energy" has several connotations. It refers to the total response of the body to the making of sound; to a dynamic relationship between the breathing in muscles and the breathing out muscles known as the breath support mechanism; to the amount of breath pressure delivered to the vocal folds and their resistance to that pressure; and to the dynamic level of the sound.

2. The *space* factor — "space" refers to the size of the inside of the mouth and the position of the palate and larynx. Generally speaking, a singer's mouth should be opened wider the higher he or she sings. The internal space or position of the soft palate and larynx can be widened by relaxing the throat. Vocal pedagogists describe this as feeling like the "beginning of a yawn".22

3. The *depth* factor — "depth" has two connotations. It refers to the actual physical sensations of depth in the body and vocal mechanism, and to mental concepts of depth that are related to tone quality.
McKinney says, “These three factors can be expressed in three basic rules: (1) as you sing higher, you must use more energy; as you sing lower, you must use less. (2) As you sing higher, you must use more space; as you sing lower, you must use less. (3) As you sing higher, you must use more depth; as you sing lower, you must use less.” 23

In Hindustani Classical Music Practice of Murcchana Paddhati can be used for extending the vocal range;

For example:

Sa Re Ga Ma Pa Dha Ni Sa, Sa Ni Dha Pa Ma Ga Re Sa

(Then add one more Swara)

Re Ga Ma Pa Dha Ni Sa Re, Re Sa Ni Dha Pa Ma Ga Re

Ga Ma Pa Dha Ni Sa Re Ga, Ga Re Sa Ni Dha Pa Ma Ga

Ma Pa Dha Ni Sa Re Ga Ma, Ma Ga Re Sa Ni Dha Pa Ma

Pa Dha Ni Sa Re Ga Ma Pa, Pa Ma Ga Re Sa Ni Dha Pa

Dha Ni Sa Re Ga Ma Pa Dha, Dha Pa Ma Ga Re Sa Ni Dha

Ni Sa Re Ga Ma Pa Dha Ni, Ni Dha Pa Ma Ga Re Sa Ni

Sa Re Ga Ma Pa Dha Ni Sa, Sa Ni Dha Pa Ma Ga Re Sa.

(Slowly it will increase range of the voice in all the octaves, depending on the vocal range)

Posture

Singing voice is highly affected by singer’s posture. The singing process functions best when certain physical conditions of the body exist. The ability to move air in and out of the body freely and to obtain the needed quantity of air can be seriously affected by the posture of the various parts of the breathing mechanism. A sunken chest position will limit the capacity of the lungs, and a tense abdominal wall will inhibit the downward travel of the diaphragm. Good posture allows the breathing mechanism to fulfill its basic function efficiently without any undue
expenditure of energy. Good posture also makes it easier to initiate phonation and to tune the resonators as proper alignment prevents unnecessary tension in the body. Vocal pedagogists have also noted that when singers assume good posture it often provides them with a greater sense of self assurance and poise while performing. Audiences also tend to respond better to singers with good posture. Habitual good posture also ultimately improves the overall health of the body by enabling better blood circulation and preventing fatigue and stress on the body.

There are eight components of the ideal singing posture:

1. Feet slightly apart
2. Legs straight but knees unlocked
3. Hips facing straight forward
4. Spine aligned
5. Abdomen flat
6. Chest comfortably forward
7. Shoulders down and back
8. Head facing straight forward

In Hindustani classical music, Yoga with a set of Asanas can improve the posture of a vocalist.

**Some practical suggestions:**

1. An ability to sing in all the three octaves without any strain by correct voice production. (use of chest, head voice and diaphragm, the method of quick inhalation and regulated exhalation will help)
2. Strengthen the vocal muscles by practicing Kharaj Bharna and Paltas.
3. Practice in different musical scales will help to train the voice in different sound frequency. (For example Bilawal, Kalyan, Bhairav, Bharavi etc.)

4. Correct Breathing exercises will increase the capacity of the singer to sustain a note for a longer period. (Yoga, Pranayam Om helps in correct breathing)

5. To express variety of Phrases and Ornaments; kan, khatka, gamak, expression of Aalaap and long Taan, Correct voice modulation or voice throw is useful. (the beautification of ornaments comes from voice modulation and throw of the voice)

6. Practice of producing Notes in different volumes and air pressure to enhance the aesthetics of singing raga and other vocal forms. (Reducing the volume and air pressure in higher octave and according to the compositions helps in aesthetics. Open throated singing is recommended for youngsters to discover their range, and this should be done optimally and carefully. Open throated singing has to be practiced for short times only in subdued voice, Light music where depth of the voice should be maintained but pressure and volume have to be reduced even while reaching the upper registers.

7. The singing voice completely depends on the correct pronunciation of vowels A AA EE O and consonants; it is an important part of compositions. For this a singer need cultured voice.

8. To develop the sense of rhythm and the correct place of notes, practice of all the Paltas with different Talas will train the voice.

9. To get control on voice and with different rhythm.

10. By controlling certain muscles and ligaments of the Phonatory, Respiratory and Resonatory systems of the body, one can develop the depth and range of the voice.

11. In scientific point of view these are three basic pillars in the production of the voice. These aspects concern phonetics, resonance and resonance and the respiratory system. It helps in relaxing the muscles and ligaments of the larynx which give energy for singing and ability to manipulate effectively to get the required voice.
12. To analyze and practice the different patterns of Aalp and Taan, the merukand gayaki’s pattern can be introduced from the beginning, incorporate then in simple straight ragas to improvise aalaap.

13. Psychology will help to get out from negative aspects like Stage fear, Anxiety, Tension and many other phobias.

14. Many disorders of voice and failure of successful performances are due to psychological reasons. One has to condition the mind to get rid of all negative aspects of mind. Techniques of Auto Suggestion, Visualization etc are incorporated to enhance the Unconscious Competence and also to build high Self Esteem.

15. Vocal Management for preserving the voice to keep away a variety of vocal problems. The prevention from voice disorder is to keep away a variety of vocal problems, which are formed through Vocal habits and Vocal abuse.

All aspects related to the human voice, its production, maintenance, problems & cure and the aesthetic aspects of using the voice for perfect music production. All the experts from the medical, musical and spiritual fields should give their insightful inputs to make Voice Culture topic useful, the importance of correct usage and maintenance of vocal cords by addressing the lack of awareness among musicians about voice management techniques.

Scientific studies suggest that singing can have positive effects on people's health. A preliminary study based on self reported data from a survey of students participating singing found perceived benefits including increased lung capacity, improved mood, stress reduction, as well as perceived social and spiritual benefits. However, one much older study of lung capacity comparing those with professional vocal training to those without, and failed to back up the claims of increased lung capacity. Singing may positively influence the immune system through the reduction of stress. One study found that both singing and listening to music reduces the level of stress.
hormones and increases immune function. A multinational collaboration to study the connection between singing and health was established in 2009, called *Advancing Interdisciplinary Research in Singing* (AIRS).

Voice culture is a subject which covers all the aspects to make Voice beautiful by the help of Science, Physiology, Psychology, Physics, Yoga and the main purpose of a beautiful Voice for Music.

As *Prof. B. R. Deodhar* remarks, the principles of any science in any country are the same. Hence the scientific methods of training the voice can be incorporated carefully with our present day empirical methods for further improvement on our voice training system.

Although the Hindustani classical music has been enriched with many exercises to develop the skill of singing, along with the traditional methods, a comprehensive study of the scientific aspects related to voice cultivation will help the singers to analyze his/her own voice and to manipulate the vocal apparatus for the perfect voice modulation. Genetically determined factors of the vocal mechanism cannot be changed but with the help of the correct voice techniques one can manipulate them to make the voice more melodious. Voice Culture helps to train the voice to sing the different Vocal Forms easily. So, Today Voice culture is not a subject to study, it has become a necessity for every vocalist to succeed in the field of music.

The suggestion is that all the new methods of voice culture should use with the traditional methods. Our Hindustani classical music is already enriched with many traditional voice training methods are enriched and very good, so if we combine both methods, then the good results will come out. Today voice culture is a necessity for a vocalist for improving the voice quality. In the West, singers generally never use their voice for different styles as we do in our system. If a singer sings in soprano or bass, for an opera or a chorus, they just stick to that. In India, as singers use their vocal chords for different types of singing, it needs more attention and voice culture helps by scientific and traditional methods. Genetically determined factors of the vocal mechanism cannot be changed but with the help of the techniques one can manipulate them to make the voice more melodious.
1.6 VOCAL DISORDERS AND REMEDIES

Voice Disorder and Remedy is probably one of the most critical topics to throw light on the principal piece of vocal music the medical, musical and practical problem faced by musicians how these could be remedied. Some common problems faced by musicians such as strain in the voice, breathlessness, dryness and an uneasy sensation leading to frequent clearing of throat.

The following statement of M.M. Babcock regarding the treatment of the voice is worthy of reproduction:

“Voice culture is an individual matter and the methods of treatment of the voice must be as carefully differentiated according to the needs of the individual as the methods of treatment of any other bodily ailment”.  

The care of the Voice box, voice production and the lack of awareness of the science behind these in singers; for this the understanding of the anatomy of the larynx in simple terms and also the functioning is very necessary. The fact that voice training can help in the production of voice from a bad larynx was a revelation. Voice training is predominantly aimed at compensatory mechanism. The winter season is the worst period for Singer as this time of the year is most conducive for peak allergies, respiratory infections and maximum mucous secretion. The conditions under which the voice fails to function, ENT problems like **allergy pharyngitis**, **fungal pharyngitis**, **post nasal discharge**, **sinusitis**, **acid reflux**, **nodules** and **tonsillitis**. Air pressure applied through the diaphragm from the abdomen and the lungs creates a vibratory effect of sound waves through resonator chambers, he explained. When the vibration passes through the various chambers of the resonators which act more or like the sound mixtures provided to the human body by nature. How one channelizes the sound through these resonator chambers is what matters.

**Some causes:**

Energy, space behind the tongue and depth decide voice power. Singers, announcers, speakers and choreographers use their voice to a great extent. The upper respiratory track can be affected by air pollution, sinusitis and cancer.
According to the speaker, functional disorder occurs in many cases because of incorrect ways of breathing, lack of practice and lack of knowledge about the importance of maintaining the vocal chords. Wrong way of applying air pressure is the main reason that cause improper vocal loading.

The disorders of the voice can be classified into two types: Organic and Functional. Organic disorder is mostly due to medical problems including infection, thyroid, tonsils, sinusitis and bronchitis, and even genetic. This disorder needs medical intervention. Only physician can cure organic disorder.

Functional disorders are mainly due to wrong usage of throat resulting in hoarseness. Nodules (similar to pimples) can be formed in the vocal chords and if not attended to at once, can lead to voice damage. The functional disorders are again classified into Throatiness, Unsteadiness, and Breathiness, Break in voice registers, Voice fatigue, White tone, Huskiness, and Register weakness and uneven voice.

**Throatiness:**

The tension of jaw neck and chest muscles or position of the tongue makes the voice throaty.

**Cure.**

The rigidity of the jaw muscles can be removed by holding the head slightly downwards with the chin inwards. Moving the head gently from side to side and dropping the jaw down and back the singer gets the relaxation of jaw and neck muscles. The tongue should not be drawn up and back or down and back or completely relaxes which constrict the throat passage. The tongue should be kept flat so that the tip of the tongue touches the back portion of the lower gum ridge.

**Unsteadiness:**

Wobbling, results because of incorrect breathing, fear and self-consciousness.

**Cure.**
The diaphragmatic type of breathing should be adopted to have control over the breath capacity (more breath capacity). The only way to avoid shyness, fear and self-consciousness is to concentrate highly upon the music, which has to be sung.

**Breathiness**

The failure of the perfect closure of vocal process induces a small amount of air to come out through the larynx without being modulated by vocal cords. This air leakage generates a strong frictional noise and accompanies the tone produced by the vocal cords.

*Cure*

Humming exercises helps to avoid this problem, soft singing of disjointed notes on the vowel *Ah* also help to remove this defect.

**Break in voice registers**

Incorrect breathing and improper resonance cause a break in the voice quality while passing form one register to another. The singer is tempted to force his voice in the high register.

*Cure*

The correct type of breathing should be used, during inhalation the lower ribs expand and the diaphragm descends more widely. This action enlarges the breath capacity. In this process of exhalation the abdomen contracts owing to the pressure of the descent of the diaphragm. The resonators for the lower tones should not be forced while singing higher notes and the singer should not attempt to bring down the resonators of the higher notes while singing lower notes.

**Voice fatigue**

This may be due to physical disorder or functional disorder, Lack of breath control; tongue interference and unsuited pitch level also cause this defect.

*Cure:*

Breath control is the only remedy.

a. Inhale and exhale the breath through the nose slowly and steadily.
b. Inhale air deeply, place your hand on the diaphragm, and exhale slowly and gently. Press your hands to expel the maximum air from lungs. Repeat this several times.

c. Start vocalizing Ah on an easy pitch and sustain on the note until you feel uneasy. Then hum on the same pitch. You can notice that humming can be done for a longer period than vocalizing.

d. Bring down the scale and produce the lowest note audible in your voice range. Sing Madhyama from that note and fix that as your Adhara Sadhja.²⁹

**White tone**

Incorrect methods of closing the glottis by the swallowing muscles make the larynx press against the hyoid bone.

**Cure**

There should be ample space between the larynx hyoid bone. The use of correct breathing helps the singer to avoid the use of swallowing muscles. Also Humming exercises keep the soft palate and uvula to be loose and supple which in turn make the outlet of air pass through the nose.

**Huskiness**

Excessive tension of the vocal cords makes the voice husky or harsh.

**Cure**

Proper relaxation of the muscles, which tense the larynx mechanism, must be obtained. Current pitch level resonance and type of breathing can help to overcome this problem.

**Register weakness**

Incorrect adjustment of the resonators is the main cause for the register weakness and lack of breath control also cause register weakness.

**Cure**
Smaller vowel size should be resonated for the lower notes to be rich while large vowel size must be used for the higher notes to be rich. When the pitch lowers, greater number harmonics resonate in the throat and mouth. Correct pitch quality depends upon the control of the vowel size.

Increased breath capacity is necessary to sing the lower notes with power. 30

Uneven voice

If the size and shape of the mouth is varied too often in producing the voice the tone quality varies. Incorrect breathing and improper resonance also make the voice uneven.

Cure

The Vowels Ah, Ee and Eh should be produced with same position of the modification of the sound and should result only through the placement of the tongue in different positions. For the production of Oh and Oo, the lips should be kept in a rounded position. The teeth should always be well separated for the production of vowels. 31

At last, We cannot deny the importance of proper eating habits, the types of food that can be taken and avoided. Acid reflux or acidity (in layman’s terms) causes voice irritation and hence hampers the singing process acid reflux could worsen because of hiatus hernia, obesity and poor eating habits. On the whole, it gives a new perspective to the origin of voice problems that one would never have thought of.

In ancient times, Vocal hygiene has been describe in Narada Shiksha and Sangita Lakshankara and they believed that these methods can keep the voice fresh, sweet, and clear and keep the organ of articulation in proper form. Today, Scientific methods of voice training employ different techniques on anatomical factor to train the voice and maintain the voice hygiene to preserve the voice from voice disorder.

Use of medicine in Voice Cure

For any voice related problem the medicine should be taken in care of a doctor or –Laryngologist and ENT specialist. A phono surgery is conducted (if there are untreatable nodules or mass lesions identified by the laryngologist. For Alternate medicine, Homeopathy, Siddha and
Ayurveda in the treatment of voice can be taken. For conservative exercise, we can conduct psychoacoustic tests and make the singers work on vowels and nasal consonants. This is similar to the Aakaar Sadhakam suggested by professional music teachers. In fact, voice is the indicator of many physiological problems. Immediate attention to voice related problems will avoid major voice defects.

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