Research Paper
Impact Factor: 3.072

IJBARR
E- ISSN -2347-856X
ISSN -2348-0653

MUSIC IS AN ART AND SCIENCE

Prof. P.Thenmozhi
Associate Professor and Head, Department of Home Science, Seethalakshmi Ramaswami College, Tiruchirappalli,,India.

Music is an art form whose medium is sound and silence. Its common elements are pitch (science which governs melody and harmony), rhythm (and its associated concepts tempo, meter, and articulation), dynamics, and the sonic qualities of timbre and texture. The word derives from Greek μουσική (*mousike*; "art of the Muses").The creation, performance, significance, and even the definition of music vary according to culture and social context. Music ranges from strictly organized compositions (and their recreation in performance), through improvisational music to aleatoric forms. Within the arts, music may be classified as a performing art, a fine art, and auditory art. It may also be divided among art music and folk music. There is also a strong connection between music and mathematics (Talas-counts). Music may be played and heard live, may be part of a dramatic work or film, or may be recorded. Music is a miniature of the harmony of the whole universe, for the harmony of the universe is life itself, and humans, being a miniature of the universe, show harmonious and inharmonious chords in their pulsations, in the beat of their hearts, in their vibration, rhythm and tone. Their health or illness, their joy or discomfort, all show the music or lack of music in their life.Tanjore is to Carnatic Music where Germany is to Western Music.

Music is the language of our soul and the soul is the residence of our spirituality. Our lives are filled with music everywhere on the Internet, television, radio and iTunes which we cannot avoid hearing. What is wonderful about music is that it helps us to concentrate or mediate independently of thought - and therefore music seems to be the bridge over the gulf between **form and the formless**. If there is anything intelligent, effective and at the same time formless, it is music. It also creates that resonance which vibrates through the whole being, lifting the thought above the denseness of matter; it almost turns matter into spirit, into its original condition through the harmony of vibrations touching every atom of one's whole being. That is why Music is being used as an art & science, for good cause like, in hospitals(to treat patients),working place(to achieve more target),temples(to cherish peaceful soul&to do pooja well),during driving(to have safe journey &to reach the destination),prisons(to make them realize & to become a good person)and so on. Our Famous Poets & Musicians were endowed with a deep knowledge of the languages Sanskrit and Telugu, as also the Vedas, Puranas, Mathematics and Astrology and with inborn sense of Manodharma and they were Lakhsya – Lakshana - Sahitya Vidwans par excellence (Ex: Sri Tyagaraja, Sri Syama Shastri, Sri Muthusami Dikshitar, Shri Trimurti Smt M. S. Subbulakshmi and so on). Music is the one incorporeal entrance into the higher world of knowledge, which comprehends mankind but which mankind cannot comprehend.

Key Words: Importance of Music, Health benefits, Treatment, Happiness & Life.

INTRODUCTION

"I still believe in the things I can't see… I believe in the things I can feel: Music, Love, and God." – Lina Loy

Music is a science and an art form whose medium is sound and silence. Its common elements are pitch, rhythm , dynamics, and the sonic qualities of timbre and texture (science).The word music derives from Greek μουσική (*mousike*; "art of the Muses"). Within the arts, music may be classified as a performing art, a fine art, and auditory art. It may also be divided among art music and folk music. There is also a strong connection between music and mathematics. To many people in many cultures, music is an important part of their way of life.20th-century composer John Cage said any sound can be music&"There is no noise, only sound". Today, Japan is becoming a super-aged society, with senior citizens already constituting over 21% of the population. A study had been conducted to clarify the relationship between the Quality of Life (QOL) of elderly females and their current oral functions and experiences of music and art education in early life. The results showed that those who have received art education as part of their careers over an extensive period since early life have higher levels of cognitive function, QOL, physical activity, social activity, life satisfaction and live with a positive attitude.

ARTISTIC MUSICAL INSTRUMENTS DEPICT OUR LIFE STYLE

Instruments such as the seven-holed flute and various types of stringed instruments(Yazh), such as the Ravanahatha, have been recovered from the Indus Valley Civilization archaeological sites. India has one of the oldest musical traditions in the world—references to Indian classical music (*marga*) are found in the Vedas, ancient scriptures of the Hindu tradition. It is monophonic, and based on a single melody line or raga rhythmically organized through Talas. Silappadhikaram by Ilango Adigal gives so much information about how new scale can be formed by modal shift of tonic from existing scale. Hindustani

music was influenced by the Persian performance practices of the Afghan Mughals. Carnatic music is popular in the southern states& is largely devotional; the majority of the songs are addressed to the Hindu deities. Indians are popular & mastery in playing varities of musical instruments. We are fortunate to have wonderful Musicians & Instrumentalists amongst us. Music was an important part of social and cultural life in Ancient Greece. Music was an important part of education, and boys were taught music starting at age six. Western Music then started becoming more of an art form with the advances in music notation.

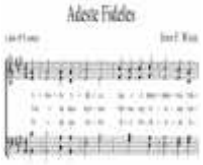
The music of the Classical Period looked to the art and philosophy in to the ideals of balance, proportion and disciplined expression. Importance was given to instrumental music. It was dominated by the sonata,theconcerto,andthe symphony.The increasing popularity led to a growth in both the number and range of the orchestras.Art-Romantic music turned the rigid styles and forms of the Classical era into more passionate and expressive pieces. It attempted to increase emotional expression and power to describe deeper truths or human feelings. Romantic composers grew in idiosyncrasy, and went further in the syncretism of different art-forms (such as literature), history (historical figures), or nature itself with music. Romantic love was a prevalent theme in many works composed during this period.


20th-century music


Chinese Naxi musicians


Ornament


Composition


Notation

With 20th-century music, there was a vast increase in music listening as the radio gained popularity and phonographs were used to replay and distribute music. The focus of art music was characterized by exploration of new rhythms, styles, and sounds. The invention of sound recording and the ability to edit music gave rise to new sub-genre of classical music. Jazz& rock music evolved and became an important genre of music. The sound of rock often revolves around the electric guitar , drums, and keyboard instruments such as organ, piano, analog synthesizers and digital ones and computers. Along with the guitar or keyboards, saxophone, violin, veena, flute and blues-style harmonica are used as soloing instruments. Performance is the physical expression of music. A performance can either be rehearsed or improvised. All cultures include a mixture of both, for rituals such as the modern classical concert, religious processions, music festivals or competitions. Aural tradition-Many types of music, such as traditional blues and folk music were originally preserved in the memory of performers, and the songs were handed down orally, or aurally (by ear). A culture's history may also be passed by ear through song. Ornamentation- In a score or on a performer's music part, this sign indicates that the musician should perform a trill—a rapid alternation between two notes. In general, art music notation expected the performers to know how to add stylistically appropriate ornaments, such as trills and turns & how to use tempo changes, accentuation, and pauses (among other devices) to obtain this "expressive" performance style.

PRODUCTION

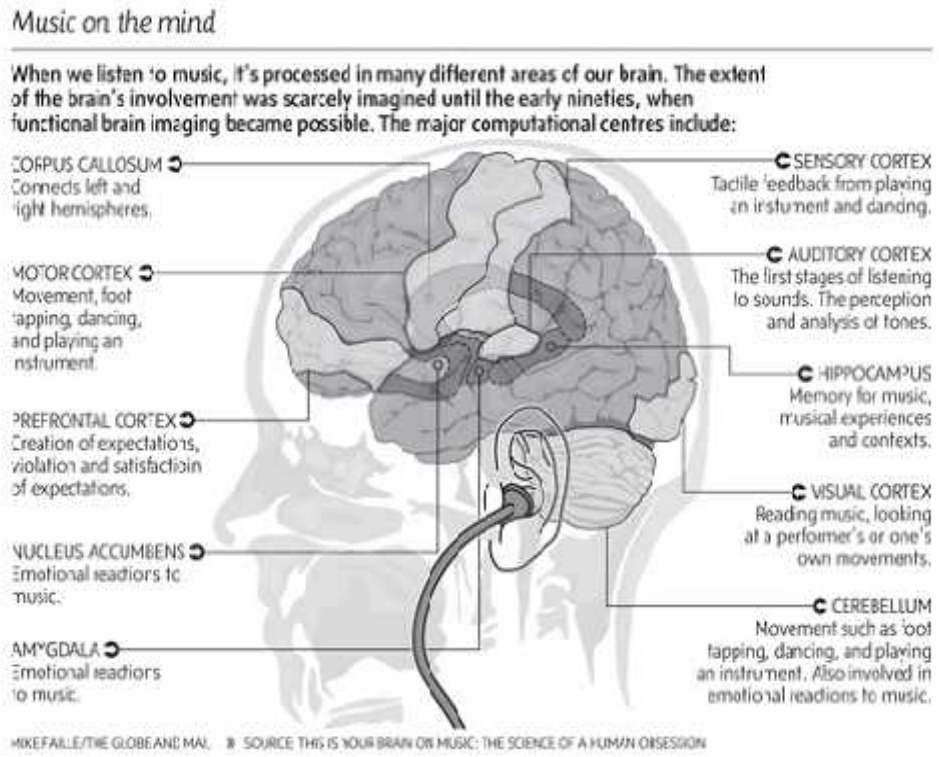
Music is composed and performed for many purposes, ranging from aesthetic pleasure, religious or ceremonial purposes, or as an entertainment product for the market place. Professional musicians are employed by a range of institutions and organizations, including armed forces, churches and synagogues, symphony orchestras, broadcasting or film production companies, and music schools. Professional musicians sometimes work as freelancers, seeking contracts and engagements in a variety of settings. Composition-"Composition" is often classed as the creation and recording of music via a medium by which others can interpret it (i.e., paper or sound). Music can be composed for repeated performance or it can be improvised: composed on the spot. The music can be performed entirely from memory, from a written system of musical notation, or some combination of both. Notation-Sheet music is written representation of music. Music theory encompasses the nature and mechanics of music. In a grand sense, music theory distills and analyzes the parameters or elements of music – rhythm, harmony (harmonic function), melody, structure, form, and texture. Some have applied acoustics, human physiology, and psychology to the explanation of how and why music is perceived. Music has many different fundamentals or elements of art. These are, but are not limited to: pitch, beat or pulse, rhythm, melody, harmony, texture, allocation of voices, timbre or color, expressive qualities (dynamics and articulation), and form or structure. Pitch is a subjective sensation, reflecting generally the lowness or highness of a sound. Rhythm is the arrangement of sounds and silences in time. Harmony is the study of vertical sonorities in music. Musical texture is the overall sound of a piece of music commonly described according to the number of and relationship between parts or lines of music, monophony, heterophony, polyphony, homophony, or monody. Timbre, sometimes called "Color" or "Tone Color" is the quality or sound of a voice or instrument. Form is a facet of music theory

that explores the concept of musical syntax, on a local and global level. Traditionally, the aesthetics of music explored the mathematical and cosmological dimensions of rhythmic and harmonic organization. In the eighteenth century, focus shifted to the experience of hearing music, and thus to questions about its beauty and human enjoyment of music. It is often thought that music has the ability to affect our emotions, intellect, and psychology; it can assuage our loneliness or incite our passions. There has been a strong tendency in the aesthetics of music to emphasize the paramount importance of compositional structure; however, other issues concerning the aesthetics of music include lyricism, harmony, hypnotism, emotiveness, temporal dynamics, resonance, playfulness, and color .Modern music psychology aims to explain and understand musical behavior and experience. In addition, music psychology is a field of research with practical relevance for many areas, including music performance, composition, education, criticism, and therapy, as well as investigations of human aptitude, skill, intelligence, creativity, and social behavior. The primary auditory cortex is one of the main areas associated with superior pitch resolution. Cognitive neuroscience of music is the scientific study of brain-based mechanisms involved in the cognitive processes underlying music. These behaviors include music listening, performing, composing, reading, writing, and ancillary activities. It also is increasingly concerned with the brain basis for musical aesthetics and musical emotion. Cognitive musicology is a branch of cognitive science concerned with computationally modeling musical knowledge with the goal of understanding both music and cognition. The use of computer models provides an exacting, interactive medium in which to formulate and test theories and has roots in artificial intelligence and cognitive science. Psychoacoustics is the scientific study of sound perception. More specifically, it is the branch of science studying the psychological and physiological responses associated with sound (including speech and music). It can be further categorized as a branch of psychophysics. Evolutionary musicology concerns the "origins of music".Ethnomusicology is an individual's culture or ethnicity plays a role in their music cognition, including their preferences, emotional reaction, and musical memory. Socio musicology- The sociological study of music, sometimes called socio musicology, is often pursued in departments of sociology, media studies, or music, and is closely related to the field of ethnomusicology. Music is experienced by individuals in a range of social settings ranging from being alone to attending a large concert. Media and technology- Computer music-The music that composers make can be heard through several media; the most traditional way is to hear it live, in the presence of the musicians, in an outdoor or indoor space such as an amphitheatre, concert hall, cabaret room or theatre. Live music can also be broadcast over the radio, television or the Internet. In industrialized countries, listening to music through a recorded form, such as sound recording or watching a music video, became more common than experiencing live performance, roughly in the middle of the 20th century. Sometimes, live performances incorporate prerecorded sounds. For example, a disc jockey uses disc records for scratching, and some 20th-century works have a solo for an instrument or voice that is performed along with music that is prerecorded onto a tape. Computers and many keyboards can be programmed to produce and play Musical Instrument Digital Interface (MIDI) music. Audiences can also become performers by participating in karaoke, an activity of Japanese origin centered on a device that plays voice-eliminated versions of well-known songs. Most karaoke machines also have video screens that show lyrics to songs being performed; performers can follow the lyrics as they sing over the instrumental tracks. Internet - The advent of the Internet has transformed the experience of music, partly through the increased ease of access to music and the increased choice. Digital storage costs are low, so a company can afford to make its whole inventory available online, giving customers as much choice as possible. Another effect of the Internet arises with online communities like YouTube and Facebook, a social networking service. Professional musicians also use YouTube as a free publisher of promotional material. YouTube users, for example, no longer only download and listen to MP3s, but also actively create their own. Business: The music industry refers to the business industry connected with the creation and sale of music. It consists of record companies, labels and publishers that distribute recorded music products internationally and that often control the rights to those products. In the 2000s, the increasing popularity of listening to music as digital music files on MP3 players, iPods, or computers, and of trading music on file sharing sites or buying it online in the form of digital files had a major impact on the traditional music business Some companies did well with the change to a digital format, though, such as Apple's iTunes, an online store that sells digital files of songs over the Internet. Music education: The incorporation of music training from preschool to post-secondary education helps in getting basic skills such as concentration, counting, listening, and cooperation while also promoting understanding of language, improving the ability to recall information, and creating an environment more conducive to learning in other areas. Academia: Musicology is the study of the subject of music. The earliest definitions defined three sub-disciplines: systematic musicology, historical musicology, and comparative musicology or ethnomusicology. Graduate degrees include the Master of Music, the Master of Arts, the Doctor of Philosophy (Ph.D.) (e.g., in musicology or music theory), including the Bachelor of Music.. These degrees provide students with grounding in music theory and music history, and many students also study an instrument or learn singing technique as part of their program. Zoo musicology is the study of the music of non-human animals, or the musical aspects of sounds produced by non-human animals. Music theory is the study of music, generally in a highly technical manner outside of other disciplines. More broadly it refers to any study of music, usually related in some form with compositional concerns, and may include mathematics, physics, and anthropology. Music therapy-Many studies proved that Music cures diseases & being used as a therapy & a tool to solve many problems. Music therapy is an

interpersonal process in which the therapist uses music and all of its facets—physical, emotional, mental, social, aesthetic, and spiritual—to help clients to improve or maintain their health. Music therapy is used with individuals of all ages and with a variety of conditions, including: psychiatric disorders, medical problems, physical handicaps, sensory impairments, developmental disabilities, substance abuse, communication disorders, interpersonal problems, and aging. It is also used to improve learning, build self-esteem, reduce stress, support physical exercise, and facilitate a host of other health-related activities. Music has long been used to help people deal with their emotions &that music and dance were critical in treating mental illness, especially melancholia. He noted that music has an "excellent power to expel many other diseases" and he called it "a sovereign remedy against despair and melancholy." In November 2006, Dr. Michael J. Crawford and his colleagues also found that music therapy helped schizophrenic patients. In the Ottoman Empire, mental illnesses were treated with music.

THE SURPRISING SCIENCE BEHIND WHAT MUSIC DOES TO OUR BRAINS

"Without music, life would be a mistake" --Friedrich Nietzsche



Of course, music affects many different areas of the brain.1. Happy/sad music affects how we see neutral faces: In fact, our brains actually respond differently to happy and sad music. Even short pieces of happy or sad music can affect us. Something else that's really interesting about how our emotions are affected by music is that there are two kind of emotions related to music: *perceived emotions and felt emotions*. This means that sometimes we can understand the emotions of a piece of music without actually feeling them, which explains why some of us find listening to sad music enjoyable, rather than depressing.2. Ambient noise can improve creativity: A moderate noise level is the sweet spot for creativity. The moderate noise levels increase processing difficulty which promotes abstract processing, leading to higher creativity**.** In other words, when we struggle to process things as we normally would, we resort to more creative approaches. In high noise levels, however, our creative thinking is impaired because we're overwhelmed and struggle to process information efficiently.3. Our music choices can predict our personality: Take this one with a grain of salt, because it's only been tested on young adults, but it's still really interesting. In a study of couples who spent time getting to know each other, looking at each other's top 10 favorite songs actually provided fairly reliable predictions as to the listener's personality traits**.** The study used five personality traits for the test: openness to experience, extraversion, agreeableness, conscientiousness, and emotional stability. Interestingly, some traits were more accurately predicted based on the person's listening habits than others. For instance, openness to experience, extraversion, and emotional stability were the easiest to guess correctly. Conscientiousness, on the other hand, wasn't obvious based on musical taste.4. Music can significantly distract us while driving: Another

study done on teenagers and young adults focused on how their driving is affected by music. Drivers were tested while listening to their own choice of music, silence or "safe" music choices provided by the researchers. Of course, their own music was preferred, but it also proved to be more distracting: drivers made more mistakes and drove more aggressively when listening to their own choice of music. It seems that unfamiliar, or uninteresting, music is best for safe driving.5. Music training can significantly improve our motor and reasoning skills: General assumption is that learning a musical instrument can be beneficial for kids, but it's actually useful in more ways than we might expect. One study showed that children who had three years or more musical instrument training performed better than those who didn't learn an instrument in auditory discrimination abilities and fine motor skills**.** They also tested better on vocabulary and nonverbal reasoning skills, which involve understanding and analyzing visual information, such as identifying relationships, similarities and differences between shapes and patterns. These two areas in particular are quite removed from musical training as we imagine it, so it's fascinating to see how learning to play an instrument can help kids develop such a wide variety of important skills. Similar research shows this correlation for exercise and motor skills in the same way, which is also fascinating.6. Classical music can improve visual attention: It's not just kids that can benefit from musical training or exposure. Stroke patients in one small study showed improved visual attention while listening to classical music.7. Music helps us exercise**:** Listening to music competes for our brain's attention, and can help us to override the signals of fatigue**.** When we listen to music, it can actually help us to use our energy more efficiently. A 2012 study showed that cyclists who listened to music required 7% less oxygen to do the same work as those who cycled in silence**.**

CONCLUSION

Music is having healing effect and conduct energy into our bodies and minds. Learning to play an instrument can help kids develop such a wide variety of important skills. Much of reading music is about analyzing and understanding visual information. "Without music life would be a mistake". Therefore Music is itself life & one cannot exist without the other. The three main functions of music and the arts in culture are: Performance, Exaltation and Prophetic. Performance is given from man to man. Exaltation is a different use of music and the arts, in that it is directed towards an object of worship. Music and the arts are successful tools. Prophetic music and art is rather God speaking through the art-form to an individual or society. It is not originated from imagination or choosing, but rather by divine intervention. Through Music everyone can lead a successful life. Thus we can conclude that not only music is an art & science but it is Life and everything.

REFERENCES

1. Richard O. Nidel, *World Music: The Basics*, p. 219.
2. Wallin, Nils L./Björn Merker/Steven Brown (1999): "An Introduction to Evolutionary Musicology." In: Wallin, Nils L./Björn Merker/Steven Brown (Eds., 1999): *The Origins of Music*, pp. 5–6. ISBN 0-262-23206-5.
3. Treatment of Mental Illnesses With Music Therapy – A different approach from history.
4. Irwin Edman. Arts and the Man: A Short introduction to aesthetics.