RESEARCH REVIEW JOURNALS
Volume-04
Issue-02
February-2019

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com[UGC Listed Journal]

Learning Indian Music through Technological Tools

Harmohan Sharma

Assistant Professor, Department of Computer Science, Multani Mal Modi College Patiala, Punjab, India

ARTICLE DETAILS

Article History
Published Online: 20 February 2019

Keywords
Technology, Music, Software.

ABSTRACT

The modern age is the age of technology. This fact is reflected in every aspect of modern times. Be it fine arts, education, agriculture, sports or any other field, rapidly evolving technological advancements can easily be seen everywhere. Music is also one of these aspects which have been very highly influenced by the new evolution of technological tools. In this paper, we will see how music and musicians reacted to the upcoming technologies, how we adopted many of them to our benefit, and how newly emerging trends and traits of science and technology gave momentum to the evolution of many new activities and new thoughts in the world of music, and finally, how these technological tools have been used for the betterment of teaching and learning experience concerning music. In this paper, we will deal with technological tools which are getting popular amongst the music-learning community presently.

1. Introduction

Indian music – vocal as well as instrumental – has a long and continuous tradition. It is said to be divine and saintly. Our music is associated with spiritual values.

However, with changing times, the outlook towards Indian music keeps on changing too. This change is more visible in learning and teaching scenario. Music pedagogy has undergone tremendous transformation. From the Guru-Shishya tradition, passing by institutionalized music teaching, now students are taking the aid of technological tools to learn music.

The modern age is the age of technology. This fact is reflected in every aspect of modern times. Be it fine arts, education, agriculture, sports or any other field, rapidly evolving technological advancements can easily be seen everywhere. Music is also one of these aspects which have been very highly influenced by the new evolution of technological tools. The entry of electronic tools has transformed the way classical arts have been taught, learnt and performed [1].

In this article, we will see how music and musicians reacted to the upcoming technologies, how we adopted many of them to our benefit, and how newly emerging trends and traits of science and technology gave momentum to the evolution of many new activities and new thoughts in the world of music, and finally, how these technological tools have been used for the betterment of teaching and learning experience concerning music. Electronics has been one of the most rapidly developing branches of technology, which provides new resources and scope for music. We shall study the role of various electronic devices in the field of music.

Presently, music is included in the education system. Music is a fine art wherein the medium of expression is sound. Music is hence, based on different kinds of sounds which are perceivable through the human ear. However, all available sounds should not and could not be utilized in creating music. Here, in India, the sounds which are considered to be useful for music are titled, 'Naada'. Naada consists of all musical sounds.

There is one more element which is important for the understanding of the concept of music. This element is the visual appeal. In the context of Indian music, music has been defined as the arts of singing, playing on musical instruments and dancing – all three arts combined.

Thus, to Indian music, music consists of not just musical sounds. Dancing is also included in Indian music. In the Western world, dance is considered separate and distinct from the arts of vocal as well as instrumental music. These influences are visible – the visual element included or excluded. It makes no difference.

Through the definition of music stated above, we can submit that music consists of these three basic elements:

- Vocal Music (Geet)
- Instrumental Music (Vadya)
- Dance (Nritya)

2. Advancements in Science and Technology

All the above branches of music have benefitted from the electronic devices which have been and are being invented with the help of advancements in science and technology. The following electronic devices are discussed in this paper:

- Microphones and voice amplifiers
- Audiovisual recording and playing devices
- Invention of the computer
- Electronic musical instruments
- Software /apps relating to music

2.1 Microphones and voice amplifiers,

These tools increase the magnitude as well as the quality of musical tones. Learners of music use microphones to listen to the final output of their musical tones. While singing or playing musical instruments, we can listen to what is going to the audience. The needed adjustments can be made accordingly. Students of music need to be taught the proper use of the microphone. It is an integral part of music concerts. Without the proper use of microphones or amplification of sound, any concert can be spoiled. In the present era, learning how to use a microphone is a vital part of music pedagogy. Therefore, during the initial training of music, this aspect of using microphones must be given emphasis.

2.2 Audiovisual recording and playing devices

Technology has given us the facility to reproduce music as it is, through its audiovisual recordings. Thomas Alva Edison [2] is associated with the invention of sound recording. In due course, the video recording technique was also invented through the contribution of various eminent physicists. The technology of audio/video recording has been very helpful in learning various musical skills. Students can record the music lessons and can listen to them again and again. They can record their voices or instrumental performances to listen to them and improve. When one listens to his/her performances, he/she can analyse the faults very minutely and rectify the same. We can record practical lessons and listen to these lessons repeatedly. Video recording is very important for dance lessons. Students of dance can video record the dance lessons and view the same again and again for his/her improvement. He/she can improve his/her capabilities through this process.

The technique of recording has evolved manifolds. We have various recording apps which can adjust the tempo (rhythm) as well as pitch independently of each other. We can change the pitch without altering the tempo, and alter the tempo without influencing the pitch. This is a very helpful facility. If the teacher is singing on a pitch which does not suit the pitch of the student, he/she can record the lesson, alter the pitch to his/her convenience and thus can practice the lesson. Likewise, if some notes are hard to recognize on account of the fast tempo, we can lower the tempo and listen to the musical piece easily.

Recording techniques have played a great role in learning and teaching music. Great artists, who are not easily available, can be made available through the recording of their performances. One can listen to the same raga sung by various artists of various Gharanas and compare the styles effectively. One can adopt the style according to one's taste. We can compare different music styles through this technique. Therefore, during comparative studies, this technique is very useful. For instance, if we wish to compare the singing style of two artists or wish to compare the instrumental performances of two different instrumentalists, we can get the recordings of the artists and draw a comparison.

2.3 Invention of the computer

The present age is said to be the computer era. In every sphere of our lives, the computer has its role to play. Needless to say, we are getting more and more addicted to devices. Or to put it in another perspective, we are falling prey to the computer in the same manner as the spider traps its victims in its web. The 3W's, (World Wide Web) have proved to be the cobweb entangling all of us through the illusion of "virtual reality". Computer technology is greatly influencing the creation of new music [3].

Terhardt [4] has mentioned that in a few years, there would be offered electronic (computer-controlled) successors of the eighteenth and nineteenth-century mechanical music boxes, capable of (re)producing any kind of music under the control of a human 'conductor' (and listener); computers which automatically 'compose' and realize music (perhaps vast amounts of trivial music for commercial purposes); computers which 'listen' to the performance of one or more human players and immediately respond by producing musical sounds in a partly deterministic, partly random way; software for home computers providing support to music education and practicing.

Not so long ago, downloading music was slow and impractical for anyone but a few advanced users. MP3 hadn't yet become a buzzword, and the phrase "burn a copy" evoked images of book burning rather than sharing a CD with a friend. The abilities of a PC or Mac to record and edit music were severely limited by the speed and storage space available at the time, and only a few pioneering musicians attempted it. But technology progressed rapidly, and today, anyone with a personal computer and an Internet connection can enjoy the remarkable benefits of downloadable music and streaming audio and forever leave behind the inconveniences of records, tapes, and CDs.

Given below are a few examples of what we can do with the help of a personal computer:

- ✓ We can turn our computer into a digital jukebox that is capable of holding our entire music collection.
- ✓ We can carry that music collection around with us in a device the size of a pack of gum.
- ✓ We can very easily sample and download music from the Internet from any corner of the world; the only condition is that a device and an internet connection should be available.
- ✓ We can listen to Internet radio stations of our choice from all over the world.
- ✓ Nowadays, we can stream music from our collection to any room in our house.
- ✓ Computer these days has become a kind of sound mixer/recorder. We can use our computer as a digital recorder and mixer.
- ✓ Transferring data from the old analogue format to the digital format is very easy. We can digitize, clean up, and preserve audio from our old records and tapes.

We can do all this and much more, tackling in minutes tasks that used to take professional engineers hours--and we can do it all without expensive equipment and a technical degree.

A computer has various uses in the field of music. Whatever advantages have been depicted under the headings relating to Microphone and amplifying devices as well as the

audiovisual recordings, can be availed through a computer. A PC has a microphone/headphones as well as a recording facility. Therefore, we can record our musical performances and simultaneously listen to them as well. If we are connected to the internet, we can listen to various artists and learn from their performances. Thus, the process of learning music can be made very easy and efficient through the use of a PC.

2.4 Electronic musical instruments,

Electronic music instruments also give us an easy and frequently available option as a student of music begins his/her training in music. Firstly, one of the popular musical instruments, which is available electronically, and which is being used very frequently, is the electronic version of Tanpura or Tamboora as many of us call it. Tanpura is a very essential musical instrument. For any kind of classical music, Tanpura is a vital accompaniment. The actual Tanpura is very costly and hence the students cannot afford to buy it. That is why the electronic version of Tanpura is often used in place of the actual Tanpura. In some cases, stage performances also have this version of actual Tanpura. During concerts, many artists prefer to use electronic Tanpura. It can be easily tuned to different scales. Presently, it comes in various models and numerous functions, including that of a “SwaraMandal”. Learners of music use this instrument very often.

Likewise, the electronic version of Tabla is also getting popular during practice sessions. To practise with the accompaniment, earlier, the students had to engage a tabla player, who had to be paid. It burdened the students who could not bear the costly training in music. The electronic version of tabla has given great relief to music learners as they no more need to engage a tabla player. Electronic Tabla comes in different models and with various functions. It has most of the popular talas. Some of the models come with an edit function which enables us to create our tala.

An electronic tuner is also available in the markets which helps to tune musical instruments in our choicest scales. These tuners are helpful for music students who need to find their scale and tune Tanpura or other instruments in a suitable scale. Previously, for this scale tuning, one had to depend on a harmonium. For more information on electronic musical instruments, different web links [5] are available. Experiments have continuously been going on with electronic musical instruments. Every year, new models of electronic tables and electronic tanpura are released. Students of music are benefitting from these instruments.

Moreover, keyboard instruments are coming in electronic versions. These keyboard instruments are called synthesizers. Many big companies are creating and marketing synthesizers. Yamaha, Casio, Rolland etc. are some such companies. These instruments are used mostly during light music sessions. Also, in studio recordings, fusion music with Indian classical music use such keyboards.

2.5 Software /apps relating to music

Presently, many apps and software are being developed for Indian music. Some of the apps are used on mobile phones. Both popular versions of mobile phones, namely, android and iPhones, are developing apps which suit Indian classical music. Nowadays, we can download electronic Tabla on our mobile handsets and use the same for practice sessions. Likewise, electronic Tanpura can also be downloaded. Electronic tuners are also available on mobile phones.

Besides this, a PC software, called SwarShala, is very useful for students of music. SwarShala provides us tabla as well as the tanpura accompaniment in different talas and pitches. It has electronic Dholak which can be played during light music compositions. Through SwaraShala, we can take our practice lessons. For practice sessions, we no more need any live accompaniments. This is a great facility for learners of music.

SwarShala is a wonderful tool for anyone interested in Indian classical music, whether beginner or advanced, by providing means of learning, practising and composing this style of music. Such a user will be able to create fully customized practice sessions with the required instruments, cycles, pitch, tempo, acceleration, etc. and select them to be played at wish.

World music composers will also acknowledge SwarShala as the best tool to create tracks of most Indian instruments for their compositions. Version 3.1 provides them with a Tracks view on which they can sequence rhythmic/melodic components to create long tracks which can then be exported as wave or MIDI files. Also, those who are more familiar with western notation will be able to switch to a standard Piano Roll view.

This software can be used with windows operating system all versions. Presently, different kinds of SwarShala versions [6] are available. Some of the models are as under:

- ✓ Hindustani Edition with up to 35 North Indian instruments and a Hindustani Tutorial
- ✓ Carnatic Edition with 18 South Indian instruments and a Carnatic Tutorial
- ✓ Xtra Edition with 74 instruments from all over India and both Tutorials. These different versions can be ordered at the company's online shop.
- ✓ Currently only Full & Xtra Editions are available on the Mac platform. However, all versions are available on windows.

3. Conclusion

Before the 20th century, when the technological boom began, it was very difficult to learn music. There were selected few, who would train the music learners. However, these Ustads were very inaccessible. They hardly agreed to take the student under their guidance. Gradually, due to technological tools, the music got accessible. Through the mediums of Radio and TV, students began to listen to classical music. As time passed by, more and more music books were written and printed. The institutionalization of music education began a new era in the field of music pedagogy. Then came digital technological tools like those I have discussed. These tools made music learning easier and more entertaining. Presently, online music classes have become a rage. Many e-Gurus are

giving music lessons on the internet. Pt. Ajoy Chakrabarti [7] an eminent Guru is available on the internet. Many more e-music classes can be found through an internet search. In light of the above facts, I can submit without any hesitation or beyond a doubt that technological tools have made learning music very student-friendly.

References

[1] https://www.thehindu.com/features/friday-review/music/Technology-takes-over-tradition/article13372202.ece

[2] https://www.britannica.com/biography/Thomas-Edison

[3] Bevins, Garrett, "Computer technology in modern music: a study of current tools and how musicians use them" (2013). Capstone Projects and Master's Theses. 367. California State University, Monterey Bay

[4] Terhardt, E. (1982). Impact of Computers on Music. In: Clynes, M. (eds) Music, Mind, and Brain. Springer, Boston, MA.

[5] https://www.radel.in/

[6] http://www.swarsystems.com/SwarShala/

[7] https://ajoychakrabarty.com/

