

EVOLUTION AND IMPORTANCE OF ELECTRONIC DEVICES AND TECHNOLOGY IN THE LEARNING PROCESS OF HINDUSTANI CLASSICAL VOCAL MUSIC

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ABSTRACT

The Guru-Shishya Parampara has long been the foundation of classical vocal music learning. It provided a deep experiential learning. The roots of this Guru-Shishya tradition was based on oral transmission of knowledge. The students were required to stay with the Gurus and learn vocal music. The learning process also involved learning certain musical instruments such as Tanpura, Tabla, and Harmonium to facilitate vocal music learning process. As the music education started to evolve, especially from 20th century, new technological advancements occurred particularly electronic devices such as electronic Tanpura and electronic Tabla. By providing constant drone (Tanpura) and rhythmic support (Tabla), it provided the privilege of doing the Riyaz independently with flexibility. Later many other technological developments happened in the form of mobile applications and Artificial Intelligence that revolutionized music learning. This article throws light on the evolution and the role of these electronic devices and technological applications in the process of vocal music learning. It explains about the advantages and disadvantages of using these technological tools.

Keywords: *Guru-shishya parampara, Hindustani classical music, electronic music instruments.*

Introduction

The knowledge of music, especially Hindustani Classical Music was traditionally passed from generation to generation orally in a system called Guru-Shishya tradition. There was no other source of music learning except the Guru. As the passing of knowledge was in oral format, there was limited reliance on written texts or scriptures. Learning process was facilitated by the physical music instruments such as Tanpura, Tabla etc.. With the passage of time and evolving technology, there had been significant developments in the learning process of Classical vocal music. New innovations in the field of electronics and communications took place. Likewise there had been significant creations and innovations with respect to electronic music instruments and technological tools especially from 20th century. This article explains about the evolution of these electronic music instruments and their role and importance in the present musical atmosphere.

The Traditional model

The Hindustani Classical Music has its roots in the traditional guru-shishya parampara. The music earning students used to stay with the Gurus and learn the music in the traditional Gurukul system. Gurukul means “Abode of a Guru. Students were supposed to live with the Guru at his residence or in a shelter on the premises” [1]. The Guru would teach his pupils whenever it was convenient to him, and they were on the other hand expected to serve the Guru and his household in suitable ways. The musical instruments being the facilitators for the vocal music learning process, were indispensable in a musician’s life, especially Tanpura and Harmonium. The vocal music learner was also expected to have a basic understanding of Tabla. Riyaz which is “The corruption of the Arabic word Riyajat, which means perseverance, study, effort and learning” [2], was essential for mastering vocal music. These instruments were indispensable for a classical vocal music learner, during Riyaz sessions and also during live performances. The student learnt the technique of playing these instruments under the guidance of the Guru through Guru-Mukha Vidya i.e. “Knowledge (Vidya) obtained directly from a Guru literally from the Guru’s mouth (Mukha) “ [3] and used to accompany him/her in their practice sessions and live performances in front of the public. The students were required to carry these physical instruments with

the Guru for accompaniment. These instruments were very fragile and were required to be handled with great amount of care and concern, especially while taking them to a faraway place. As these instruments were manual instruments, it required great amount of skill to tune these musical instruments to a perfect pitch.

Challenges in handling physical musical instruments

Due to the instrument's delicate nature, it was difficult to carry the musical instruments from place to place. Normally these instruments were very costly, therefore it was not everyone's affordability to buy them. Due to its regular wear and tear, these musical instruments required regular maintenance. Normally the students were expected to accompany their Gurus in their Riyaz sessions and live music concerts. But sometimes in the absence of the performer required to hire someone to play these instruments in their live musical concerts. Great amount of care was required to be taken to keep these musical instruments in good condition. High level of expertise was required to tune these music instruments especially Tanpura & Tabla. Only with the proper guidance from the Guru and with acute concentration, one could tune these instruments to perfection. One was required to learn the technique of playing these instruments to be able to accompany,

Development in the field of Electronics

The Indian electronics industry started to take shape in 1960s, but major development happened in the 1970s and 1980s. Likewise, there were significant developments in terms of building electronic musical instruments. Radel was the first company to develop first ever electronic musical device. It started manufacturing electronic Tanpuras in the year 1979. Later they came up with the first electronic Tanpura, named "Saarang" and it was demonstrated by G. Raj Narayan at the Music Academy annual conference in December 1979. After that, many other players like Swaranjali, Swarangini etc. entered into the field creating electronic Tanpuras under their brand names. These electronic devices started to be used widely by both the streams of India music, namely Hindustani and Carnatic classical music. Shortly later, electronic Tablas entered the scene. Electronic Tablas or Taal Malas provided the rhythmic support in different Taals. With a touch of a button one could tune these electronic musical devices. There was even the facility to fine tune these instruments to suit the requirement. Initially, though the tonal quality of these initial devices developed by these companies was very mechanical, later many technological developments took place. The later device's tonal quality was more realistic compared to its older models. New features were introduced to make it more convenient and more practical. Still many technological developments are happening to make the models better. In the earlier years, one was required to buy electronic Tanpura and electronic Tabla separately. But, in the 21st century companies came up with few models which integrated the electronic Tanpura and Tabla in a single device. Though these electronic devices met with skepticism by few traditionalists, these tools gained acceptance because of its convenience, especially for solo Riyaz sessions. These electronic gadgets resolved the issue of dependency on a co-learner or another person to play these instruments. Moreover, these devices were cost effective and it was normally maintenance free. These devices were compact and was easy to be carried from one place to another. These instruments provided the convenience of practicing for long hours without any dependency. It only required uninterrupted power supply. Few of the models also provided the option of using the battery cells in case, power supply is unavailable. The concept of independent Riyaz became more stronger.

New Technological developments in the 21st century

A new revolution took place during 21st century with the advent of mobile phones. Technology reshaped how students engaged with music. Different mobile apps with respect to Tanpura & Tabla were designed

to run on these mobile devices. The electronic music devices to some extent were replaced by these mobile applications. Some of these mobile applications are free to be used and some required a payment to be made. But, compared to the physical music instruments and also the electronic music devices, these mobile applications were cheap. Due to the advent of these mobile applications it became further more affordable due its cost effectiveness. Few of the popular mobile apps are iTabla Pro, iShala, Naad Sadhana etc. With the support of the new technological developments such as Bluetooth, these applications could connect with the bluetooth speakers to produce loud and rich sound.

Later, thanks to the high speed internet, video calling tools such as Gmeet, Zoom, Teams etc. grew up significantly to facilitate online music learning. Students could connect with any desired teacher who is familiar with the online teaching around the globe. These platforms bridged the gaps of geographical barriers. These online classes partially recreated the experience of face-to-face learning to some extent. Due to this, students in the remote areas also could take quality music education in online mode. Though, music is a subject which should be learnt only through a learned Guru, in the present world, we see many platforms such as YouTube, Instagram, and Facebook etc. which facilitates vocal music learning. These online platforms served as a substantial repository of knowledge across diverse music subjects. These platforms provided the access to watch performances of many legendary maestros of music. Now Artificial Intelligence also playing a significant role in the field of music education. With the help of Artificial Intelligence, new applications are being developed that provide real time feedback on pitch perfection and rhythmic sense. Applications powered by these AI tools adapt to meet individual needs. These tools could also assess the learner's progress.

Pros and Cons of electronic music devices and applications

Pros:

- These devices are portable and light weight and they are very convenient to carry from one place to another. Even the applications could run on any smartphone and was user friendly.
- Tuning manual music instruments required great amount of skill. But with a touch of a button these electronic devices & applications could be tuned at desired pitches. The fine tuning option in these electronic gadgets helped to tune as per the requirement.
- The physical Tanpura and Tabla required to be tuned manually. Even after proper tuning, sometimes due to continuous usage it lost its tune and was required to be re-tuned in the middle of the Riyaz sessions or live performances. But these electronic devices and applications provided steady and uninterrupted accompaniment without human interference with a stable pitch.
- Physical Tanpura & Tabla instruments are typically made for a fixed specific pitch range which cannot be extended beyond a certain limit. These electronic devices and applications solved this issue and could be tuned at all pitches of male and female
- It's ideal for solo Riyaz sessions. It solved the problem of dependency on others to accompany during Riyaz sessions.
- Compared to physical music instruments, these electronic instruments and applications were normally cost effective.
- Electronic Tabla machines and mobile applications could play wide range of Taals at any desired pitches. It could also play in bass or sharp tones as per the requirement.

Cons:

- The electronic devices and applications cannot replicate the vibrant, resonant sound of the real instruments. Especially the overtones produced by these live manual instruments could never be replaced by these monotonous gadgets.
- The sound produced on these electronic instruments and applications, especially Tabla are artificial and mechanical. It lacked realistic sound and the rich tonal quality of a real music instrument.
- These technological tools, especially electronic Tabla are not suitable for live performances due to its lack of aesthetic appeal.
- The creativity is the soul of Hindustani classical music. The electronic Tabla and Tabla Apps lacked the unscripted improvisational skills of a real Tabla player. It only produced the repetitive, un-improvised loops of Taal Theka.
- Unlike physical music instrument, these electronic devices required uninterrupted power supply or power battery cells to play seamlessly. Even mobile phones required sufficient charge to play the instruments without interruption.
- Tuning the real music instruments is an art. Only with extensive skillset and proper guidance from the Guru, one gets the ability to tune these instruments. As these electronic music instruments and applications can be tuned with the mere touch of a button, they have contributed to a decline in student's ability to manually tune traditional acoustic instruments.

Conclusion

The electronic music devices, mobile applications, and Artificial Intelligence have made classical music more accessible to a larger public. Though these tools facilitated the music learning to a larger extent, heavy dependency on these technological tools disrupted the immersive, subtle learning experience. A balanced approach towards usage of these gadgets while preserving the improvisational essence of the music is needed. These electronic devices and applications especially of Tabla can largely be used for Riyaz sessions but can never replace the interactive live performance. It is important to use these electronic and technological tools thoughtfully ensuring that the sacred Guru-Shishya Parampara tradition is preserved. In conclusion, the technology can be facilitator, but can never be a replacement of the real live music instruments and the ancient traditional learning process.

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