Knowledge of Indian Music: A Study among the Students of Panjab University, Chandigarh

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ABSTRACT

Indian music has a special appeal not only within the country but also throughout the world. The traditional pattern of Indian music has survived throughout the ages and entertained not only the common people in this country but lovers of music and art throughout the world. Although there are regional styles in Indian music yet the basic unity, i.e. of ragas and talas concept is uniformly prevalent. The music of India is one of the oldest unbroken musical traditions in the world. The origins of this system go back to the Vedas. Modern historical and cultural research has also given a good perspective on the field, showing that Indian music has developed within a very complex interaction between different peoples of different races and cultures. It appears that the ethnic diversity of present day India has been there from the earliest of times.

The basis for Indian music is sangeet. Sangeet is a combination of three art forms: vocal music, instrumental music and dance. Although these three art forms were originally derived from the single field of stagecraft, today these three forms have differentiated into complex and highly refined individual art forms.

The present system of Indian music is based upon two important pillars: raga (or rag) and tala (or tal). Raga is the melodic form while tala is the rhythmic. Raga may be roughly equated with the Western term “mode” or “scale”. There is a system of seven notes which are arranged in a means not unlike Western scales. However when a westerner looks closely he sees that it is quite different what he is familiar with. Tala (rhythmic forms) is also quite developed. Many common rhythmic patterns exist. They revolve around repeating patterns of beats. Tala is equivalent to the Western concept of rhythm.

The interpretation of rag and tal is not the same all over India. Today there are two major traditions, or systems, of music. There is the North Indian, and the South Indian tradition. The North Indian tradition is known as Hindustani sangeet and the south Indian is called Carnatic sangeet. Both systems are fundamentally similar but differ in nomenclature and performance practice.

Many musical instruments are peculiar to India. The most famous are the sitar and tabla.

Music owes its origin to the Samaveda. The Veda has all the seven notes of the raga karaharpriya in the descending order. Although there are regional styles in Indian music yet the basic unity, i.e. of ragas and talas concept is uniformly prevalent. The music of India is one of the oldest unbroken musical traditions in the world. The origins of this system go back to the Vedas. Modern historical and cultural research has also given a good perspective on the field, showing that Indian music has developed within a very complex interaction between different peoples of different races and cultures. It appears that the ethnic diversity of present day India has been there from the earliest of times.

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the classical music of South India or the Carnatic music, as well as other folk music.

Hindustani classical music is said to have originated during Vedic age. During the period sacrifices and prayers were made to the Gods through hymns and chants in musical style. In India, has witnessed tremendous development in style and methodology.

Musicians such as Tansen, Amir Khusrou, etc., have contributed immensely to the progress of Indian music, the reputation of which is still being maintained in the modern era by musical stalwarts like Pandit Ravi Shankar, Bhimsen Gururaj Joshi, Pandit Jasraj, Prabha Atre, Sultan Khan, Zakir Hussain, and so on.

The South Indian form of Indian classical music is known as Carnatic music, and is a musical style performed with the company of several musical instruments, such as violin, veena, mridangam, etc. Carnatic music is prevalent in the south Indian states of Tamil Nadu, Kerala, Andhra Pradesh and Karnataka. Carnatic music follows a pattern of mainly devotional themes, most of which are sung in the praise of Hindu deities.

The prime components of Carnatic music follows the same pattern as any other Indian classical music, which are the Raga, implying the melody part, and the Tala, denoting the rhythmic part. Musical instruments are an intrinsic part of Carnatic music, and have strengthened the foundation of this art form at the hands of immaculate musicians like T.R. Mahalingam, M. Chandrasekaran, and so on.

Indian music is based on the seven letters Sa, Re, Ga, Ma, Pa, Dha and Ni. These seven letters are mathematically improvised to make thousands of tunes named Ragas and cyclic rhythmic patterns known as Talas.

The vocal tradition is especially strong in Indian music. It is understood that the song is probably the most ancient form of music. Vocal music occupies a considerable part of Natya Shastra (Indian music). The Same Veda is the oldest musical text in India. Most of the classical songs of north India are devotional in nature, but there are few genres, which are especially oriented toward religion. Most notable is the bhajan, dhun or kirtan for Hindus, the qawali for Muslims. And the shabad for Sikhs (Indian music). Not all the music is serious for, there are also many popular genres. The gazel is one style, which is known for it rich poetic, and romantic content. The Hindi geet which is basically just a song and undoubtedly the most popular is the film song (Indian music).

Indian music serves as the best accompaniment to classical dances and dramas of India. Dance combines in itself action, song, mime and rhythm. A classical dance, like Indian classical music is dominated by the tala concept. Hence, the importance of music in dancing is great.

Indian music is based on melody. It is built on raga and tala concepts. In spirit it is individualistic. The content of the phrases is largely devotional. There are two major systems of classical music, the Hindustani system and the Carnatak system. The differences between them are more in practice than their theoretical foundation. The most famous are Bharata’s Natya Shastra and Sarangdeva’s Sangeet. Both systems have shown great assimilative power. They have also mutually influenced each other. The Hindustani system is prevalent over the whole of north and east of India while the upper half of Deccan has been more exposed to Persian influence.

The most famous Indian musical instrument is the Veena. It is celebrated in the epics and other ancient books. It has been described as the companion of Saraswati, the goddess of learning. It consists of a flat-board mounted on two large gourds and seven strings. The instrument is played by a deflection of the strings, which are played by the right hand and the notes made with the left. Among the other string instruments is the Sitar with its feminine grace. It is believed to have been devised by the poet Amir Khusro in the 14th century. The Sarod (played with a mizrab of plectrum) has its deep and vibrant notes.

The flute is the most common wind instrument associated with Lord Krishna. The Nagaswaram in the South and the Shehnai in the North are played on auspicious occasions like marriages and festivals. The Nagaswaram is indispensable for temple processions in South India. A great variety of horns and bugles are used in folk and tribal music. The Western type brass instruments are in vogue only in military and police bands.

Famous composers in the North Indian System are Amir Khusro, Swami Haridas, Tansen, Baiju Bawra etc. The Southern composers of fame include Purandardasa, Thyagaraj, Muthuswami, Dikshitar, Shastri etc.

Review of Literature

Anna Maria Fanelli et al (2004) focused on identification of musical instruments sounds based on timbre classification, using a biological plausible features extraction technique called cochleagram, and a new model of recurrent neural network called LSTM. Preliminary experiments were performed to compare various feature sets and neural network sizes. In particular two experiments were performed, using two different feature sets. The best classification rate obtained was 80%, averaged on 20 trials.

Krishna and Sreenivas (2004) proposed a system scalable from the isolated notes to the solo instrumental phrases scenario without the need for temporal segmentation of solo music using Non temporal and frame level features. Based on their effectiveness in speech, Line Spectral Frequencies (LSF) are proposed as features for music instrument recognition. The proposed system was evaluated using MFCC and LPC features. Gaussian Mixture Models and K-Nearest Neighbour model classifier were used for classification. The experimental dataset included the Ulowa’s MIS and the C Music corporation’s RWC databases. Their best results at the instrument family level was about 95% and at the instrument level was about 90% when classifying 14 instruments.
Booth (2011) in an article “Preliminary thoughts on Hindi popular music and film production: India’s ‘culture industry(ies)’, 1970-2000” goes through the history of the Indian film industry and its production now. It also focuses on India’s modern music industry as well as its connection to film.

Salamon, Gulati and Serra (2012) presented a novel approach for tonic identification in Indian classical music. They addressed the task of automatic tonic identification. Unlike approaches that identify the tonic from a single predominant pitch track, here they proposed a method based on a multi-pitch analysis of the audio. They used a multi-pitch representation to construct a pitch histogram of the audio excerpt, out of which the tonic is identified. The proposed method returns the pitch class of the tonic and in addition the precise octave in which it was played. The proposal method has four main blocks: sinusoid extraction, salience function, candidate generation, and tonic selection. The music collection used to evaluate the proposed approach consisted of 364 excerpts of Indian classical music including both Hindustani (38%) and Carnatic (62%) music. The excerpts were extracted from 231 unique performances by 36 different artists, including both male (80%) and female (20%) singers. They evaluated the proposed classification-based approach using 10-fold cross validation. Using this novel method they obtained classification accuracy of 93% for their complete collection.

Rao, Gupta, and Rao (2013) observed differences in singing style and instrumentation across genres to adapt acoustic features for the singing voice detection task. They focused on ‘vocal’ music i.e. where the singing voice was the predominant. The singing voice detection task was carried out on a database comprising excerpts from 5 distinct music genres. For their work they considered the effective extraction and evaluation of static and dynamic features on a dataset of vocal music drawn from Western popular, Greek and three distinct Indian genres: North Indian (Hindustani) classical, South Indian (Carnatic) and popular (Bollywood or film music). They discriminated singing voice from accompanying instruments with the help of the temporal dynamics source pitch and timbre features. Also static features are computed locally over short sliding analysis frames while dynamic features were computed over larger non-overlapping time windows called texture windows. A feature set of the first 13 MFCCs extracted from the frame-level magnitude spectrum was applied to a GMM classifier with 4 mixtures per class and it was considered as a baseline system. This method to isolate the dominant source spectrum served to increase the robustness of the extracted features in the context of polyphonic audio. Each of the feature sets (C1, C2 and C3) of the system was tested for SVD in a cross-validation classification experiment with an average of result 86.04 % best as 88.5%.

Prasad (2013) in his article “A Brief Look at the Identity, Connectedness and Alienation in the Traditional System of Indian Music” discusses the specifically South Indian, Carnatic, music, its history and how it is studied. It goes one step further, though, and puts Carnatic music into the present and discusses how the youth of South India are accepting their classical music.

Sith et al (2015) presented the Real-time Swara recognition system in Indian Music. Swara is the basic component of Indian Music. Swara recognition is the starting point of music pattern classification in Indian classical music. The recognition of Swara in real-time has often required for judging the quality of tone of a vocalist or an instrumentalist. In this age of reality shows of music, a standalone electronic system for Swara recognition was very relevant, whereas the system would precisely judge the contestant in terms of Swara perfection. In this context a Swara recognition system was designed and implemented on a Texas Instruments Digital Signal Processor TMS320C6713. In this system the fundamental frequency was tracked using FFT algorithm and also using a newly developed algorithm which has worked efficiently in Digital Signal Processors. The frequency obtained was wrapped to a single octave. While the fundamental frequency has mapped to twelve distinct values corresponding to twelve semi-notes and displayed in the LED display of the DSP Processor. The efficiency of the system has been tested in terms of memory usage and speed.

Shelke and Chitre (2015) contributed their work in the area of Musical instrument recognition which has significant importance in the research of computer music and it is related to the modelling of sounds. According to Shelke and Chitre, Musical sound produces five dimensions: pitch, loudness, duration, spatialization, and timbre. This work presented a system for identifying a specific musical instrument from monophonic recordings. The system proposed has been trained and tested with three Indian musical instruments samples. Instruments include Flute, Harmonium and Sitar, which are most commonly used in Indian classical music. The Statistical and spectral parameter were used for the classification of the sounds in Indian Musical Instruments. As per their experimental result SVM classifier proved to be an accurate classification technique for Indian Musical Instrument. Using separately recorded notes as test sets, they were able to achieve average accuracy as high as 88.88 % for SVM to decide if a note was played by the Sitar or others.

Research Methodology

The objective will be on the students’ knowledge about Indian music. Both primary and secondary sources will be dealt with. A sample of 100 female students studying in Panjab University, Chandigarh was selected at random. An Interview Schedule was prepared to collect the primary data.

Interpretation of Data

<table>
<thead>
<tr>
<th>Age of respondents (years)</th>
<th>No. of respondents N=100</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>38</td>
<td>38.00</td>
</tr>
<tr>
<td>26-30</td>
<td>35</td>
<td>35.00</td>
</tr>
<tr>
<td>31-35</td>
<td>27</td>
<td>27.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

Interpretation
From Table 1 it is seen that 38% of the respondents are in the age group of 20-25 years, 35% of the respondents are in 26-30 years, and 27% of the respondents in the age group of 31-35 years respectively.

Table 1
1. Age of the respondents

<table>
<thead>
<tr>
<th>Age Group</th>
<th>No. of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>38</td>
<td>38.00</td>
</tr>
<tr>
<td>26-30</td>
<td>35</td>
<td>35.00</td>
</tr>
<tr>
<td>31-35</td>
<td>27</td>
<td>27.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

Interpretation:

From Table 1 it is seen that 38% of the respondents are in the age group of 20-25 years, 35% of the respondents are in 26-30 years, and 27% of the respondents in the age group of 31-35 years respectively.

Table 2
2. Educational Level of the respondents

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>No. of respondents N=100</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate</td>
<td>49</td>
<td>49.00</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>34</td>
<td>34.00</td>
</tr>
<tr>
<td>M.Phil/Ph.D</td>
<td>17</td>
<td>17.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

Interpretation:

From Table 2 it is seen that 49% of the respondents are graduate, 34% of the respondents are Postgraduates, and 17% of the respondents are M.Phil/Ph.D respectively.

Table 3
3. Religion of the respondents

<table>
<thead>
<tr>
<th>Religion of the respondents</th>
<th>No. of respondents N=100</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindu</td>
<td>66</td>
<td>66.00</td>
</tr>
<tr>
<td>Sikh</td>
<td>24</td>
<td>24.00</td>
</tr>
<tr>
<td>Christian</td>
<td>10</td>
<td>10.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

Interpretation:

From Table 3 it is seen that 66% of the respondents are Hindus, 24% of the respondents are Sikhs, and 10% of the respondents are Christians.

Table 4
4. Do you know what Indian classical music is?

<table>
<thead>
<tr>
<th>Knowledge of Indian classical music</th>
<th>No. of respondents N=100</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>65</td>
<td>65.00</td>
</tr>
<tr>
<td>No</td>
<td>35</td>
<td>35.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

Interpretation:

From Table 4 it clearly shows that 65% of the respondents have knowledge about Indian classical music. 35% of the respondents have no knowledge about Indian classical music.
Figure 4 shows the knowledge of Indian classical music.

### Table 5

<table>
<thead>
<tr>
<th>Knowledge of Hindustani and Carnatic music</th>
<th>No. of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>85</td>
<td>85.00</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>15.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

**Interpretation:**

From Table 5 it clearly shows that 85% of the respondents have the knowledge of Hindustani and Carnatic music. 15% of the respondents have no knowledge of Hindustani and Carnatic music.

Figure 5 shows the respondents' knowledge of Hindustani and Carnatic music.

### Table 6

<table>
<thead>
<tr>
<th>Have you heard about Raga and Taal in Indian music?</th>
<th>No. of respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>90</td>
<td>90.00</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>10.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data

**Interpretation:**

From Table 6 it shows that 90% of the respondents heard about Raga and Taal whereas 10% of the respondents have not heard about Raga and Taal.

Figure 6 shows whether the respondents heard about Raga and Taal.

### Conclusion

After analyzing the data it is found that most of the female students are in the age group of 20-25 years followed by 35% of the respondents in the age group of 26-30 years and 27% of the respondents are in the age group of 31-35 years. From educational point of view it is seen that 49% of the respondents are pursuing their Bachelor’s degree, 34% of the respondents doing their Master’s degree and 17% of the respondents pursuing M.Phil/Ph.D courses. Majority of the female respondents are Hindus with 66%, 24% of the respondents are Sikh and 10% of the respondents are Christians. Most of the respondents have the knowledge of Indian classical music, knowledge of Hindustani and Carnatic music and heard about Raga and Taal.

The musical history of India is quite glorious. In spite of some Western influences, the Indian music will be ever shining because of the qualities of its content and structure. The present film and rap music is influencing the youth more and more. But the classical musical themes continue to enjoy popularity among the masses. The amalgamation of the musical styles of various races in the country displays the ethnic diversity of India.

### References


