

An Overview of the Heritage of Indian Classical Music in the Framework of Indian Knowledge Systems: A Study of the Integrated Approach with Various Allied Disciplines

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Abstract

Indian classical music represents one of the most enduring pillars of the Indian Knowledge Systems (IKS), reflecting a holistic tradition that integrates artistic expression with philosophy, spirituality, science, education, and social well-being. This study explores the heritage of Indian classical music through the framework of IKS by examining its interdisciplinary connections with various allied disciplines, including psychology, neuroscience, linguistics, mathematics, artificial intelligence, music technology, medicine, yoga, cultural studies, and environmental consciousness. The research highlights how the ancient principles of Nāda, Rāga, Tāla, and Guru–Shishya Parampara continue to influence contemporary academic inquiry and professional practice. Adopting an integrated approach, the study demonstrates that Indian classical music extends beyond performance, serving as a valuable resource for cognitive development, therapeutic interventions, digital innovation, heritage preservation, and vocational education. It further discusses the relevance of the National Education Policy 2020 in promoting multidisciplinary learning and creating opportunities for collaborative research across diverse domains. By synthesising traditional knowledge with modern scientific perspectives, the paper argues that Indian classical music can contribute significantly to sustainable education, cultural continuity, and knowledge creation in the twenty-first century. The findings emphasise the need for institutional collaborations and interdisciplinary curricula that preserve India's musical heritage while fostering innovation, employability, and global academic engagement within the broader vision of Indian Knowledge Systems.

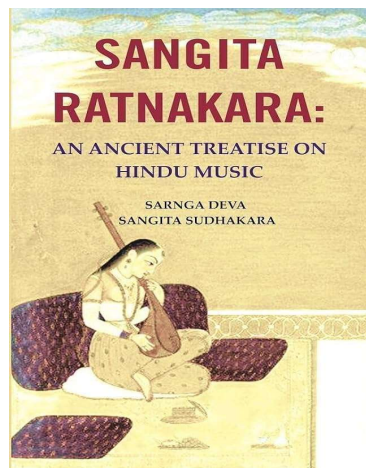
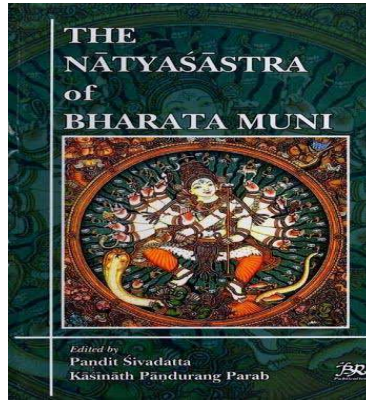
Keywords: *Indian Knowledge Systems (IKS), Indian Classical Music, Interdisciplinary Education, Cultural Heritage, Guru–Shishya Parampara, Music Therapy, Music Technology, National Education Policy 2020, Multidisciplinary Research, Vocational Education*

Introduction:

Indian classical music represents one of the world's oldest and most enduring traditions of knowledge, reflecting a rich blend of philosophy, science, spirituality, aesthetics, education, and cultural heritage. Far beyond being a performing art, it has developed over centuries into a holistic system of learning that embodies the core principles of the Indian Knowledge Systems (IKS) framework. Its foundations can be traced to the Vedas, especially the *Sāmaveda*, and its intellectual growth is documented in seminal treatises such as the *Natyashastra*, *Sangeet Ratnakara*, *Dattilam*, *Brihaddeshi*, etc. Together, these works demonstrate how musical knowledge has traditionally combined theoretical understanding with practical experience, ethical values, and disciplined learning.

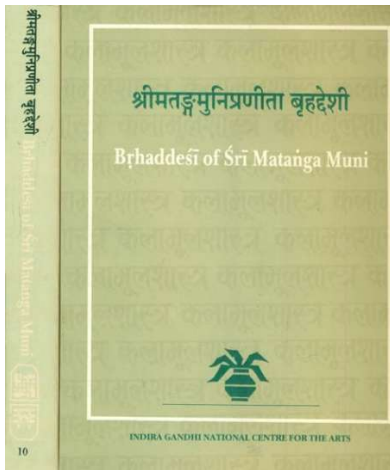
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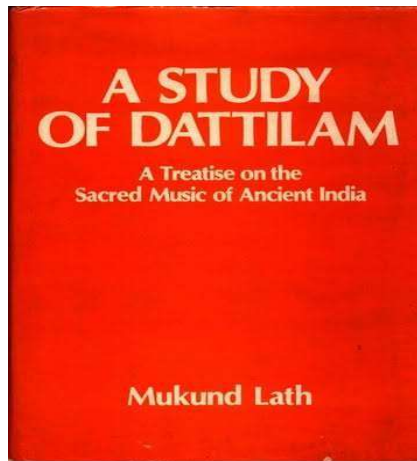


<https://www.amazon.in/Sangita-Ratnakara-Ancient-Treatise-Hindu/dp/9367807031>

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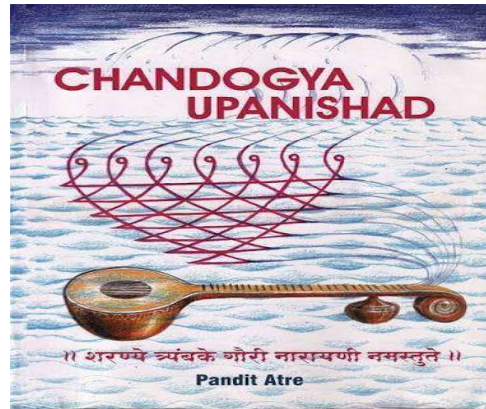


Within the Indian Knowledge Systems perspective, knowledge is viewed as an interconnected whole in which intellectual growth, moral character, physical well-being, artistic creativity, and spiritual awareness complement one another. Indian classical music beautifully reflects this holistic philosophy by bringing together sound, consciousness, culture, and scientific insight into a living tradition that continues to inspire education, research, and human development [1].

The philosophy of Nada Brahma, which views the entire universe as an expression of primordial sound, forms one of the central pillars of Indian classical music. In the Indian philosophical tradition, sound has never been understood merely as a physical or acoustic phenomenon; instead, it has been regarded as a powerful creative energy capable of shaping the human mind, evoking emotions, and elevating spiritual awareness. This profound understanding establishes a close relationship between music, metaphysical thought, yoga, and meditation, highlighting the holistic and interdisciplinary character of Indian Knowledge Systems.

The Upanishads further explore the connection between sound, vibration, consciousness, and self-realisation, suggesting that sincere and disciplined engagement with music can foster inner growth, mental clarity, and spiritual awakening [2].

<https://www.bookganga.com/eBooks/Books/Details/4649780385820085502>



As a result, Indian classical music has, throughout history, served not only as a refined artistic tradition but also as a meaningful path for education, self-development, and holistic human enrichment.

The teaching tradition of Indian classical music reflects the educational philosophy at the heart of Indian Knowledge Systems. The **Guru-Shishya Parampara** is founded on the belief that true learning extends far beyond the transfer of information. It encourages students to learn through direct experience, careful observation, regular practice, self-reflection, and close interaction with the teacher. In this tradition, the Guru not only imparts musical knowledge but also nurtures discipline, ethical values, emotional sensitivity, and a lifelong commitment to learning.

During the Medieval times, patronage of royal courts by royal musicians and concerts organised in their honour were all, as a result, celebrated events. “...Music at the Jodhpur court also played a vital role during official state ceremonies. Visiting dignitaries, political guests, and foreign representatives were often welcomed with elaborate musical presentations designed to showcase the cultural sophistication of Marwar. Such occasions demonstrated that music functioned not only as art but also as a symbol of political prestige and regional identity. Shehnai ensembles were frequently performed during ceremonial arrivals, while court vocalists and instrumentalists entertained guests during banquets and formal receptions [3].

<https://stock.adobe.com/in/search?k=gurukul>



Students gradually develop their artistic skills through continuous guidance, imitation, dialogue, and practical application, allowing technical excellence to grow alongside intellectual depth, emotional maturity, and moral character. Interestingly, many of these time-tested pedagogical principles closely align with contemporary educational theories that advocate learner-centred, experiential, and competency-based learning.

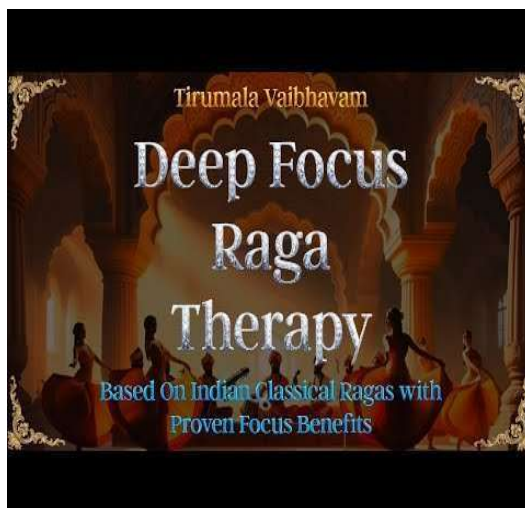
In contemporary times, the **National Education Policy (NEP) 2020** similarly emphasises holistic education, experiential learning, mentorship, and skill development, highlighting the enduring relevance of the Guru–Shishya tradition in modern higher education [4].

<https://www.youtube.com/watch?v=xyYQfmtPr5Q>



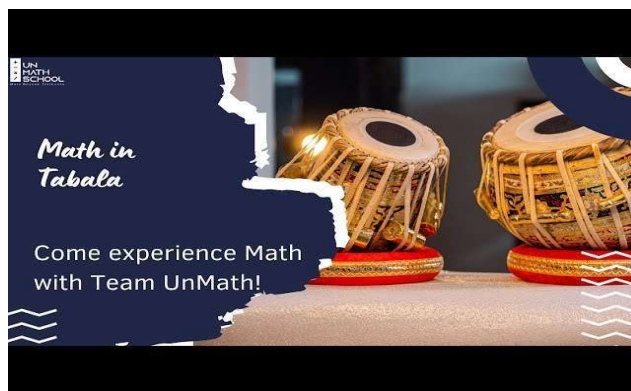
The thoughtful integration of traditional teaching practices with modern educational technologies has created new possibilities for preserving the rich heritage of Indian classical music while making quality music education more accessible to a wider audience. Digital learning platforms, online archives, virtual classrooms, and advanced audio-visual tools can effectively complement the time-honoured Guru–Shishya tradition, ensuring that centuries-old musical knowledge is documented, preserved, and transmitted to future generations without losing its authenticity. At the same time, Indian classical music shares deep and meaningful connections with a wide range of allied disciplines, highlighting the multidisciplinary nature of Indian Knowledge Systems.

<https://www.youtube.com/watch?v=dIH98a4Vzvw>



One of its most fascinating links is with mathematics, which forms the foundation of rhythmic organisation, temporal precision, and musical composition. The intricate structures of tala and laya, along with complex rhythmic permutations, combinations, and improvisational patterns, demonstrate an advanced understanding of mathematical principles. These sophisticated rhythmic frameworks, developed centuries ago, reflect analytical and computational thinking that remarkably anticipates many concepts explored in modern mathematics and computational sciences [5].

<https://www.youtube.com/watch?v=qL1bt5K3vlw>



During musical performances, artists continuously apply principles such as proportional relationships, cyclic patterns, fractional divisions, and intricate rhythmic combinations, often without consciously reducing them to mathematical formulas. These elements are deeply embedded in the practice of Indian classical music and reveal the remarkable intellectual and cognitive processes involved in rhythmic improvisation and performance. The mathematical sophistication inherent in concepts such as tala and laya has increasingly drawn the attention of researchers, who view Indian classical music as an important field for understanding the relationship between music, cognition, and quantitative reasoning.

Indian classical music also shares a close relationship with the principles of physics, particularly the science of acoustics. Fundamental musical concepts such as shruti (microtones), swara (musical notes), resonance, harmonic overtones, and frequency relationships are closely aligned with the physical properties of sound. Likewise, the traditional construction of instruments such as the tanpura, veena, sitar, sarod, bansuri, and tabla reflects a deep practical understanding of vibration, resonance, material characteristics, and tonal balance. Long before acoustics became a formal scientific discipline, Indian instrument makers had developed highly sophisticated empirical techniques that enabled them to produce instruments with exceptional tonal quality and acoustic precision. Their craftsmanship stands as a remarkable example of the scientific insight embedded within India's musical heritage [6].

https://www.researchgate.net/figure/Carnatic-music-svaras-and-their-frequency-ratios-Table-also-shows-the-twelve-semitone_tbl1_305681411

Sno	Carnatic music svara	Label	Frequency	Semitone scale for different tonics			
			ratio	138	156	198	210
1	Shadja (Tonic)	S	1.0	138	156	198	210
2	Shuddha rishaba	R1	(16/15)	147.20	166.40	211.20	224
3	Chatushruthi rishaba	R2	(9/8)	155.250	175.50	222.75	236.25
4	Shatshruthi rishaba	R3	(6/5)	165.250	187.20	237.60	252
3	Shuddha gAndhara	G1	(9/8)	155.250	175.50	222.75	236.25
4	ShAdhArana gAndhara	G2	(6/5)	165.60	187.20	237.60	252
5	Anthara gAndhara	G3	(5/4)	172.50	195.0	247.5	262.5
6	Shuddha madhyama	M1	(4/3)	184.0	208.0	264.0	280
7	Prati madhyama	M2	(17/12)	195.50	221.0	280.5	297.5
8	Panchama	P	(3/2)	207.00	234.0	297.0	315
9	Shuddha daivatha	D1	(8/5)	220.80	249.60	316.8	336
10	Chatushruthi daivatha	D2	(5/3)	230.00	260.0	330.0	350
11	Shatshruthi daivatha	D3	(9/5)	248.40	280.80	356.4	378
10	Shuddha nishAdha	N1	(5/3)	230.0	260.0	330.0	350
11	Kaisika nishAdha	N2	(9/5)	248.40	280.80	356.4	378
12	KAkali nishAdha	N3	(15/8)	258.75	292.50	371.25	393.75

In recent years, collaboration between music departments and engineering institutions has opened new avenues for research and innovation in areas such as digital acoustics, musical instrument design, sound engineering, audio restoration, and digital preservation.

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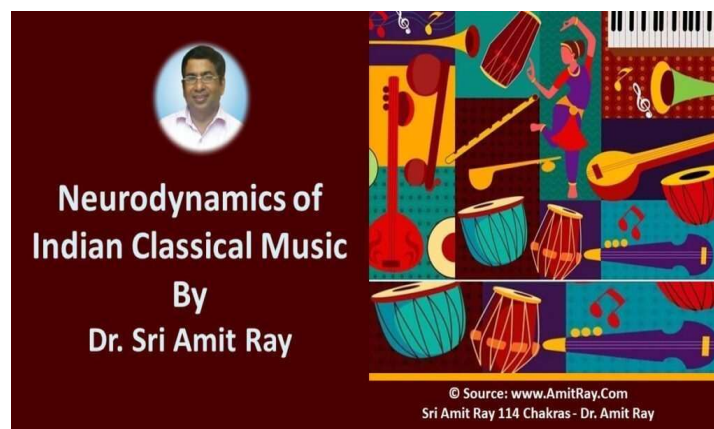


<https://classicalclaps.com/designing-an-ethical-digital-ecosystem-for-the-future-of-indian-classical-music/>

These interdisciplinary initiatives illustrate how the traditional knowledge embedded in Indian classical music continues to remain relevant in the age of modern science and technology. By combining centuries-old musical wisdom with contemporary engineering techniques, researchers are developing new methods for preserving, analysing, and presenting India's rich musical heritage while also contributing to advancements in audio technology and music education.

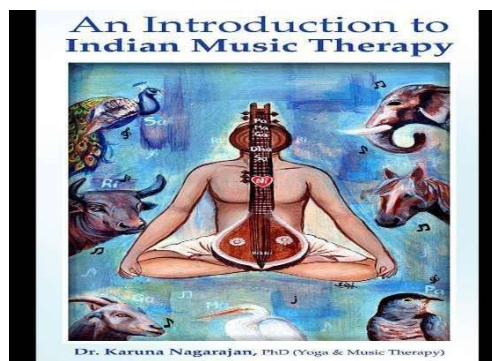
The relationship between Indian classical music and psychology has likewise attracted growing scholarly interest. For centuries, the Indian musical tradition has associated different ragas with particular rasas (emotional essences), moods, and aesthetic experiences, reflecting a sophisticated understanding of the human mind and emotional expression. Contemporary research in psychology and neuroscience increasingly supports this traditional perspective, indicating that structured engagement with music can positively influence attention, memory, emotional regulation, stress management, and cognitive flexibility.

<https://amitray.com/neurodynamics-indian-classical-music-ray-28-brain-chakras/>



These findings not only validate many long-held musical practices but also encourage meaningful interdisciplinary research connecting music with psychology, neuroscience, mental health, & cognitive science [7]. These research findings have encouraged greater collaboration among the fields of psychology, neuroscience, education, and music therapy, leading to a deeper exploration of the therapeutic potential of Indian classical music. Today, classical music is increasingly being incorporated into programmes designed to support mental health, neurological rehabilitation, child development, special education, and emotional well-being. Such interdisciplinary studies not only strengthen the scientific understanding of music's influence on the human mind but also reaffirm the enduring relevance of traditional Indian musical knowledge in addressing contemporary health and educational challenges. Indian classical music also shares a deep and enduring relationship with Ayurveda and Yoga, both of which are fundamental pillars of the Indian Knowledge Systems framework. Ancient treatises on music highlight that musical excellence is closely linked with disciplined living, controlled breathing, vocal care, mental concentration, and emotional balance.

<https://www.amazon.in/Introduction-Indian-Music-Therapy-ebook/dp/B0D1J5KN61>



Yogic practices help musicians improve breath control, posture, mindfulness, stamina, and vocal endurance, while the principles of Ayurveda promote physical health, vocal well-being, and overall balance of body and mind. Together, these traditions present a holistic approach to human development, where music is not viewed merely as an artistic pursuit but as a way of cultivating physical vitality, mental clarity, emotional stability, and spiritual growth. This integrated perspective reflects the essence of traditional Indian education, in which artistic practice and personal well-being are deeply interconnected [8].

Every musical note corresponds to a particular frequency, and harmonious musical intervals arise from precise mathematical relationships between frequencies. Long before the development of modern acoustics, ancient Indian musicologists recognised the significance of these relationships. Classical treatises such as the Nāṭyaśāstra and Saṅgīta Ratnākara describe music as an expression of cosmic order and harmony. The seven notes, or svaras, were not regarded merely as artistic devices but as manifestations of universal vibrational principles connected with both nature and spiritual experience. Music, therefore, was understood as a means of aligning human consciousness with the deeper rhythms of the cosmos.[9]

A Study of the Integrated Approach with Various Allied Disciplines

Language and literature form another significant pillar of the rich and integrated heritage of Indian classical music. Over centuries, this musical tradition has played a vital role in preserving and promoting a wide range of languages, including Sanskrit, Braj, Awadhi, Persian, Hindi, Tamil, Telugu, Kannada, Marathi, Bengali, and many other regional languages of India.

<https://www.alamy.com/stock-photo-background-concept-wordcloud-multilanguage-international-many-language-84965132.html>



Musical forms such as *bandish*, *dhrupad*, *khayal*, *kriti*, *varnam*, *thumri*, and numerous devotional compositions have served as powerful media for carrying forward philosophical thought, spiritual teachings, ethical values, historical narratives, and literary traditions from one generation to the next. In this way, Indian classical music has not only enriched artistic expression but has also safeguarded India's remarkable linguistic and literary diversity. It therefore stands as much more than a performing art; it is a living repository of India's multilingual cultural heritage, preserving the wisdom, creativity, and collective memory of diverse communities through the enduring power of music [10].

Recent advances in digital humanities and music technology have created exciting new opportunities to connect Indian classical music with disciplines such as computer science, artificial intelligence, archival science, and digital preservation. Emerging technologies, including machine learning and intelligent computing, are now being used for tasks such as *raga* recognition, music information retrieval, notation analysis, digital archiving, and the development of intelligent music learning systems.

<https://www.shutterstock.com/search/music-create-on-computer>



These technological innovations are making it easier to document, preserve, analyse, and share India's rich musical heritage with audiences around the world. Importantly, these modern tools are not intended to replace the traditional Guru-Shishya method of learning. Instead, they

complement this time-honoured tradition by strengthening the preservation of musical knowledge, improving access to learning resources, supporting systematic documentation, and enabling the global dissemination of Indian classical music while respecting its authenticity and cultural values.[11].

These interdisciplinary collaborations clearly demonstrate that Indian Knowledge Systems are not static traditions confined to the past but vibrant and evolving bodies of knowledge that continue to remain relevant in the modern world. By engaging with contemporary technologies and emerging fields of research, these knowledge systems have shown a remarkable ability to adapt to changing educational and scientific contexts without compromising their philosophical foundations or cultural authenticity. This dynamic interaction between tradition and innovation ensures that India's rich musical heritage continues to inspire new research, technological advancements, and educational practices.

The **National Education Policy (NEP) 2020** further strengthens this vision by promoting multidisciplinary and holistic education through the integration of the arts, sciences, vocational studies, and Indian Knowledge Systems within higher education. The policy recognises that meaningful and sustainable learning extends beyond disciplinary boundaries and should nurture intellectual curiosity, creativity, cultural awareness, critical thinking, and practical skills. In this context, Indian classical music serves as an excellent example of interdisciplinary learning. Its rich traditions naturally bring together philosophy, science, language, mathematics, psychology, technology, cultural studies, and the performing arts, creating a comprehensive educational experience that supports both academic excellence and holistic human development.[12].

Strengthening these interdisciplinary connections not only helps preserve India's rich intangible cultural heritage but also encourages the development of innovative educational models that are well suited to addressing the academic, technological, and societal challenges of the present day. By bringing together diverse fields of knowledge, Indian classical music demonstrates how traditional wisdom can meaningfully contribute to contemporary education, research, and innovation while remaining deeply rooted in its cultural and philosophical foundations.

The interdisciplinary nature of Indian classical music becomes even more apparent when viewed through the perspectives of modern neuroscience and cognitive science. A growing body of scientific research suggests that long-term musical training can positively influence brain function by enhancing neuroplasticity, auditory perception, memory, attention, executive functioning, and emotional regulation. The disciplined practice of "**riyaz**", which lies at the heart of classical music training, requires sustained concentration, precise sensory coordination, patience, and cognitive flexibility.

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<https://www.youtube.com/watch?v=sFOOAGvseP8>

As a result, it serves not only as a means of developing musical proficiency but also as a powerful tool for intellectual and personal growth. Interestingly, these scientific observations closely resonate with the traditional Indian belief that sincere and disciplined musical practice refines both the mind and the inner consciousness. This convergence of ancient musical wisdom and contemporary neuroscience highlights the enduring relevance of Indian Knowledge Systems in modern scientific inquiry. It creates exciting opportunities for collaborative research involving music, psychology, medicine, neuroscience, and cognitive science.[13].

The connection between Indian classical music and the health sciences has received growing attention in recent years, as researchers and healthcare professionals increasingly recognise the therapeutic value of music. Music-based interventions are now being incorporated into a wide range of healthcare settings, including stress management programmes, neurological rehabilitation, palliative care, geriatric care, and special education. While traditional Indian texts have long emphasised the spiritual, emotional, and psychological influence of *ragas*, contemporary clinical research has broadened this perspective by investigating their measurable effects on physical and mental health.

<https://www.slideshare.net/slideshow/influences-of-music-in-mental-healthpptx/266581296>



Studies have explored how music can positively influence heart rate variability, blood pressure, anxiety levels, emotional well-being, and cognitive recovery following illness or injury. As a result, collaboration among musicians, psychologists, physicians, neuroscientists, and rehabilitation specialists has significantly strengthened the scientific understanding of music

therapy. At the same time, these interdisciplinary efforts continue to respect and preserve the cultural and philosophical foundations of the Indian classical music tradition, demonstrating how ancient knowledge can contribute meaningfully to modern healthcare.[14].

Management studies also emerge as an important allied discipline that can draw meaningful insights from the traditions of Indian classical music. The **Guru–Shishya Parampara** nurtures qualities that are fundamental to effective leadership, including mentorship, discipline, ethical conduct, patience, commitment, and a spirit of lifelong learning. Beyond individual training, group performances encourage musicians to develop teamwork, effective communication, adaptability, mutual respect, conflict management, and collaborative decision-making. Similarly, the tradition of improvisation requires performers to think creatively, respond thoughtfully to changing musical situations, and make informed decisions in real time—abilities that closely resemble the strategic thinking and problem-solving skills expected of successful leaders and managers today.

These parallels demonstrate that the pedagogical and performance practices of Indian classical music offer valuable lessons for contemporary management education. At the same time, music institutions can enrich their academic programmes by incorporating subjects such as entrepreneurship, arts and cultural management, event management, leadership, and organisational skills.

<https://www.youtube.com/watch?v=Td-zOwzSu4o>



Such interdisciplinary integration would not only broaden students' professional competencies but also enhance their employability and entrepreneurial potential within India's expanding creative and cultural industries.[15].

Architecture and environmental design also have a close and meaningful relationship with the heritage of Indian classical music. Throughout history, performance spaces such as temples, royal courts, open-air theatres, and traditional auditoriums were carefully planned to achieve excellent acoustics, balanced resonance, audience engagement, and aesthetic harmony. Ancient architects possessed a deep practical understanding of how spatial proportions, building materials, and structural design influenced the quality and movement of sound. Many of these traditional architectural practices reflect principles that are now studied in the field of architectural acoustics.

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Today, this rich legacy offers valuable opportunities for interdisciplinary collaboration among architects, engineers, acousticians, and musicians. By combining traditional knowledge with modern design techniques, it is possible to create concert halls, recording studios, museums, cultural centres, and heritage conservation projects that provide superior acoustic performance while preserving the cultural identity and architectural authenticity of India's musical traditions. Such collaborative efforts not only enhance the experience of performers and audiences but also contribute to the long-term preservation and promotion of India's rich musical and architectural heritage.[16].

Indian classical music also makes a meaningful contribution to environmental awareness through the growing field of **eco-musicology**, which explores the relationship between music, culture, and the natural world.[17]

Many *ragas* are traditionally linked with particular seasons, times of the day, natural landscapes, and changing rhythms of nature, reflecting the deep respect that Indian musical traditions have long held for the environment. This close association demonstrates that nature is not viewed merely as a physical resource but as a source of inspiration, harmony, and spiritual reflection.

The melodies and emotional expressions of these *ragas* encourage listeners and performers alike to develop a greater appreciation of the interconnectedness between human life and the natural world. Bringing environmental studies together with music education can therefore offer a unique and culturally rooted approach to promoting sustainability and ecological awareness.

Such interdisciplinary learning can foster respect for biodiversity, encourage responsible environmental practices, and inspire students to view nature through both scientific and artistic perspectives. In doing so, it reflects the holistic philosophy of Indian Knowledge Systems, where human well-being, cultural traditions, and the natural environment are understood as deeply interconnected and mutually sustaining.[18].

The preservation of India's intangible cultural heritage has emerged as an important area of interdisciplinary collaboration, particularly in the field of Indian classical music. Rapid urbanisation, globalisation, changing lifestyles, and evolving cultural preferences have posed significant challenges to the continuity of many traditional musical practices and oral traditions. As a result, there is an increasing need to document, preserve, and transmit this invaluable heritage in ways that remain faithful to its original spirit while making it accessible to future generations.

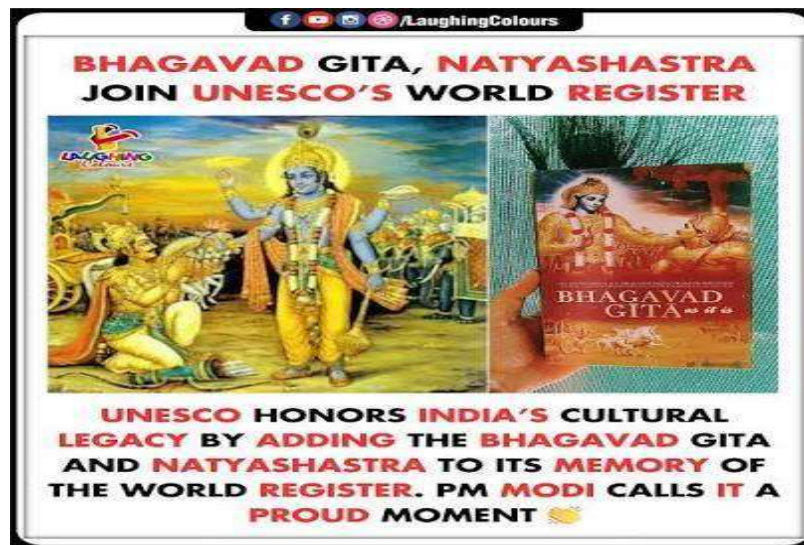
Advances in digital technology have greatly strengthened these preservation efforts. Tools such as digital documentation, audio restoration, notation software, metadata management, digital archives, and artificial intelligence are now being used to safeguard rare recordings, manuscripts, oral histories, and traditional teaching practices. These technologies not only help preserve fragile cultural resources but also improve their accessibility for researchers, educators, musicians, and students across the world. At the same time, meaningful collaboration among musicologists, computer scientists, librarians, archivists, linguists, and cultural historians ensures

that preservation initiatives combine technological innovation with scholarly rigour and cultural sensitivity. Such interdisciplinary efforts help protect India's rich musical legacy while respecting the traditional modes of knowledge transmission that have sustained Indian classical music for centuries.[19]. The expanding role of cultural diplomacy has significantly enhanced the global recognition and influence of Indian classical music. Today, international music festivals, academic exchange programmes, cultural missions, and UNESCO-led initiatives increasingly acknowledge Indian music as a meaningful medium for promoting intercultural dialogue, mutual respect, and global understanding.

<https://timesofindia.indiatimes.com/videos/news/unesco-adds-diwali-to-heritage-list-marking-a-landmark-global-recognition-for-indias-culture/videoshow/125887240.cms>



<https://www.instagram.com/p/DIlvO51qafS/>



Through performances, workshops, lectures, and collaborative projects, Indian musicians often act as cultural ambassadors, introducing audiences around the world to India's rich philosophical traditions, artistic heritage, and civilizational values. In doing so, they not only preserve and

promote the country's musical legacy but also contribute to building cultural bridges across nations.

Recognising this growing international relevance, higher education institutions can develop interdisciplinary programmes that combine Indian classical music with subjects such as international relations, cultural studies, diplomacy, tourism, media, and communication studies. Such integrated courses can equip students with the knowledge and skills required to work in cultural exchange programmes, heritage management, international arts organisations, tourism, and public diplomacy. At the same time, these initiatives can strengthen India's cultural presence on the global stage, enhancing the country's soft power while creating new academic, professional, and entrepreneurial opportunities for students in the field of music.[20].

Entrepreneurship has become an increasingly important aspect of music education in India, expanding the scope of career opportunities available to aspiring musicians. While performance and teaching continue to be traditional professional pathways, the rapid growth of the creative economy has opened new avenues in areas such as music production, digital distribution, online music education, event management, arts administration, intellectual property management, content creation, and other creative industries. These emerging opportunities encourage musicians to apply their artistic skills in innovative ways and build sustainable careers beyond the conventional concert stage.

In this context, incubation centres developed through collaboration among music departments, management institutes, engineering colleges, and startup ecosystems can play a transformative role. Such interdisciplinary initiatives provide young musicians with access to mentorship, technological resources, business training, and entrepreneurial guidance, enabling them to convert their creative talents into successful and sustainable enterprises. These efforts are closely aligned with India's broader goals of promoting innovation, self-employment, and the growth of the creative economy. At the same time, they ensure that entrepreneurial development is rooted in the rich cultural values and artistic traditions of Indian classical music, allowing innovation and heritage to progress hand in hand.[21].

Music engineering and digital technology have become integral to the practice, teaching, and preservation of Indian classical music in the modern era. Advances in sound recording, live audio reinforcement, studio production, digital signal processing, acoustical engineering, virtual instruments, and immersive audio technologies have transformed how music is performed, documented, researched, and shared with audiences around the world. These technological developments have created new possibilities for preserving the authenticity of musical traditions while making them more accessible to learners, researchers, and listeners through digital platforms.

The integration of music with engineering and computer science equips students with valuable technical skills that are increasingly relevant in fields such as broadcasting, film and television, gaming, multimedia production, digital archiving, educational technology, and music software

development. Interdisciplinary programmes that combine musical training with technological expertise not only broaden career opportunities and improve employability but also encourage innovation within the music industry. More importantly, they demonstrate that Indian classical music can successfully embrace modern technological advancements while preserving its philosophical depth, artistic excellence, and rich cultural heritage. [22].

An equally important aspect of the Indian Knowledge Systems framework is the growing role of vocational and skill-oriented education. The **National Education Policy (NEP) 2020** places strong emphasis on multidisciplinary learning, experiential education, flexibility in curriculum design, and the development of practical skills, thereby creating a supportive environment for integrated programmes in Indian classical music. This policy encourages higher education institutions to move beyond conventional disciplinary boundaries and design courses that combine traditional knowledge with emerging fields of study. [23].

In this context, universities have significant opportunities to introduce interdisciplinary degree programmes that integrate Indian classical music with disciplines such as psychology, artificial intelligence, computer science, management, journalism and mass communication, education, healthcare, linguistics, tourism, digital humanities, and music technology. Such programmes can equip students with a diverse range of academic, technical, and professional competencies, preparing them for careers as educators, researchers, music therapists, sound engineers, archivists, cultural managers, entrepreneurs, media professionals, digital content creators, and technology specialists. By combining the timeless wisdom of India's musical traditions with contemporary knowledge and vocational skills, this integrated educational approach not only contributes to the preservation and promotion of India's rich musical heritage but also enables graduates to meet the evolving demands of the modern employment landscape and the creative economy.

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