IGNITE

INTERVIEW

Interview with Prof. Sunil Rajpal

THEMED ARTICLE

Dance - A Multifaceted Art Form

CENTRES AT FLAME UNIVERSITY

Dealing with Climate Change

FLAME UNIVERSITY | EVERLASTING learning

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In The Issue

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Grooming Young India for A Better Tomorrow: The Role of Multi-Disciplinary Education

PROF. DISHAN KAMDAR
Vice-Chancellor, FLAME University

As independent India completes 75 years of its journey and we look back at the path we have traversed, it is remarkable to see how much we have progressed—from a country struggling to unshackle itself from the effects of colonial rule and beset with socio-economic challenges to a vibrant, aggressive, global economic force to reckon with. We live in the aftermath of the revolutionary ideas that our founding fathers and mothers set into motion. When we examine the factors that contributed to India's growth and success, the most significant and strongest influencer has been its human resource potential. It has not only been the most crucial contributor to its growth but also a high-quality differentiator. Indian talent has been acknowledged and is in great demand across the world. Indians are making their mark globally, and this has been increasing over the last couple of decades. They have donned the mantle of CEOs, scientists, Nobel laureates, academics, researchers, policy-makers, sportspeople, artists, and much more. We can trace the roots of these success journeys back to the Indian higher education system, which has renowned institutes like the IITs, IIMs, IISc, and other universities, many of which have been ranked among the world's top institutions and accredited by reputed international associations. As the Indian higher education system continues to evolve, it is important that it further reinvigorates itself by not only increasing the number of high-quality institutions but also raising the bar for education, research, and training across those very institutions in order to cater to the growing pool of student talent at home and abroad. Our higher education institutions (HEIs) need to be adapting themselves to the global technological and business shifts in order to equip our students for the digital, borderless, fast-paced, futuristic, and unpredictable world on the horizon.

Increasingly, we need a more broad-based education that will equip students with skills that prepare them for diverse careers and to face an unknown yet potential-rich future. Here, the implementation of the NEP 2020 and its focus on multi-disciplinary education will act as a catalyst in shaping the future of higher education in the country and influence India's human resource growth in years to come. In the current political, digital, social, and economic VUCA world, we need people who are multi-skilled, effective communicators who understand the diversity around them and are receptive and tolerant of divergent views. We need people capable of working cohesively in teams anywhere in the world. Educating students in a multi-disciplinary way will have a transformative impact on young minds as we prepare them for tomorrow's real world. Diverse modes of imparting education, including blended models, are some options as we see newer tools becoming available that will allow students to access the latest pedagogical innovations from anywhere in the country and the world. Hence, it is imperative for educational institutions to have a close understanding of the changes taking place in business, government, and society and to understand how these shifts will impact the education they offer.

Our young students constitute a smart generation. They have high levels of intellectual quotient, which is good, but they also need to develop high levels of social, ethical, aesthetic, emotional, and spiritual quotients. Implementing the multi-disciplinary system of education in the country will have a transformative effect on these young minds, creating an enabling eco-system that will allow students to compete and be eligible to fit into education and career opportunities anywhere in the world. It will allow them the opportunity to understand and reflect on their future career prospects and enter the career discipline of their choice as opposed to locking into a narrow specialization early on in their student life. The various aspects of the NEP 2020 that allow students to move across disciplines and yet leverage their earlier grades, shift institutions, have a credit bank, etc. will greatly make undergraduate education more flexible, allowing young students access to a holistic learning process. I envision a great opportunity for premier universities such as FLAME to play an all-important role in catalyzing the higher education system in the country and shaping the future of tomorrow's India. At FLAME, we have been implementing a multi-pronged approach towards imparting education and conducting research. We have revitalized our research capabilities and recruited some of the best academics and practitioners to join our faculty. They don multiple roles, from being teachers, guides, mentors, and published thought leaders. Our campus is a hub of knowledge creation and dissemination through a wide range of activities. Faculty efforts have a direct bearing on achievement in the classroom and beyond.

We are also witnessing an increase in interest in multi-disciplinary education and in the number of aspirants year on year, and we are hugely encouraged by this phenomenon. It is interesting and important to note that this surge in demand for liberal education is being fuelled by both the industry and the student community, which, in my opinion, makes it a balanced, developmental phenomenon.

A country's growth is dependent on various factors. Its human capital is the most important one, and this holds true for India as well. India is home to the largest percentage of young people in the world, and this is a huge advantage that it can leverage. If we want our human capital to be equipped to lead the country's growth, we need many high-quality institutions and the latest tools of education to hone the skills surrounding us. We need to grow our institutions so that they further consolidate their positions among the world's top educational centres. Our education system needs to be renewed to combine the best practices across the world with an equally important focus on incorporating the rich legacy of our own age-old wisdom and traditions. Doing this will ensure that this time, the next "revolutionary idea" comes from India.

FACULTY CONNECT

Interview with Prof. Sunil Rajpal

SUNIL RAJPAL
Assistant Professor of Economics

Q: Tell us a little about yourself and your academic work.

I am an economist by training with a graduation in Applied Economics from Bundelkhand University, Jhansi. I did my Ph.D. in Economics from the Central University of Gujarat, Gandhinagar with institutional doctoral support from the Institute of Economic Growth, Delhi (ICSSR Doctoral Fellowship).

Since my graduation days, I have had research interests in monetary economics, and I have worked on measuring lags in monetary policy transmission mechanisms in India. To put it simply, using econometric methods, we computed time lags between monetary policy decisions, implementation, and their impact on the macroeconomic indicators. during the M.Phil. coursework, I developed an interest in development economics and policymaking in India. More particularly, reading on issues pertaining to population, health, and development piqued my research interests. My M.Phil. research examined demographic transition (changes in the age composition of the population over time) in Gujarat and its impact on the state's economic growth. During my Ph.D. at IEG, I further read and explored the important research gaps in health economics. During this, I learned to understand the issues of disease burden in India and its socioeconomic patterning, aging-related health and economic problems in the country, the financial burden of diseases in India, and an aligned policy framework for healthcare access. During my Ph.D., I learned and developed data analytics skills and abilities in the domains of population, health, and development during my time at IEG. Besides this, I was also fortunate to work on maternal and child nutrition issues and aligned policies, which helped me to understand the extent of the problem of deprivation and undernutrition in India.

Q: Can you talk about the interdisciplinary nature of your research which allows or necessitates national and international collaboration?

Research and policymaking on development issues warrant an interdisciplinary nature of work. This is because policymaking at all administrative levels requires the convergence of several disciplines, including economics, sociology, geography, medicine, technology, data analytics, public policy, public health specialists, and administration. For example, our current research focuses on enhancing targeting strategies—identifying, quantifying, and examining the high-burden areas—to reduce the burden of anemia among women in India. This entails an intersection of a few disciplines, like statistics and econometrics (for data analysis), geography (to locate and map high-burden areas), public health (the epidemiology aspect), and public policy. This necessitates vertical and horizontal collaboration across disciplines, institutions, and nations to bridge the expertise across all policy tables.

Q: Please tell me about your current position and role at Korea University.

I am affiliated as a Research Professor at the Department of Public Health Sciences, Graduate School of Korea University, in Seoul. The position is funded by the Korean government through its BK21 (Brain to Korea) fellowship program for international scholars in their respective research domains. The primary role in this position entails an exclusive focus on research with the assigned faculty of the university.

Q: Can you briefly describe your current research at KU?

"Once a problem can be seen, it can be solved", India Policy Insights

At the KU Global Health Lab, I was working on an initiative, India Policy Insights (geographicinsights.iq.harvard.edu/about) <Link this>, with Prof. Rockli Kim and Prof. S.V. Subramanian, Harvard University. The initiative derives its primary motivation from the urgent need for evidence-based policymaking and therefore aims to enhance the precision of public policy and governance in India in the areas of population, health, and development. Most of the Government of India's programs in India are designed, targeted, implemented, monitored, and governed at the district level. However, the district as an administrative policy unit elicits several geographical heterogeneities. Considering local-area variations within these units is imperative for effectively targeting high-burden pockets and, therefore, efficient resource allocation. In IPI, we aim to estimate and map precision-weighted estimates using secondary sources of nationally representative microdata on health, nutrition, population, education, agriculture, water resources, and basic infrastructure. Some examples of these datasets are the National Family Health Survey (NFHS), the National Sample Survey (NSS), and the Census of India.

Drawing upon these datasets, the idea is to link all the district and sub-district identifiers to the policy units to produce precision weighted (using econometric tools) estimates for Parliamentary Constituencies (PCs), Assembly Constituencies (ACs), and villages/blocks in India for better targeting and governance. My role at the KU lab was to handle the data analytics part for both direct and indirect estimations. The final product of the initiative will be interactive platforms to present and visualize the data analytically. In this regard, our recently released "NFHS PC Tracker" offers detailed analytical insights on 85+ indicators from NFHS for all 543 PCs in India. You can visit the following link for further details:geographicinsights.iq.harvard.edu/nfhs-tracker-pc

Q: Tell us about your recently published research and what topics you are currently working on (besides IPI) at KU.

Our most recently published work was entitled "Quantifying small-area variation in anemia among women and children in India". Given that one in every two women in India is anemic, targeting high-burden clusters is crucial from a policy standpoint. However, the current strategy for targeting high-burden areas is based on district-level averages, which fail to capture the small area variation across micro-geographical (small area) units such as villages and blocks. With this motivation, we analyzed data on a sample of more than 6 lakh women and 2 lakh children to estimate the variation in the prevalence of anemia within macro-geography (i.e., states and districts). The findings were really interesting and suggested that accounting for variation within a district is essential to targeting high-burden pockets in India. At present, we are exploring the trends and patterns among unvaccinated children in India.

Q: What are your future research plans at FLAME University?

"There is nothing a government hates more than to be well informed, for it makes the process of arriving at decisions much more complicated and difficult.", John Maynard Keynes

I am planning to further our current work on IPI with a focus on deriving village-level estimates on a range of health and development indicators. In addition to this, developing a health policy lab at FLAME University will be our near-future priority. The plan is to enhance the use of large-scale datasets to promote evidence-based policymaking, starting with a few of the most relevant contemporary health policy issues in India. For example, the number of unvaccinated children in India has increased because of disruptions caused by the COVID-19 pandemic, and hence, understanding the geographical and social distribution of such kids can offer valuable policy insights. Another example would be the dietary diversity among children in India. Less than 20 percent of children (6–23 months) in India receive Minimum Dietary Diversity (consumption from at least four food groups in a day). While studies have identified dietary diversity as an important marker of undernutrition, data-based evidence on such issues is seldom discussed on policy tables. Therefore, the plan for the near future is to work on such issues to support policymaking at all administrative levels in India.

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Dance - A Multifaceted Art Form

PRIYA JOSHI
Academic Specialist of Dance

What does dance mean to you?

When a question is asked, especially to young dance students in undergraduate programs, such as "Why do you dance?", two answers generally received are "It helps us express our feelings or emotions" and "It makes me happy".

These answers underline the reality that they do not look at dance as a medium for earning profit or creating material wealth. It purely means a medium of expression for them. This is good news. They have faith in dance as a means to achieve happiness that does not require money. Thanks to hormones like endorphins, dance reduces stress through physical activity. It's not wrong to assume that those who dance have a slight advantage over others in terms of the production of these happiness-inducing hormone responses. In the process of practice and performance, dancers develop strong bonds with their bodies. After all, the body is the instrument for creating dance.

How would one describe dance?

Dance is a performing art described as poetry in motion, visual music, or a form of non-verbal communication. For many, it's a celebration of life.

It is an art form that includes the graceful coordination of different bodily limbs set to rhythm and melody, along with the interpretation of poetry through codified or non-codified gestures.

We have all been exposed to dance in some form or another since we were children, whether it was at a family wedding, a Navaraatri Garba and Dandiya, a school gathering, or through the media. Bihu, Bhangra, Lavni, Kathakali, Hip-Hop, Jazz, and others are mentioned by students when they are asked to share the names of dance forms they know. A student of dance is introduced to different genres, including traditional, folk, martial, tribal, Indian, western, classical, or contemporary. It opens up the entire fabric of dance for them, including the region where the dance form belongs, the climatic conditions within which the dance is performed, cultural nuances, unique music that reflects in the dance, and so on. This enriches a student's learning of a dance beyond just the physical expression.

Is there any relationship between dance and life?

Dance is said to have four main pillars: movement, music, space, and energy. These elements are ingrained in human life in many ways, but there seems to be a lack of awareness about them in most circles.

Movement: The human body is a marvel, with 206 bones supporting muscles. Different joints are meant for movement and not for sitting idle. Hence, a child starts moving immediately after birth. Dance seems like a magical experience when movements created through free or controlled coordination of different limbs carve lifelong memories in a dancer's mind.

Music: Music is comprised of two aspects: melody and rhythm. It involves various sounds and tonal qualities to start with, not just instrumental or vocal music. A child immediately understands when a mother scolds him due to the change in her voice and tone. The heartbeat (or a person's pulse) is the inner rhythm of every living being. In a metaphoric and physical sense, the beat matches external rhythms in nature like the waves of the ocean, the swaying of coconut branches, and gusts of wind. An understanding and support of music takes art and creativity to a higher experiential level in dance.

Space: In life, one experiences feelings of freedom in many ways; a mountain walk, openness at the seashore, or any number of places. In contrast, encroachment on space suffocates any layperson, not just an artist. Hence, the element of space and a connection with space are of utmost importance for a dancer. It's not just the physical outer space that is in question; it is also the inner space within the dancer that matters.

Energy: Energy is a vital element for human life as well as performance. One can experience it in different forms. Energy: Energy is that which gets passed on from individuals to each other in a given space. On the contrary, energy generated from the burning of fuel makes machines run. In dance, when the audience experiences the vicarious energy generated by a performance, a skilled dancer marks it as an impactful performance.

Why should one learn dance?

Learning to dance has many benefits. The first and foremost is to find focus—internal focus—which helps in locating body balance as well as easing out not just a dance movement but also the day-to-day activities in life. Regular practice helps develop and enhance motor control skills. Dance can even contribute towards personality development through strengthening the mind-body connection. As the saying goes, "A sound mind resides in a sound body," so it stands to reason that dancers would be less affected by some of life's stresses. As mentioned at the beginning, dance serves as a stress buster. It creates an opportunity to express oneself. It creates a non-judgmental space to improvise, experiment, express themselves, and encourage learners to do things practically, which can boost their confidence in life. Dance is an all-inclusive art form that uses the body as an instrument to express itself. As a result, the dance practitioner would benefit from improved nonverbal communication skills. Learning to dance teaches you to appreciate the beauty and aesthetics around you. It can help to develop an aesthetic approach to every aspect of life. Last but not least, one should learn the art of dance simply for its own sake rather than as a means towards another skill or perspective. Dance, being a performing art, is something one needs to learn by doing it repeatedly. It's a kinesthetic form of learning. Unfortunately, very often, it is considered secondary in our social or educational systems. Students might have watched others dance; they might have enjoyed watching it but were not able to or encouraged to try it themselves. The reasons could be many, including stage fright, shyness, lack of confidence, and doubts about one's ability to move, dance, sway, jump, stop, turn, or twist. Today's lifestyles have reduced most daily movements to only a select few: sitting, lying down, or simple machine operation. Therefore, dance breaks that routine—and students feel it right away. Their eyes shine with inner beauty, spreading joy and happiness. Slowly and steadily, step by step, they acquire the skill to demonstrate complex dance patterns efficiently. This process-oriented journey helps them find or enhance confidence.

With the changing times, dance is no longer just restricted to an art form, performance, or creative act but has also extended to different spheres of life like therapy, education, research, management, entrepreneurship, and many others. The art form has now opened up career options as well as a source of income for many. It must be remembered that such opportunities could be available for well-trained and qualified candidates in the practical or theoretical aspects of dance. A gifted dancer also needs to acquire training to sharpen performance skills and study the theoretical underpinnings in order to draw various links between theory and practice.

Last but not the least - Why does dance matter?

Being in India, we can answer this question in the Indian context. Like Indian philosophy, Indian dance emphasizes the journey to Brhmanand and Moksha. It's a freedom from one's own self and a path towards oneness with the ultimate truth of life: the liberated state of mind. Dance is one such art form that fades away while being created in space. One cannot store it or convert it into a museum piece. It has a momentary life, yet so much is possible for both practitioners and audiences within that precious, temporary moment.

THEMED ARTICLES

Understanding The Indian Musical Reality

SAMEER DUBLAY
Senior Academic Specialist of Music

Introduction

At the outset, one needs to be aware of the necessity of clearly understanding the idea of "music", and then one could make an attempt to grasp the totality of Indian musical reality.

Therefore, it is very important to clearly state the scope of the concept called "music". Generally, one would like to believe that what one generally refers to as "classical music" is real music. Nearly all discourse in music revolves around classical music, a lack of clarity at the conceptual level, and the use of extremely flowery language that blinds the real point. All these difficulties create a situation where one feels as if the misconceptions are the real theory. One example of such a misconception is the idea of the "sama" of the taal. One finds that the general understanding of "sama" is that it is the first maatraa of the taal. This formulation is questionable, as the idea of maatraa, on the conceptual level, denotes a space between two beats, whereas when one talks about sama, it is about a point.

Dr. Ashok Da. Ranade has been instrumental in getting rid of these problems and steering clear into the territory of music-making. "Music is a very broad concept; It has been flowing through six main categories of music in India for at least two thousand years. Primitive, Folk, Religious, Popular, Art, and Confluence are the six categories of music that constitute the musical reality in India. The so-called classical music or art music is only 3-5 % of the total Indian musical reality. The rest of the music making has a wide range of musical expressions, so one needs to look at those with eyes and ears open". This was his suggestive comment, which one has to take as an important instruction, and that could become the central thought in one's understanding of music.

Defining Music

Keeping the broad spectrum of categories of music in mind, it becomes important to define music in the broadest possible terms. In the literature on music, one finds several positions. The most common and widely used definition is "गीतं वाद्यं तथा नृत्यं त्रयम संगीतं उच्यते। Geetam Vaadyam tathaa Nrityam, trayam Sangeetam uchyatey". This definition actually deals with the performing directions and expressive strategies that the human mind has developed in the area of making music. It indicates the presence of different tools like literature and voice in Geetam, instruments in Vaadyam, and the human body and other accessories used for movement in Nrityam. It remains unclear as to what happens at the conceptual level when one says that one is talking about music.

What is Music?

So it is proposed that the following statement be taken as the starting point for the conceptual understanding of music: "Music is nothing but an effort to move away from Prose". This should be considered as the beginning of the territory of music making. The moment one takes this position, even the versification of language becomes part of the musical spectrum. The meters in poetry then become part of 'music' as a concept. It opens up the area of musicality in language for further exploration by the student of music.

Six Categories of Music in India

With reference to the topic, the six categories of music as stated by Dr. Ranade, namely Primitive, Folk, Religious, Art, Popular, and Confluence are important for the discussion.

Two basic Positions

Dr. Ranade starts his conceptual framework of musical reality in India with the position that "music making in India does not mean Art Music or Classical Music alone." And the second position, which is at the core of his framework, is that music in India is created as a response to three basic cycles of human life: first, the day and night cycle; second, the cycle of seasons; and third, the birth and death cycle. To comprehend the musical totality of Indian music, it is divided into six categories. The categories are as follows:

Primitive Music:

The musical expression "primitive" is an indicator of a structural phenomenon and not a value judgment. Some of the important features of primitive music are the following:

- Primitive music is closely associated with a community's daily routine and seasonal activities. Almost all the occasions in human life are connected to musical expression and create the musical repertoire of the community.
- In primitive music, "song" is more important. Here, the song has a different meaning. It is not a lyrical form put to some tune and rhythm, but any expression that is collectively and compositely expressed.
- Primitive music is also ritualistic in nature. The complete and total willingness of the participants and music makers, their insistence on the details, and their state of being possessed during the actual performance—all of these make the primitive music ritualistic. The recently concluded Ganapati Festival demonstrates the groups dancing to the Dhol, Taashaa, and/or to DJ music. These are urban primitive music expressions.
- The role of the audience in primitive music is very peculiar. Most of the people in the audience are also participants in the music-making activity.

Folk Music

Folk music is a large category that deals with regional expressions of musical traditions that celebrate life occasions like birth, death, strong crop yields, good rains, etc. It is indeed noteworthy that there are almost 18 folk music traditions.

Some of the important features of folk music are the following:

- Collectivity is the core feature of folk music traditions. Right from the conceptualization of a song to the actualization of a song, the entire gamut of activities of ideation, performance, and dissemination of a folk song is done essentially by a group of people.
- The core idea of collectivity leads to another very important feature of folk music. In folk songs, one finds a general appeal to collective emotions rather than personal emotions. The celebration of life events also indicates an element of collectivity. As a result, when a song about the birth of a child is sung, it contains references to the popular deity Krishna. The moment a deity like Krishna is mentioned, it no longer remains personal but becomes universal in the sense of collectivity.
- Folk music survives the test of time. It is always making a statement about collective consciousness and not individual consciousness. So the creation of folk music is a continuous process. A song that has been sung for generations is resung with the addition of a few lines.
- The emergence of a complete song is an important feature of this category.

Religious Music

India is a land of religion and beliefs. Each religion uses music to communicate its message to people. At least six well established religions with hundreds of cults and babas, gurus, maulavis, missionaries, and others are involved in the creation and usage of religious music. Religious music operates on a very broad scale. The prime objective of religious music is twofold:

- to use music as a binding force to unite people.
- to communicate religious philosophy through various types of songs.

Religious music as a category borrows from all the other categories of music. Religious music, or Dharma Sangeet in India, consists of three sub-expressions, described as 'Ritual Music' or 'Upasana-Sangeet', 'Bhakti-Sangeet' (Devotional), and 'Goodhaatma' (Mystical). Musically, all the expressions are important and relevant in the present context.

Popular Music

Popular music includes everything from ring tones, doorbells, and reverse horns to jingles, soundtracks, and more. It is the biggest category of music in India. This also takes music-making to the level of an "industry". Phrases like 'commercial music' and 'music industry', have become part of the discourse. Among the music that belongs to popular music, film music occupies the largest space in terms of the creation and dissemination of film songs. Globally, most of the time, Indian music is equated with the Hindi film music popularly known as "Bollywood music".

In popular music, as the name suggests, the number of people listening to this kind of music is very large, and that helps a musical expression be viable as an 'industrial product'.

It also entails that every popular music has a definite shelf life. Newer and latest songs replace the trending songs of today very swiftly and smoothly.

The element of being the music of the moment, "contemporariness" is another important feature of popular music.

Confluence Music

This is the category of music where more than one musical tradition comes together to create a musical expression. The general understanding of confluence is expressed through a widely used term: "fusion music." This is a kind of music where musicians from different systems and traditions of music come together to create a musical performance. However, one has to understand that fusion is only a strategy of confluence. Confluence is created with the help of four methods that bring together musicians from different systems of music. The four methods of confluence are as follows: fusion, mixture, compound, and juxtaposition.

All four strategies result in a large body of musical expression, with new and more confluences emerging.

The interplay between the known and the unknown (or the familiar and the alien) becomes extremely exciting with two basic attitudes. One is to have equal respect for participating cultures (Samikarana). And the second is to have a ripe attitude toward the practitioners of this approach (Paripakvagrahana).

Important features of this category of music are the following:

- The presence of more than one musical tradition: generally, Indian and Western musical traditions come together to create confluence. The best-known example is Yehudi Menuhin and Pandit Ravi Shankar's confluence music.
- Inter-category Confluence. It is always a possibility that music from different categories will come together. There are confluences happening between art music and folk music, as well as between art music and religious music and between folk music and religious music. Film music in India is the greatest example of a confluence music factory, as several musical traditions have come to merge with each other and create an entity, Bollywood music. Bollywood music is often considered a melting pot of musical traditions from all over the world. It is the most versatile and creative breeding field for confluence music.
- This category is constantly creating new expressions. In the western musical tradition, this is also called "new music".

Art Music

Popularly known as "classical music", India has at least two main traditions of codified music: North Indian Khayaal, and Carnatic music.

The North Indian Khayaal Tradition

This is prevalent mainly in the northern part of India. This tradition is one of the important musical expressions of India, being taught and performed in 70% of the country's geographical area of India. It is also an important cultural manifestation that could not be colonized even during the British Raj. Starting from Saam Gaayan to Jaati Gaayan to Prabandh Gaayan the Dhrupad, Khayaal evolved through centuries of collective thinking of Indian hearts and minds and became a popular form of Raag Sangeet. Rendition of a chosen Raag is the core activity in this form.

The general structure of a performance is also quite unique, and most of the artists follow a similar structure. The category is named "art music" because here the artist claims that she is creating a work of art. There are two main features of this category:

- The code is very well defined.
- A process of abstraction is involved.

The Raag structure is an abstract entity, and the idea of Taal is considered a more concrete frame. The two are combined in a composition called a "Bandish." The form of Khayaal treats Bandish as a platform for the presentation of a Raag. It provides the artists with a framework for presentation, and the composite frame of Raag and Taal through such Bandish also provides a concrete structure for the presentation.

The dialectical interplay between the concrete and the abstract makes this category of music particularly interesting. When a Raag is presented, it is always presented through a Bandish, which is quite a concrete frame of reference. The rendition of the Raag, however, is done as a spontaneous creative elaboration of a musical idea, which takes it into the realm of the abstract again. So a musical design is created that is abstract in nature, and the artist returns to the concrete through the Bandish. This process of constant interplay between concrete and abstract continues throughout the performance.

Voice and Gharana

The voices of the singers, the process of rendition, and the elaboration of the Raag structure are further developed into different styles or musical ideologies, which are understood as Gharanas in Hindustani Music. The aesthetics of presentation have a sense of continuity and progression. The variation in quality of voices results in diverse musical approaches to presentations and aesthetical positions, which in turn would try to answer the wider cultural and musical question: Why does tradition in fact become a tradition?

Features of musical categories

- Some important features of these musical categories are as follows:
  All the above categories are not watertight compartments.
- A lot of give and take happens within the categories and with other musical cultures as well.
- The six category formulation is one framework available to comprehend and make sense of the musical reality in India.
- D. Ranade had recently considered electronic music as an independent category but had not yet included it in the framework.

Dr. Ranade always said that music flows through two channels. One is the performing tradition, and the second is the scholastic tradition. Scholastic tradition is always two steps behind performing tradition. It theorizes the performance.

THEMED ARTICLES

The Future of Design Education Is In Liberal Education

AMIT KUNDAL
Associate Dean of FLAME School of Design, Art and Performance

Over the years, design has advanced to tackle opportunities and challenges in the most innovative ways. The value of design is beyond just uplifted user experiences: it involves refreshed approaches that are increasingly employing concepts across areas such as psychology, behavioural science, strategy, technology, business, and more. Design works in tandem with methodologies of thinking and making. Today, the growing prominence of design and its business value for industries across domains has pushed educational institutions to integrate design education into their curriculum actively.

Design Education

Design education in India commenced in full swing in the mid-1960s. Back then, the design was primarily associated with visual aesthetics, and obtaining formal education in design was considered a bold and unorthodox move. Design as a point of intervention has established a much stronger relevance in today's world. This requires design education curricula to continually transform to keep up with the evolving industry expectations and be well-versed with other related and relevant fields to match the current expectations of designers and clients. Yet, there are some roadblocks that this stream of education faces even in the midst of its growing application and adaptability.

The Roadblocks

With the growth of this field, there has been a growing focus on the human experience through design. Designs are made "human-centric" to cater to an individual's needs and preferences, but now there is a need for life-centric approaches, where opportunities need to be harnessed from the lens of systems, and the needs of stakeholders, whether human or non-human, need to be addressed. Additionally, design should be consolidated with other related fields to develop a well-rounded perspective before approaching issues and opportunities. Therefore, design education needs to mitigate these gaps and adopt a holistic approach to match industry requirements.

Our first-hand interaction with students and industry associates highlighted the incorrect positioning of design and designers along with a siloed design education curriculum. There is still a perception of design being limited to aesthetic creativity, and therefore, the scope of the field is undermined. With the mushrooming of smaller design institutions, there is a significant difference in the interpretation of design that hampers the credibility of well-established design institutions.

A novel approach

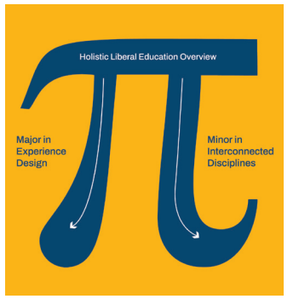
The structure of Liberal Education at FLAME University offers an array of subjects for students to explore and learn from, and the integration of design education within this curriculum will be advantageous for students to derive value from multiple knowledge areas. Considering that design is expanding from a practice-oriented approach to knowledge creation, a thinking-and-doing-focused approach will sit well in the liberal education context. It will allow for multidisciplinary and holistic learning while focusing on humans and humanity.

Extending the current offering of Design as a minor, FLAME University has launched a 'Bachelor of Design Degree (B.Des) with a Major in Experience Design. Staying true to the process of design, the vision of this new program is curated through a meticulous approach to attending to the needs and expectations of budding designers. The process was initiated by research to understand the positioning and context of design globally and within India, followed by interactions with academicians, industry experts, students, and parents to gain deeper insights and diverse perspectives. Primary and secondary research revealed certain roadblocks and gaps in the field of design and design education that ultimately led to brainstorming a cohesive curriculum that aims to address these gaps and looks to redefine and enhance the perceived role of designers.

What FLAME offers

The aim of the Design curriculum at FLAME is to be in sync with the global expectations of designers while evolving to keep up with industry standards. As a result, the course is established five key pillars fostering critical competencies among students:

1. **Breadth and depth of disciplines**: A pi-shaped (ϖ) curriculum that allows students to explore the breadth of subjects (the horizontal) and dive into an area of interest to increase expertise complemented with a niche skill set (the vertical), while the second vertical is associated with other related fields such as psychology, sociology, business, etc.
2. **Diverse yet complementary perspectives**: Recognising the need and value of varying perspectives and possibilities and applying them to design and related fields.
3. **Insight-first approach**: Adding novelty to existing knowledge, through research and/or experimentation.
4. **Systems thinking**: View a problem or opportunity holistically yet systematically within its context and thus, explore it holistically.
5. **Making and doing**: A hands-on and engaging approach that encourages students to explore the realm and scope of tangibility and creation.



The course is an amalgamation of humanities, management, and technology; it encompasses different subjects and skillsets based on four design pillars:

- **'Makers and doers'** to encourage prototyping and hands-on making competencies
- **'Psychology and sociology'** for the cognitive and behavioral understanding of people and social philosophy to apply to design
- **'Strategy'** for business and entrepreneurial acumen to complement innovation
- **'Technology'** for data understanding and application, and immersive media to push the scope of design

The course leverages the liberal approach of FLAME and presents an opportunity for students to personalise their course to better suit their needs by allowing them to explore different subjects through the lens of design. Students will be able to choose from a plethora of electives that span these four design pillars. A multidisciplinary approach such as this cultivates competencies that no longer limit individuals to one area of knowledge. Such cross-pollination of disciplines and knowledge is central to making this course holistic.

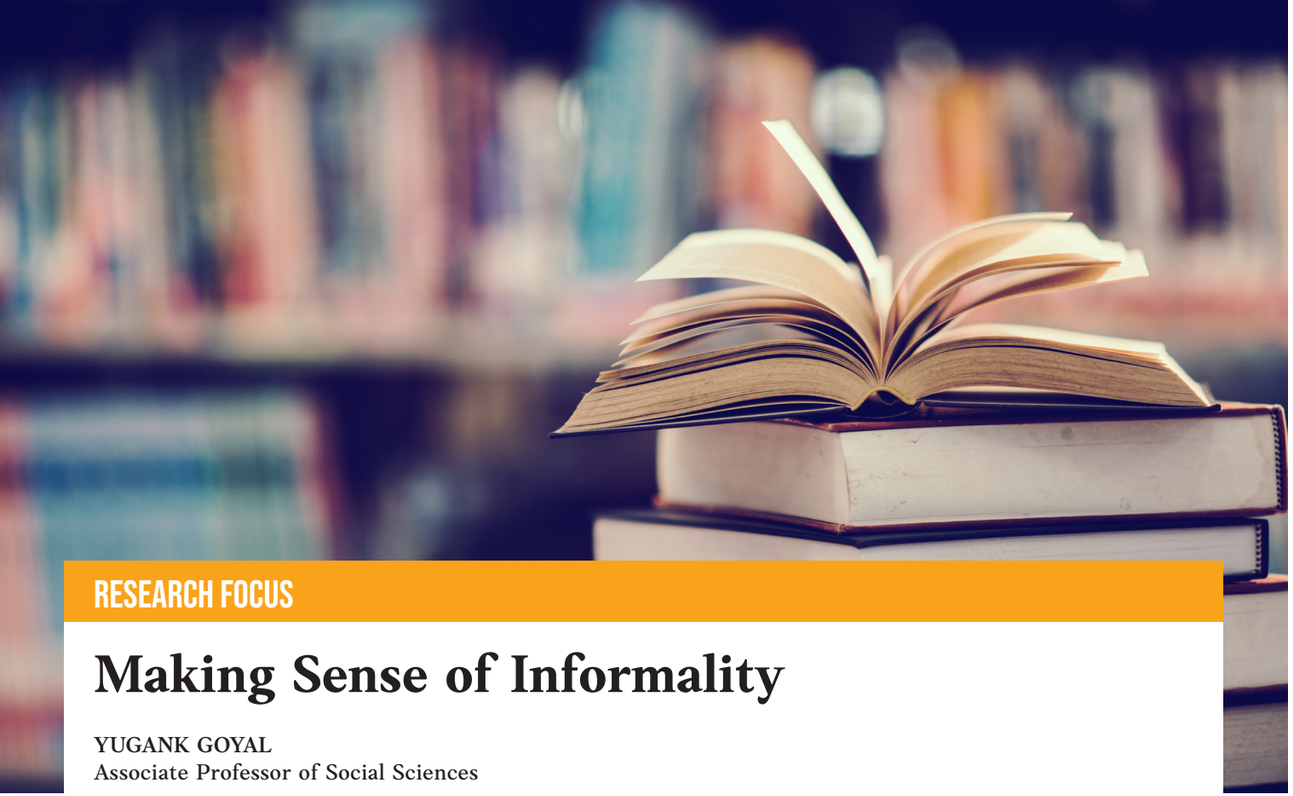
An 'Ideal' Outcome

The program aims at developing competencies and attributes of an 'ideal designer': that of being an effective storyteller, a maker and doer, and a cross-pollinator. Some other attributes that have proved to give designers an upper hand in the industry are the following:

- Effective decision-making skills
- Confidence to handle ambiguity
- Ability to identify problems
- Understanding the viability of products and services in their social, economic, and environmental contexts
- Having a systemic perspective to approach issues
- Ability to identify patterns, frame insights, and understand mental models behind data
- Ability to prototype and experiment
- Ability to realize ideas with relevance to the current market

The course is built on an 'experience-centred design' curriculum crafted for 'the future designer': one that will not just be able to envision ideas and execute them, but also create and radiate knowledge. FLAME's Design education philosophy revolves around equipping students with relevant competencies and positioning the field through a composite and consolidated curriculum with equal emphasis on a worldwide systemic view. By the end of the course, students will be equipped with critical competencies to take on challenges regardless of complexities, showcasing that designers bring uncompromisable value to the table. This is the vision that FLAME is embarking upon and we're enlisting the support and participation of all of our community to do it.

RESEARCH FOCUS



RESEARCH FOCUS

Making Sense of Informality

YUGANK GOYAL
Associate Professor of Social Sciences

Why do informal markets remain informal even when the gains of formalization are high? Why do people continue to follow the prevailing informal institutions even when the newly announced formal laws are more beneficial to them?

Consider Agra. It is one of the largest leather footwear clusters in India. There are thousands of shoemaker artisans (dastakaar) who make shoes by hand, in their homes – an art that is centuries old and pays very little. They sell it to large traders in local wholesale markets (hing ki mandi), who then sell it to retailers. All of these sales are, however, on credit. Artisans sell their goods but have to wait for almost three months until they get paid.

This poses two problems. One, how do traders give credible commitments to artisans that their payments will be made? Second, the artisans need money today to buy raw materials for tomorrow, but how can they do that when payments are delayed?

The market solves these problems using an institution called a parchi. While buying the footwear from the artisan, the trader gives him—almost all market players are male here— a handwritten parchi (paper slip), which bears the traders name/letterhead and where the amount and due date are written and signed. On the due date, upon showing this parchi, the artisan will get his money. If there is sufficient trust in the market, this works. People will stop trading with the trader who reneges on his promise, fearing that the trader usually fulfills promises.

But what about the second problem? Well, herein lies the ingenuity of the informal institution of parchi. This parchi becomes tradeable in the market at a discount. Just like a commercial paper. So as an artisan, when I come out of your trading shop bearing your parchi, worth say ₹10k, I will perhaps find a middleman (aadhatiya) who will purchase it at say ₹9.8k, which is a 2% discount. The trader gets the shoes, I get my liquidity, and this middleman will go to the trader on the due date and get the entire sum, and he will earn that 2% interest (discount to me is the interest for him).

An interesting question is, "How does the middleman decide the discount or interest rate?" In other words, should he purchase the parchi at a 1%, 2%, or X% discount? Well, it depends on the creditworthiness of the trader who issued the parchi. If the trader is known to have fulfilled his promises in the past, the interest rates on his parchi will be lower than those of someone who doesn't keep his promises as well. Given the information symmetries in the market, artisans also know this. They will therefore go to the trader whose interest rates in the market are low. Knowing this, the traders will be incentivized to keep their payment promises to the artisans. Fascinating, isn't it? In fact, a good part of our markets work in a similar fashion, and more than 90% of India's workforce is informal in nature.

My surveys indicated that the average interest rate in the market is around 18%. This is not considerable given the informal cost of liquidity, but it is still a lot higher than the bank's interest rates. Then, why don't people just go to the bank?

This is easy to answer: transaction costs. The cost to estimate creditworthiness of traders or artisans is very high for the bank, as (consequently) will be the transaction cost for securing such loans by artisans or traders. The trickier question is: why can't higher orders of institutionalization with greater efficiency emerge in this market? Said differently, why don't all middlemen come together and form an association where they collectively pool their risks? This suppresses the average interest rate and yet gives a greater surplus to the middlemen. There are indeed questions of power dynamics here that need separate and more detailed treatment. The real question here is therefore this: despite the high gains of formalization, why do markets continue to remain informal?

Several initiatives that attempt to formalize markets often fail to be adopted. For example, NITI Aayog came up with the Model Land Leasing Act 2014. This was an attempt to encourage states to legislate on land leasing because, in the absence of legal safeguards, farmers with surplus land were not leasing it to genuine tenants (both big and small), and at the same time, many tenants were being exploited. The new legislation hoped to assure farmers that they could engage in the leasing of land that would otherwise lie fallow. This was an attempt by the government to enhance efficiency in land use in India.

Several states adopted this model law. When we conducted our fieldwork in UP, Uttarakhand, MP, and AP, we realized people are continuing to follow their customary norms of leasing, and are not particularly keen or inclined to follow the written word.

Think about the recently (April 2021) launched SVAMITVA Scheme (Survey of Villages Abadi and Mapping with Improvised Technology in Village Areas). This is a pioneering initiative by the government in which drone-mapping of rural land parcels will help establish clear ownership of property in rurally inhabited (Abadi) areas. This will result in providing a 'Record of Rights' to village household owners and issuing them legal ownership cards (property cards or title deeds). Solving the problem of clear land titles is expected to not only reduce property disputes but also enable property owners to put up their lands as collateral and secure loans.

The scheme is being implemented aggressively. In less than a year, millions of land parcels have been digitized and covering lacs of villages where thousands of property cards are already provided. One would expect that in addition to offering secure land titles, this would have unlocked financing possibilities, because villagers can now put the lands up as collateral to secure the much-needed loans.

Of the little information that we have in this case, the reality is not encouraging. Banks are not treating these property cards as authentic. They are unable to accept new legal technology and continue to demand the traditional documents, which have been approved by authorities in the past. This is despite the Indian government's mandate that these property cards should be accepted for loans.

In all these cases, we discover a unique, although similar, problem. It is not that formalization is costly for the stakeholders. They simply do not want to move to another institutional design. As rational individuals, they have all the incentives to do so, but they don't. Scholars have tried explaining it, but there isn't any solid explanation established yet. Development scholars discuss transaction costs or tax burdens. Economists interested in path dependency lament switching costs and institutional inertia. Those conducting RCTs show that the benefits may not be big enough to knock the market player into a new economic orbit, and hence there is hardly any incentive. Scholars in law and politics argue that enforcement apparatus and state capacity are the keys. Behavioral economists and psychologists rely on bounded rationality and even the lack of vision that informal market players have.

None of these arguments is incorrect. They are all trying to illuminate the phenomenon beyond what meets the eye. But we still don't have a comprehensive theory around it.

What's most interesting is that while this question has plagued scholars for so many years, an ordinary Indian finds no difficulty in understanding it. For instance, when you tell an Indian why people are following age-old customs and not the government's rule, they don't find it surprising.

Are scholars trying to theorize informality or their own experience of informality? The two are very different conceptual apparatuses.

I went into these markets without the standard question in mind. I began chatting with people I met, not asking why they did something or didn't. I was curious about the knowledge systems they operate under. I learned they worked more through tacit rather than explicit knowledge. Unwritten, untheorized, action-as-knowledge was the knowledge commons used in their transactions. There was no theory, only action. And this empiricism allowed them to predict and function in the market/world. Crucial knowledge on which the market/institution was hinged, could not be written down like a doctrine. It was 'tacit knowledge', a know-how type of knowledge that is hard to codify. It is in this knowledge system that they functioned, which made their informal institutions 'credible'. The two papers I wrote employed Polanyi's (1968) concept of tacit knowledge and Ho's (2014) credibility thesis.

So to summarize, in Agra's market, knowledge of the creditworthiness of traders is tacit by nature and difficult to codify. Formalization will not be easy because it cannot costlessly match the functionality of the prevailing institution of parchi. In the examples of government schemes, existing informal leasing and lending institutions exist as tacit knowledge in the minds of stakeholders and are therefore highly functional. The new schemes were not working because they did not codify what existed but transplanted it in a new form. Form is not as important as function.

What is the lesson for policy here? When formalizing an institution, the new policy must identify the currently used tacit knowledge and try codifying it (with whatever difficulty). If this is not followed, the implementation will be more difficult, if not impossible. How do we understand and make sense of this tacit knowledge, then? Can technology help? Like AI-assisted dynamic data repositories? Startups are entering informal financing space using technology, doing perhaps exactly that: making tacit, explicit!

DISCOVER INDIA PROGRAM

DISCOVER INDIA PROGRAM

Pushed to The Edges: Socio - Economic Implications of Climate Change and Urbanization on The Koli Community

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The Discover India Program (DIP) 2021–22 has been a novel, demanding, and enlightening experience. The program has given us experiences we will cherish for a lifetime. While the pandemic forced us to shift our on-field research work to complete desk research, we were initially skeptical and worried about how this study would take shape as we decided on this topic with the motive that fieldwork would be at the centre.

We were a group of thirteen individuals primarily pursuing economics, finance, and/or marketing. From selecting a topic to submitting the final DIP report, the entire process has been enlightening. With so many minds working together, agreement and disagreement were inevitable. The group environment was well-balanced; we were aware of our agendas and priorities but also knew how to maintain a lighthearted atmosphere. This resulted in a fluid group dynamic that was stimulating. After countless hours of research, discussion, and shortlisting, we reduced our list of topics, and finally, we decided our DIP focus: Pushed to the Edges: Socio-Economic Implications of Climate Change and Urbanization on the Koli Community.

The Koli fishing community, the original residents of Mumbai, have been living and working along the coastal waters of the seven islands that make up the present-day city of Mumbai for over 500 years. The Koli community is responsible for the names Worli and Dongri, two well-known locality names in Mumbai. In these ways and others, Kolis have left and are still leaving a stamp on the city.

Because of rapid economic transformation and urbanization, Mumbai's fisherpeople, particularly the Kolis, face extreme survival and livelihood challenges. Our research aimed to demonstrate how the Kolis' efforts to reclaim space are also critical to the city's long-term viability. Further, the paper analyzes the impact of climate change and urbanization on the Koli community. This was done by conducting primary research with Kolis, reviewing existing literature, and analyzing data from various government sources. Twenty Koli fishermen association leaders, as well as five fishermen and five fisherwomen, participated in primary research. The respondents were asked questions related to the impact of COVID-19 on the community, urbanization, climate change, and the government's response to it. The survey also included the future generation's interest in continuing the traditional profession.

Our study aimed to answer several key questions:

1. What are the socio-economic implications of climate change and other environmental issues for fishing communities (the Koli community) residing in Mumbai, India?
2. What are some of the major effects of industrialization, modernization, overpopulation, and pollution on these fishing communities?
3. How has the city's unprecedented growth in terms of increased community endangerment from coastal development projects like mangrove deforestation, tourism development, and migrant influx harmed the livelihood of these indigenous fishing communities?

Our literature review analyzed how the Koli community was impacted by the pandemic, climate change, and urbanization. Initially, the paper reviews the fishing sector of India and explains the fish drying practiced by Koli workers. Fish drying has been maintained as a monopoly for the Koli community, with the Kolis drying fish and selling it in Mumbai marketplaces and exporting it to other Indian states. This section also views the various challenges faced by Mumbai fishermen. Furthermore, the paper analyzes the role of fisherwomen in small-scale fisheries and Koli women's fight against the pandemic. Koli women have active participation in small-scale fishing pre-harvest, harvest, and post-harvest operations. In comparison to men, women play a less significant role in fishing, as they are not directly involved in that activity. They rely on their combined power and informal networks to support one another amid the pandemic and subsequent lockdowns when the state belittles them. The chapter on climate change and the Koli community talks about how climate change and uncertainty affect the urban landscape of Mumbai. It then explains the importance of mangroves and how they help safeguard Mumbai and other Indian coastal cities from ecological disasters, preventing us from becoming environmental refugees. The literature review touches upon how urbanization is leading to its extensive destruction and the government's response to the problem. The literature review section also covers how the breakout of COVID-19 imposed a further threat to the community. The pandemic-induced lockdowns were not aligned during the fishing restriction period. The fishing communities missed out on harvesting the fish during March, April, and May, when the population was at its peak. Profits earned here were used to cover operational and capital expenditures.

For the data analysis, we focused on data related to the fishing community from the 2016 Marine Census data concerning our research question. The sample data was extracted and then cleaned according to our research area. After a long process of analysis and inspection, the group was able to create numerous statistics and graphs that either supported or refuted the claims made in the reviewed literature with respect to the fishing communities. These are the key findings of our research:

1. The situation of education in the fishing community with respect to the different genders made it insightful to see that out of all the education levels, female enrollment was higher in only primary education. It was also discovered that after secondary education, enrollments for both sexes drop dramatically. A reason for this was found in a recent study done by Soni, which iterated the fact that females have to drop out after school in order to provide support in various household chores, while males are expected to take up the tasks at the sea, which basically include catching and selling the fish.
2. To begin, we have established that catching fish is a sector that sees heavy and, to some extent, complete male participation. This leaves us with other activities such as marketing fish, making and repairing fishing nets, curing and processing the catch, and manual labor. As a study by D'Souza demonstrates, the male participants are responsible for physically demanding tasks, which in this case include making nets and labor, whereas the female participants take up the duties of marketing, curing, processing, and peeling.
3. The technological advancement of the fishing industry in Maharashtra in comparison to the entire country shows that over 37% of fishermen in Maharashtra use mechanized boats, whereas in the overall country, around 25% of fishermen use mechanized fishing boats. This basically implies that the fishermen of Maharashtra use modern equipment that is mechanically operated in their boats. However, Maharashtra lags behind in terms of propulsion technology because more than 18% of fishermen still use non-motorized boats, which is higher than the 15% figure for India overall.A similar trend is visible in infrastructure, where fishing villages in Maharashtra have much easier access to general infrastructure and institutions like banks, petrol stations, schools, colleges, and hospitals. But not so much for fishing-related infrastructure like drying grounds, freezers, and peeling and curing fields.

Note. Soni, P. (2021) Mumbai's Koli fisherwomen are a close knit community [Photograph]. Scroll.in. https://scroll.in/article/989295/one-cup-of-kadak-chai-how-mumbais-koli-women-survived-the-coronavirus-pandemic.

The weaknesses and limitations of this study are our own, and there is much room for further exploration of the Koli community.

This study may be used as a foundation for advanced studies on understanding the challenges faced by the Koli community. Further studies could combine qualitative and qualitative data based on primary research to create a more solid analysis. Along with interviews, first-hand experience could be gained by visiting the Koliwada and observing the daily life practices of the Koli community, as this would provide a more holistic view.

Note. Pathak, S. (2019). The roots of mangroves, poking through swamp mud, serve as breeding areas for fish [Photograph]. NPR. https://www.npr.org/sections/goatsandsoda/2019/11/25/781990792/mangroves-help-fight-the-effects-of-climate-change-so-why-is-mumbai-destroying-t.

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DISCOVER INDIA PROGRAM

South Asian Intersections: Identity, Difference and Postcolonial Trajectories

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Assistant Professor of Sociology

Nupur Maley, Rheeya Chaavan, Megha Chakraborty & Kavvya Sankritik | Undergraduate Students

"South Asian Intersections: Identity, Difference, and Postcolonial Trajectories" was an ethnographic Summer School organized by the University of Zurich in the summer of 2022. With the explicit aim to nuance our understanding of the region, the Summer School sought to engage voices from across South Asia and Switzerland. From FLAME University, a partnering institute for the Summer School, Dr. Sinjini Mukherjee, Assistant Professor of Sociology, provided intellectual and logistical support while four of our students participated in the intensive workshops and also traveled to Nepal for an ethnographic field trip. The workshop's primary objective was to generate cross-regional discussions among students from South Asia and Switzerland on the topic of South Asia. The cohort included students from India, Pakistan, Sri Lanka, and Switzerland along with instructors from India, Nepal, the US, and Greece. As participants in the Summer School, we are eager to share some of our personal as well as intellectual learnings with the larger FLAME community. The first part of the program consisted of interactive, online workshops conducted by speakers from across the globe, specializing in different areas and themes concerning South Asia. The second part included hands-on ethnographic training in Kathmandu, which entailed guided excursions around the city, independent field research, and interaction with local artists and practitioners, among other things. The Summer School culminated in individual, short-term research projects led by the students, which could be translated into future publications, public intellectual engagement initiatives, and more.

Nupur - Identity and Borders

"I was a child, and like all the children around me, I grew up believing in the truth of the precepts... available to me. I believed in the reality of space... that distance separates, that it is a corporeal substance; I believed in the reality of nations and borders; I believed that across the border there existed another reality". The Shadow Lines, by Amitav Ghosh. This held true for me only until I actually encountered the other person and lived with them for nearly a month. Being able to attend the South Asian Intersections Summer School has been special for me because it has had a profound impact on my understanding of identity and borders. Having grown up learning about Indian history, the Partition, and other ideas, all of these came together to instill in me what it meant to be "Indian". Only during summer school did I realize how permeable these concepts were, and how my identity was much more entangled with and situated within a larger South Asian narrative than a specifically Indian one. The shared history and memory of the region and its citizens made me feel far more connected with my fellow students, who had joined us from Sri Lanka, Nepal, and especially Pakistan, than I had initially thought I would. This was one of the most valuable learning experiences I had during the Summer School.

Rheeya & Megha - Menstrual Rites, Exclusionary Practices and the Performance of Womanhood

In Hindu culture, the color red is often associated with auspiciousness and symbolizes love, strength, bravery, and power. Ironically, though, red is considered equally "impure" in the context of menstruation. Artist and photographer Bunu Dhungana's work plays on this juxtaposition of the color red and how it has played out across her own life. The conversations during her visit took place around the themes of marriage, patriarchy, womanhood, and menstruation.

Red is worn during marriage ceremonies, be it as bridal wear, veils, sindoor, or bindis; it has been a holy color for married Hindu women. Contrarily, it is considered impure at times. Menstrual exclusion in Nepal is known as the "chhaupadi" system. Here, women are expected to seclude themselves and live in makeshift huts while on their periods. The chhaupadi system has brought up several issues of harassment and sexual assault, especially for differently-abled women. This practice has exacerbated the plight of women and negated the progressive steps taken for women's empowerment. Dhungana's work was extremely relatable to us, given that red has also colored our lives with ironies of romance, love, marriage, auspiciousness, and also impurity. Additionally, her art served as an inspiration for us to make sense of the dichotomy that is present in every society's expectation of its "ideal" woman. Like every society, we witnessed a similar sort of dichotomy in Nepal.

Among Nepalis, a woman could be placed on two extremes of a spectrum. On one hand, you can find a prepubescent girl believed to be an incarnation of the Goddess Kali, known as "Kumari" – the living goddess. She wears red since it is the color that signifies the goddess's power. She is pure, holy, unscratched, and untouchable. She lives in a secluded place, away from the public eye, to protect her purity and holiness. On the other hand, when a girl starts bleeding, she is immediately treated as a pollutant, and ironically, as "untouchable". In this case, the red is associated with her "dirty" blood, and she is isolated to "protect" others. In a sense, it is prohibited to openly talk about a menstruating female. We believe that Dhungana challenges the contradictions surrounding the color red.

Kavvya- The Universality of Caste

The universality of the South Asian experience was a comforting yet scary realization for me during this trip. While there was a certain kind of comfort in cultural similarities, like the South Asian practice of mothers oiling our hair, in many ways, the similarities of societal inequalities present through caste, religion, and gender were also quite scary. These parallels served as a hard-hitting reminder that structures like caste are all-encompassing and absolute in the region.

The first time I realized this was during this Summer School, when I encountered the effects of caste in a country I had never visited before. The fact that caste was regarded very similarly in Nepal, just as it is in India, was eye-opening and insightful.

We were visiting the neighborhood of Patan, in Kathmandu, during a guided street art tour of the area. Here I heard the Newari upper-caste temple priests stake their claims on being the "purest and most original Hindus". The proof of this caste-based hierarchy was omnipresent in subtle ways. The upper-caste Newari women working at the temple were readily available to answer any questions regarding identity and caste, while the lower-caste women, who self-identified as "agricultural castes" and were doing the cleaning work outside, seemed hesitant to engage with the same question.

Various parallels are noticed in our country, where casteist hierarchies manifest in direct and not-so-direct ways depending on geography, culture, and various other factors. After conversations with students from Pakistan and Sri Lanka who were part of the Summer School, I discovered that caste-based hierarchies and inequalities are a pan-South Asian phenomenon, be it the low-caste Kammis in Pakistan, who are predominantly shoemakers by occupation, or the Sinhala and Tamil parallel caste systems in Sri Lanka.

If caste-based inequalities are present in the entire South Asian context, how do we then begin to address this issue? To me, this seems like a question that will be daunting for most of us but one that can at least be attempted through cross-cultural conversations like the kinds we had at the Summer School

CENTRES AT FLAME UNIVERSITY

CENTRES AT FLAME UNIVERSITY

Dealing with Climate Change

RAHUL CHOPRA
Director, FLAME Centre for Sustainability, Environment, and Climate Change

SANJANA SINGH
Co-ordinator, FLAME Centre for Sustainability, Environment, and Climate Change

Environmental and climate change are amongst the most critical issues of our time. Their impacts include food, water, and energy insecurity, loss of biodiversity and species extinction, changes in land use and land cover, increased frequency of extreme weather events, effects on human health, human conflict, human migration, and more.

The Centre for Sustainability, Environment, and Climate Change (CSECC) at FLAME aims to address several of these critical issues through multidisciplinary research projects, pedagogical interventions, and outreach activities.

CSECC was established in 2022 and has initiated several projects under its education and mapping labs:

I. Environmental and Climate Change Education through the FutureEd Lab, which aims to create a repository of innovative pedagogical resources to train teachers and learners in Environmental Studies and Climate Change.

II. The Atlas of India Project, through the Map Lab, aims to create an open-access archive of digital maps of India.

Climate Change Education Project of the FutureEd Lab

Climate change is one of the most significant concerns of our time, threatening the lives of people and affecting the entire biosphere. Education can play a vital role in increasing awareness of climate impacts and solutions. The FutureEd Lab aims to create open-access educational platforms with the vision to democratize knowledge and make quality climate change and environmental education accessible to all. It also aims to contribute to the Sustainable Development Goals (SDGs) through education, specifically Goal 4—quality education—and Goal 13—climate change action.

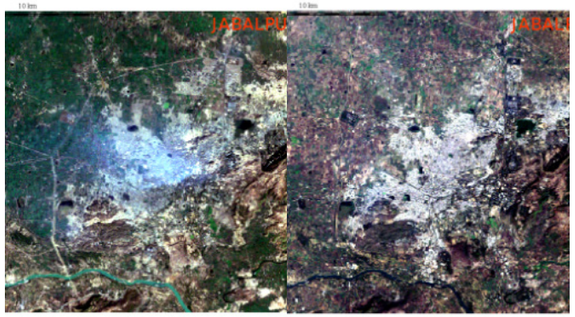
CSECC has partnered with the International Union of Biological Sciences and Project TROP ICSU, a free-to-use education platform of approximately 800 scientifically vetted resources from across the globe that integrates climate change understanding with topics in the sciences, humanities, and social sciences curriculum.

The FutureEd Lab of the CSECC creates educational content and conducts training programs across the world that empower all educators to equip current and future generations of learners with the necessary skills to combat the climate crisis.

The Atlas of India Project of the Map Lab

Geospatial thinking, spatio-temporal data, geolocation, geocoding, and GIS frameworks are expected to be critical components in governance, enterprise development, industry, research, and for all citizens. However, digital access to relevant geospatial data in India remains a challenge. The Map Lab of CSECC seeks to create an open-access archive of digital maps of India through the Atlas of India project. This project will create several thematic atlases. On-going projects include:

I. Atlas of Environmental Change in India that uses satellite data to create Land Use Land Cover maps of India and quantify environmental change of Urban areas, Forests, National Parks and Wildlife Sanctuaries amongst others.



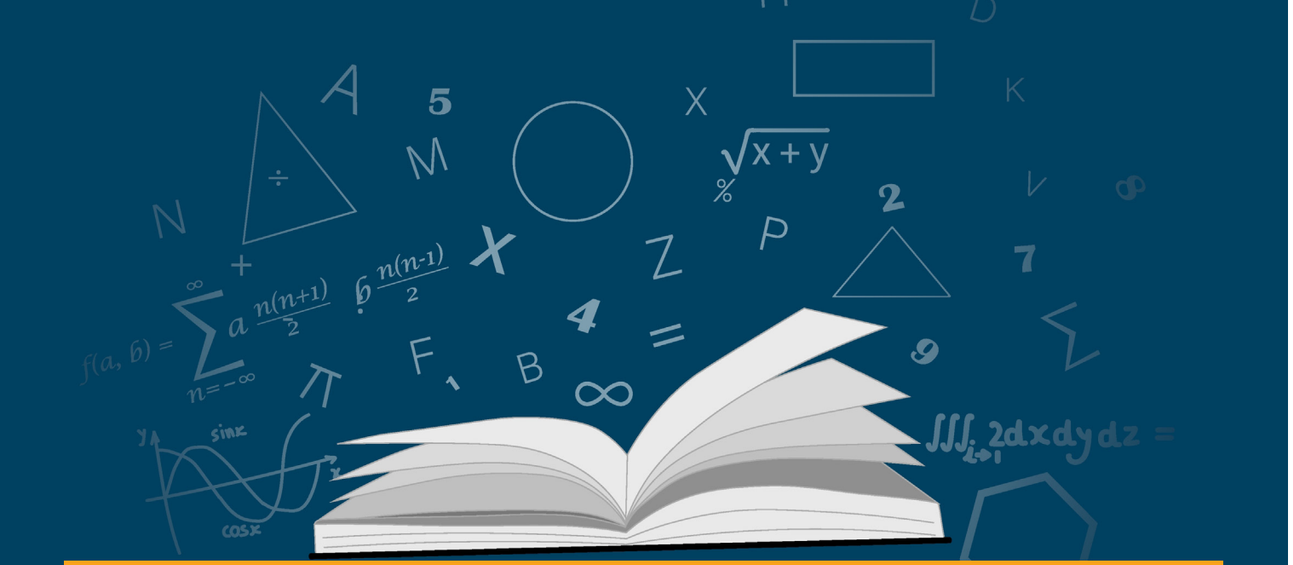
These satellite images show loss of forest cover and urban expansion of Jabalpur from 1991 to 2010.

II. Historical GIS in India to create a repository of digital maps of India from antique, pre-colonial, and colonial times.

These images show a historical map of Khairatabad, Hyderabad from 1915 (left) and a 3-D rendition of the same (right). The historic map has been georeferenced, digitized, and quantified to study the environmental changes in the past 100 years. Maps Courtesy: Prshant Lahoti, Kalakriti Archives.

Plans Going Forward

The Centre and its labs will continue their work towards open access to data and resources. CSECC plans to release a new website for project TROP ICSU, conduct training workshops, and initiate new partnerships and collaborative projects in the near future. We invite interested faculty and students to collaborate with us on our education and mapping projects.



CENTRES AT FLAME UNIVERSITY

Mathematics – A Way of Life

RENU DHADWAL
Chair, FLAME Centre for Mathematical Modeling

The days when everyone stayed inside their homes, watching news of the ravages of the Coronavirus in different parts of the world, are not that far behind us. People watched news channels to see predictions of various waves of the pandemic and when they would peak. These predictions, while not always entirely accurate, did help the governments all over the world prepare. These predictions were made using mathematical models.

Today, mathematical modelling is at the heart of solving problems in not just science and engineering but also in the fields of Social Sciences, Humanities, Business, and just about everywhere.

The Centre for Mathematical Modelling at FLAME has been established with the aim of fostering interdisciplinary research and to provide a space for the University community to carry out and publish research in fields that require mathematical modelling. The Centre aims to spread the idea of mathematical modelling as a tool for solving real world problems through outreach activities for school and college students. It also aspires to be a bridge between industry and academia by providing services in the form of consultancy, workshops, and seminars.

There are several activities that the Centre engages in throughout the year. These can be put in three categories: research, outreach, and connect.

Research:

Our faculty have published several high-quality papers in premier peer-reviewed journals and presented their work in various national and international conferences. We have also established collaborations with research groups outside of FLAME. One such successful collaboration is with the Polymer Science and Engineering division and the Complex Fluids group at NCL (National Chemical Laboratories). It is also the aim of the Centre to engage students in research through projects. Students get opportunities to work on interesting projects and present their work in conferences.

In the past, some of the mathematical modelling projects that students did as a part of their course work were from fields such as Ecology, Economics and Epidemiology. The abstracts of their reports can be found at tinyurl.com/CMM-student-projects.

The project done by students Tanmay Devi, Rhea Shah and Vanshika Surana on developing a primary education index (PIE) to measure the health of primary education in India was published at the online portal of ORF (The PIE Index 2020-21: Measuring the Health of Primary and Secondary Education Systems in India) this year. Other relevant student projects include work on tracking ocean trash particles, near-extinction languages in India, and many more. These are some examples that demonstrate the application of mathematical modelling is investigating and finding solutions to a variety of problems from diverse fields.

Outreach:

The Centre's goal is topropagate mathematics as a tool for solving real-world problems arising in various diverse disciplines through outreach activities for high school students as well as school teachers. The first step was taken in this direction earlier this year, when a mathematical modelling workshop was conducted for high school students from 9 to 13 May, 2022. The workshop had three themes: i) Modelling with Differential and Difference Equations; ii) Modelling in Economics; and iii) Modelling using Machine Leaning. The response to the workshop was good. In addition to workshops for students, we believe that workshops for teachers on the ways of including mathematical modelling in their teaching would be helpful in removing a fear of mathematics from the minds of students while showing them the practical use of maths in daily life.

Connect:

In order to continue conducting quality research it is important to collaborate and be up to date with the latest that is happening in the field. In order to do this, it is not only important to attend conferences, but also to organise symposia and conferences on our own campus. Inviting people from academia and industry to give talks to our students gives exposure to our students on the diverse areas of research and applications of all that they learn in class. Hence organising such events is a part of the "Connect" activities of the Centre.

Another area that the Centre really looks forward to work in is consultancy with relevant industries. It is often the case that academics carry out research on topics that are of interest to industries. Universities like ours can provide innovation in places where industry needs it. We aspire to bridge this gap by exploring opportunities to connect with business and work with them to find solutions. The first step in this direction has been made this year with a consultancy project about to be finalised with the largest petrochemical company in Brazil: Braskem.

We encourage interested faculty to approach us and participate in the activities of our Centre. We hope that we can together come up with many more ideas to enrich our own experience as well as provide solutions to others.

Group photograph with some of the students of the mathematical modelling workshop

NEW FACULTY AT FLAME

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PhD, Marketing, XLRI, India. 2020
Assistant Professor of Advertising & Branding at FLAME University

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