Experiential and Multidisciplinary learning in Higher Education: Establishing Indigenous knowledge Systems within NEP 2020

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Abstract

The National Education Policy (NEP) 2020 represents a transformative shift in India's educational framework by emphasizing multidisciplinary learning, holistic development, and the integration of indigenous knowledge traditions. Central to this reform is the revival and institutionalization of the Indian Knowledge System (IKS) within higher education.

Modern research views IKS as a naturally integrative field, bridging traditionaldomains—such as Vedic mathematics, Ayurveda, and sustainable architecture—withcontemporary scientific inquiry. The Indian Knowledge System encompasses diverse intellectual traditions developed over centuries in areas such as mathematics, astronomy, medicine, philosophy, linguistics, and environmental science. However, colonial educational structures and modern disciplinary fragmentation marginalized many of these traditions from mainstream academic curricula.

A core ambition of NEP 2020 is to restore experiential learning, a foundational element of the ancient Guru-Shishya tradition where knowledge was passed down through direct practice and mentorship. However, this institutional shift faces steep hurdles, including the philosophical tension between traditional holistic views and modern reductionist methods, as well as a severe shortage of faculty trained in both indigenous and modern academic systems The research highlights that although awareness regarding indigenous knowledge traditions is gradually increasing, significant challenges persist, including lack of trained faculty, limited curricular frameworks, institutional resistance, and insufficient research infrastructure.

The findings suggest that successful integration of IKS requires comprehensive curriculum reform, interdisciplinary research initiatives, and faculty development programs. Integrating traditional knowledge systems with modern scientific approaches can enrich educational practices, strengthen cultural identity, and foster innovative problem-solving approaches relevant to contemporary societal challenges. The paper concludes integration of experimental and multidisciplinary learning is having a long lasting impact on higher education.

Keywords: Indian Knowledge System, NEP 2020, Higher Education, Indigenous Knowledge, Multidisciplinary Learning, Educational Reform

1. Introduction

The amalgamation of indigenous knowledge systems into modern education has gained increasing attention in global scenario. Many countries have begun recognizing the importance of traditional knowledge in dealing withcurrent challenges related to sustainability, health, culture, and community development. In India, the National Education Policy (NEP) 2020 represents a significant milestone in this regard by emphasizing the integration of the Indian Knowledge System (IKS) within higher education.

In India ancient universities such as Nalanda, Takshashila, and Vikramashila served as global centers of learning for scholars from different regions of the world. These institutions emphasized multidisciplinary education where subjects such as mathematics, philosophy, medicine, grammar, and astronomy were studied in an integrated manner.

Despite this rich academic heritage, the colonial education system introduced in the nineteenth century led to the downgrading of indigenous knowledge traditions. Educational reforms influenced by colonial policies prioritized western learning methods and as a result, many traditional systems of knowledge were excluded from formal educational institutions and gradually lost their academic prominence.

The National Education Policy 2020 attempts to address this historical gap by encouraging universities to integrate indigenous knowledge systems into academic curricula, research programs, and interdisciplinary learning models. The policy emphasizes holistic education that integrates intellectual development with ethical values, cultural awareness, and practical skills.

This research paper aims to examine the relevance of the Indian Knowledge System in present-day higher education and the impact of Experiential and Multidisciplinary learning in Higher Education.

2. Historical Evolution of Indian Knowledge Systems

2.1 Ancient Universities and Knowledge Transmission

Ancient Indian centers of learning were at the epi center of the world. Indian centers of learning attracted the attention of Chinese, Koreans, Tibetans, and Central Asians. The subjects taught at these centers of learning were vast and varied. They included philosophy and logic, medicine and surgery, mathematics and astronomy, arts and literature, and governance and political science. The core of the Indian system of learning was the Guru-Shishya method. Under this method, the students stayed with their teachers and learned by observing and interacting with them. The Indian concept of knowledge was divided into various dimensions. The dimensions of Indian knowledge were Gyan (knowledge), Vignan (scientific knowledge), and JeevanDarshan (philosophy of life).

Indian knowledge system have had an important role in shaping the Indian intellectual landscape. Gyan is the pursuit of knowledge. Gyan is divided into philosophy, literature, linguistics, and logic. Vignan is the scientific pursuit of knowledge. Ancient Indian scientists were renowned for their knowledge of mathematics, astronomy, metallurgy, and medicine. JeevanDarshan is the philosophy of life. One of the important features of the Indian Knowledge System is its focus on experiential learning. Indian knowledge was related to the practices of day-to-day activities. Indian knowledge was related to agriculture, architecture, medicine, and the environment.Indian environmental practices were related to the management of water, the maintenance of soil health, and the preservation of biodiversity.

2.2 Impact of Colonial Education

The introduction of colonial education in the nineteenth century significantly transformed the Indian education system. Macaulay's educational reforms emphasized English-language instruction and Western knowledge systems.

This shift resulted in:

- Decline of traditional institutions
- Downgrading of indigenous knowledge
- Increased focus on administrative education rather than holistic learning

2.3. Indian Knowledge Systems in the National Education Policy 2020

2.3.1 Vision of NEP 2020

The National Education Policy 2020 highlights the importance of holistic and multi-disciplinary education with the objective of transforming the education system in India. The primary objective is to revive and integrate Indian Knowledge Systems into the education system.

The policy encourages the integration of Indian knowledge systems into a range of academic disciplines including science, technology, humanities, and social sciences.

2.3.2 Integration into Curriculum

NEP 2020 recommends several strategies for integrating IKS into education:

- Insertion of Indian scientific and philosophical contributions in textbooks
- Promoting classical and regional languages
- Development of interdisciplinary courses on IKS
- Establishment of research centers dedicated to indigenous knowledge

These initiatives aims to ensure that students understand both traditional and modern knowledge systems.

Experiential and Multidisciplinary Learning

Learning is a process, a change in behaviour and a holistic process of adaptation to the world, and a process of creation of knowledge Kolb & Kolb (2005).In the context of NEP 2020, experiential learning is defined as a process of undergoing a series of world of work experiences (situations which are new, different, unique, meaningful, relevant to learning outcomes, and multidisciplinary which create challenges for students to struggle for learning, generating alternative and innovative solutions to the complex problems using individual and or team creativity, reflection, and feedback) for resolving the situation developing.

Multidisciplinary training will assist students to shape their career alternatives. With NEP 2020 recommending transformation of all HEIs into large multidisciplinary diploma-awarding self-sufficient establishments, within the NEP 2020. Many industries now look for graduates with sound knowledge of different disciplines. In sync with the market demand, majority of college students aspire to acquire multiple abilities. But due to absence of collaboration between establishments the college students are deprived of the possibilities of multidisciplinary studying.

3. Literature Review

A review of existing literature is useful to understand the theoretical background and research that has already been done on Indian Knowledge Systems (IKS) and National Education Policy 2020. Scholars believe that the inclusion of indigenous knowledge systems in modern knowledge systems can improve cultural relevance and foster diverse ways of understanding knowledge systems.

Literature on educational reform in India indicates that NEP 2020 is a robust policy document for incorporating IKS in higher education.

1. Kumar and Babu (2025)

Kumar and Babu examined the role of Indian Knowledge Systems in **decolonizing education in India**. Their study highlighted that colonial educational policies marginalized indigenous knowledge traditions. The authors argued that the National Education Policy 2020 provides an opportunity to restore India's intellectual heritage by integrating IKS into modern curricula. The study emphasized that such integration can promote interdisciplinary learning and cultural identity among students.

2. Gaur (2024)

Gaur studied how IKS was applied in post-NEP 2020 higher education institutions. According to the study's findings, academic institutions have started offering courses on Indian knowledge traditions, such as environmental sustainability, mathematics, and philosophy. But the survey also highlighted issues like inadequate academic resources and a shortage of qualified staff.

3. Joshi and Bansal (2023)

Joshi and Bansal conducted a survey among **STEM teachers** to analyze their awareness and attitudes toward Indian Knowledge Systems. The findings revealed that teachers generally have positive attitudes toward the integration of IKS into science education. However, practical implementation in classrooms remained limited due to inadequate training and lack of teaching materials.

4. Mamgain (2025)

Mamgain studied the ways in which NEP 2020 advances Indian Knowledge Systems in the classroom. Inspired by the ancient Guru-Shishya educational approach, the study highlighted the value of experiential pedagogy and interdisciplinary learning. According to the author, integrating ancient knowledge into higher education could promote creativity and holistic learning.

5. Sarita and Singh (2025)

Sarita and Singh examined the integration of IKS into modern educational frameworks. Their research found that students who studied IKS-related subjects showed greater interest in cultural heritage and indigenous scientific knowledge. The study highlighted the potential of IKS to enhance critical thinking and relative learning.

6. Trivedi (2024)

Trivedi analyzed the **renaissance of Indian ethos through NEP 2020**. The study emphasized that the policy encourages institutions to integrate indigenous knowledge traditions with modern scientific disciplines. According to the author, this approach can help create a balanced educational framework that combines tradition with innovation.

7. Dr. K.ArunaBai(2022)

Dr. K Aruna analysed that creative combination of subjects, reducing aspect curriculum, flexible alternatives, and multiple entry and go out alternatives in the course of the undergraduate route, college students can discover their areas of hobby and also pick out careers of their desire

9. National Education Policy Report (2020)

The National Education Policy 2020 emphasize the significance of incorporating old knowledge systems into contemporary education. In addition to encouraging multidisciplinary education, the policy suggests adding courses on Indian philosophy, mathematics, the arts, and environmental practices.

10. Radhakrishnan (2019)

Radhakrishnan discussed the philosophical foundations of Indian education. The study highlighted that Indian educational traditions focus on the holistic development of individuals by integrating intellectual, moral, and spiritual learning.

However, critics caution that integration must be conducted carefully to maintain academic rigor and avoid uncritical romanticization of traditional knowledge. Therefore, interdisciplinary research and scientific validation remain essential components of IKS integration.

4. ResearchMethodology

 The research design combined quantitative and qualitative methodologies to assess experiential and multidisciplinary learning in higher education and integrate it with Indian knowledge systems.

Population and Sample

The population of the study consisted of students and educators involved in teacher education programs. A sample of **150 participants** was selected using stratified random sampling. The sample included:

- 70 Undergraduate students
- 50 Post Graduate Students
- 30 faculty members from higher education institutions

Data were collected through a structured questionnaire consisting of three sections:

1. Awareness of Indian Knowledge Systems
2. Attitudes toward integration of IKS in education

3. Experiential and Multidisciplinary learning in Higher Education
4. Institutional challenges in implementing IKS courses

Responses were recorded using a **five-point Likert scale** ranging from strongly disagree to strongly agree.Descriptive and inferential statistical techniques were also used to analyze the gathered data. Mean , percentages and standard deviation are the tools used in descriptive statistics.
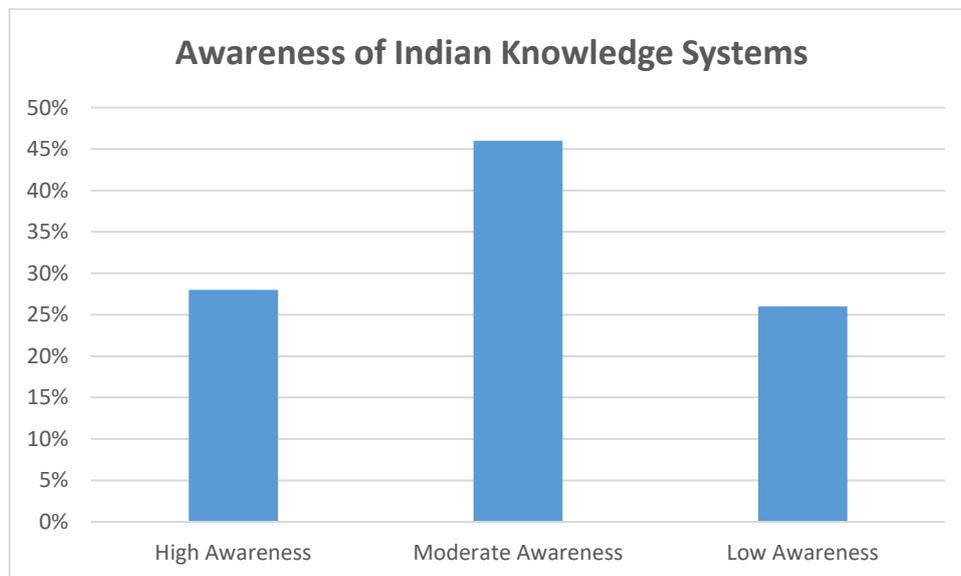
5. Data Analysis and Interpretation

5.1 Awareness of Indian Knowledge Systems

The survey results indicate varying levels of awareness among college students regarding the Indian Knowledge System.

| Awareness Level	Percentage of Respondents
High Awareness	28%
Moderate Awareness	46%
Low Awareness	26%

Graph

The research indicates that about half of the respondents show moderate levels of understanding of the concepts of IKS. This implies that issues related to indigenous knowledge are slowly being integrated into the academic field. However, the fact that only 28% of the respondents showed high levels of awareness implies that the topic is still poorly understood academically. The fact that about 26% of the respondents showed low levels of awareness implies that most students view traditional knowledge as merely cultural and religious practices.

5.2 Impact of Multidisciplinary Courses on Students

A study of **150 participants** revealed the effect of **Multidisciplinary** courses on student perceptions.

- Ability to solve real world problems 55%
- Improved critical thinking, creativity or innovations46%
- Helpful in career opportunities 67%

Graph
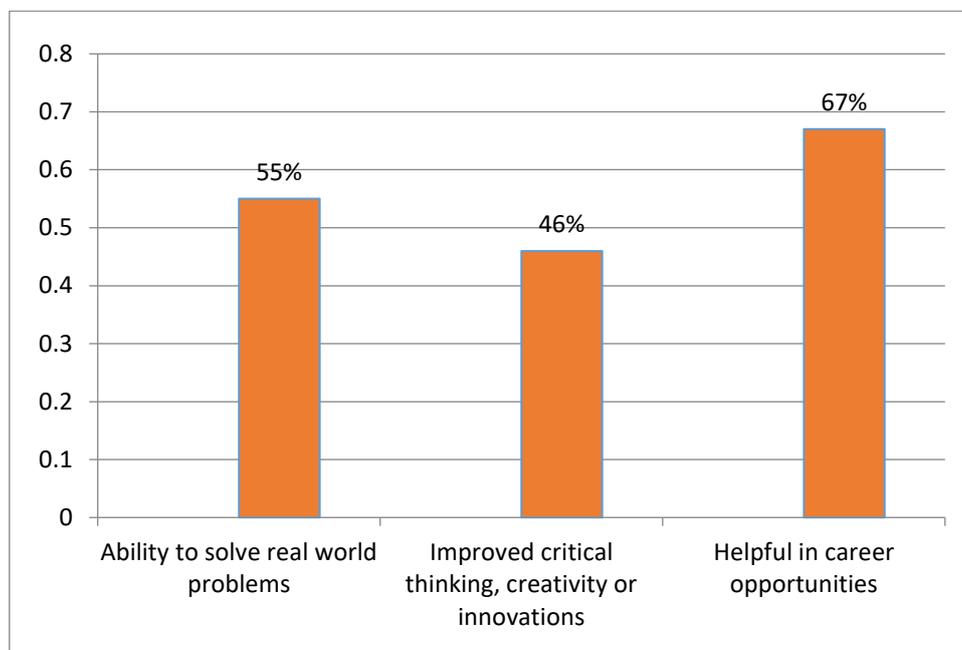
Interpretation

These results show that introducing multidisciplinary courses significantly improves students' critical thinking and help in their career advancement.

5.3 Preferred experiential learning methods

Teachers and educators were asked how they preferred to enhance their knowledge of Indian Knowledge Systems.

| Learning Method	Percentage
Assignments	35.8%
Role play	22.5%
Group discussion & presentations	20.8%
Internships	20.8%

Graph
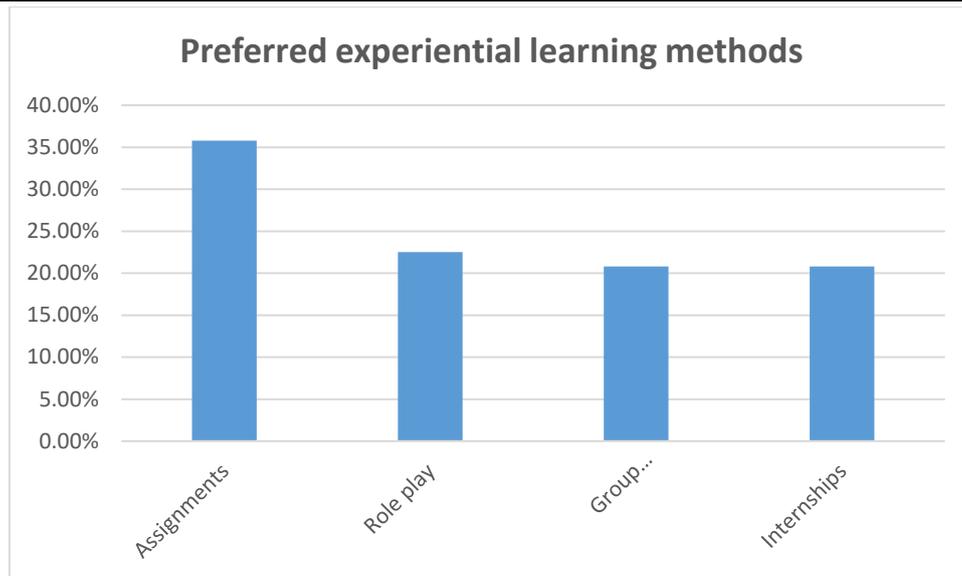
Interrpretation

The statistical data indicates Educators generally hold positive attitudes toward integrating IKS into modern education, but practical classroom implementation remains limited due to insufficient training and teaching resources. Student competency increased by merging theory with practiceLearning by experience is more effective and long lasting

5.4 Challenges in Implementing IKS in Higher Education

The second dataset identifies the major challenges faced by institutions in implementing IKS-based educational programs.

Challenge	Percentage
Lack of trained faculty	32%
Limited curriculum integration	24%
Low awareness among students	18%
Institutional resistance	16%
Limited Funding	10%
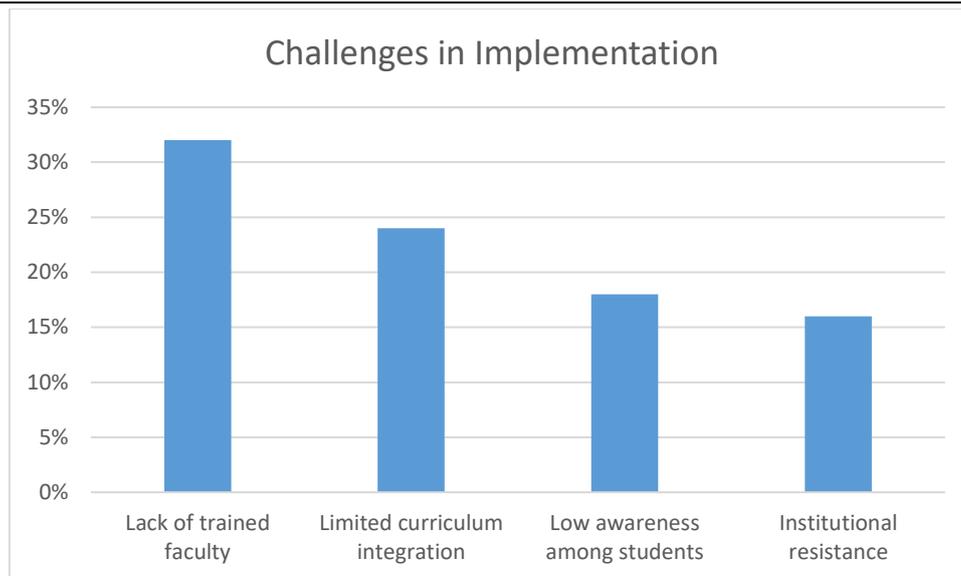
The analysis indicates that the **lack of trained faculty (32%)** represents the most significant challenge. Many universities currently lack scholars who are trained in both traditional knowledge systems and modern academic methodologies. Secondly, the **limited integration of IKS into formal curricula (24%)** is another major barrier. Although NEP 2020 encourages interdisciplinary learning, universities often struggle to incorporate new subjects within existing course structures.

Institutional resistance and lack of awareness also contribute to slow implementation. Some academic communities remain skeptical about the scientific validity of traditional knowledge systems, highlighting the need for rigorous research and interdisciplinary dialogue.

6. Findings

The findings of this study highlight both opportunities and challenges associated with integrating experiential and multidisciplinary the Indian Knowledge System into higher education.

One important opportunity lies in the **promotion of interdisciplinary learning**. Traditional knowledge systems inherently integrate multiple fields of study, which aligns with modern educational trends emphasizing multidisciplinary research and holistic learning.

 Experiential learning methods inspired by the Guru–Shishya tradition can provide students with practical knowledge and ethical values. But more practical exposure should be giver for proper e implications.

Universities must develop **faculty training programs** that equip educators with the skills required to teach interdisciplinary IKS courses.

Academic institutions should also establish **research centers dedicated to indigenous knowledge systems**.

Collaboration between traditional practitioners and modern scholars and industries can create dynamic learning environments where traditional wisdom and scientific inquiry complement each other.

7. Recommendations

To ensure successful integration of experiential and multidisciplinary studies into higher education, several policy measures are necessary:

Curriculum Development

Universities should introduce new subjects related to Indian knowledge traditions.

Faculty Training Programs

Special training programs should be developed to train faculty members to handle IKS-related subjects.

Development of teaching and learning resources

Educational institutions should develop quality teaching resources related to Indian Knowledge Systems. These resources could be developed into a variety of formats such as textbooks, digital resources, case studies, and multimedia materials. Digital resources could also be utilized as a means to disseminate knowledge related to IKS.

Promotion of Experiential Learning

The research has emphasized the importance of experiential learning styles that are derived from traditional modes of learning like the traditional Guru-Shishya system. Educational institutions should promote experiential learning styles.

For example, students could be encouraged to participate in projects related to traditional agriculture, traditional medicine, handicrafts, or traditional methods of water conservation. Experiential learning styles could be promoted to enhance students' understanding of IKS.

Research Funding

Government bodies and academic institutions should fund research projects related to indigenous knowledge systems.

Institutional Collaboration

Academic institutions could collaborate with traditional knowledge practitioners to enhance academic engagement.

Increasing Awareness among Students

Educational institutions could organize seminars, workshops, and awareness programs to introduce students to the importance of Indian Knowledge Systems.

Conclusion

The Indian Knowledge System represents a valuable intellectual heritage with significant relevance for contemporary education. The National Education Policy 2020 provides a comprehensive framework for integrating indigenous knowledge traditions into higher education institutions.

The findings of this study indicate that awareness of IKS among students is gradually increasing, but several institutional challenges remain. These include the lack of trained faculty, limited curricular integration, and insufficient research infrastructure.

Successful implementation of IKS within higher education requires coordinated efforts involving policymakers, universities, and research organizations. By combining traditional wisdom with modern scientific approaches, educational institutions can create more inclusive and innovative knowledge systems capable of addressing contemporary societal challenges.

Ultimately, the integration of the Indian Knowledge System should not be viewed as a return to the past but as a strategic effort to create a more holistic and globally relevant educational framework.

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