ORIGINAL RESEARCH PAPER

Education

INTEGRATING INDIAN KNOWLEDGE SYSTEM IN HIGHER EDUCATION - ANDRAGOGICAL CHALLENGES AND OPPORTUNITIES

KEY WORDS:

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CONTEXT AND BACKGROUND

Indian Knowledge System And Higher Education

The Indian Knowledge System (IKS) is a vast and varied collection of knowledge that has evolved and been enhanced over millennia. The IKS is centred on the Vedic literature, the Upanishads, the Vedas, and the Upvedas (Amani,2024) Indian Knowledge System (IKS) is a holistic approach that integrates philosophy, spirituality, science, technology, engineering, mathematics, medicine, and arts, highlighting the interconnectedness of all things, rooted in India's rich cultural heritage.

(Ministry of Education, 2020). Indian Knowledge Systems (IKS) encompass various disciplines like Ayurveda, yoga, mathematics, and astronomy, with significant contributions transmitted through oral traditions, promoting experimentation, innovation, and pioneering discoveries.

National Education Policy (2020) highlighted the importance of the "Knowledge of India" initiative that seeks to furnish a thorough comprehension of India's illustrious heritage, its contributions to contemporary India, achievements, challenges, and future aspirations. The "Knowledge of India" initiative aims to integrate Indian Knowledge Systems, tribal knowledge, and indigenous practices into the school curriculum, fostering a deeper understanding and appreciation of India's diverse knowledge traditions.

Higher education is essential in promoting both individual and societal welfare, in accordance with India's constitutional vision of a democratic, equitable, and humane nation. It encourages values such as liberty, equality, fraternity, and justice, significantly contributing to sustainable livelihoods and economic advancement. As India progresses towards a knowledge-based economy and society, the demand for higher education is projected to increase.

Andragogy Perspectives

India's rich intellectual heritage was overshadowed by Western perspectives for centuries. However, the National Education Policy (NEP) 2020 has addressed this by incorporating the Indian Knowledge System (IKS) into the curriculum, marking a significant milestone in Indian education.

The policy aims to preserve and promote India's knowledge heritage by incorporating Indian Knowledge Systems (IKS) into education, creating a more comprehensive system. This integration recognizes that IKS can provide unique perspectives and ideas that can improve modern education, and demonstrate Indian intellectual and cultural heritage. This policy aims to promote a better understanding and appreciation of India's diverse knowledge traditions. This shift has the potential to spur innovation and progress by leveraging India's rich cultural and intellectual heritage. Higher education plays a vital role in promoting both individual and societal well-being and also contributes to the realization of India's constitutional vision. (National Education Policy, 2020).

The Ministry of Education organized Akhil Bharatiya Shiksha Samagam (ABSS) in the year 2023, with the objective to discuss strategies for integrating Indian knowledge systems at all levels of the education curriculum and ways of presenting the 'Indian way' to the world. The discussions sought to address some of the issues like the pressing need to shift the existing public narrative and foster greater awareness and recognition of the value and significance of Indian Knowledge Systems (IKS), Incorporating IKS based curricula in schools and Higher Education Institutions and Faculty training in the domain of IKS (ABSS Report, 2023).

In the light of andragogy perspective, while developing teaching methodologies for Indian Knowledge Systems (IKS), it is crucial to tap into India's rich chronological heritage of knowledge transmission, incorporating traditional methods and approaches to create effective and culturally relevant pedagogies. (Acharya, 2024). Developing well-structured courses highlighting key traditional IKS elements and training educators in IKS principles and methodologies is crucial for effective instruction. One of the foremost challenges in incorporating IKS into the curriculum is the insufficiency of appropriate resources and infrastructure. Many educational institutions, especially in rural areas, face challenges in incorporating Indian Knowledge Systems (IKS) due to inadequate funding, insufficient teacher training, and limited access to resources and technology. Moreover, there needs to be more qualified educators who are knowledgeable in IKS and can efficiently integrate them into their teaching methodologies. Resource scarcity and infrastructure gaps hinder the effective integration of Indian Knowledge Systems (IKS) into education, undermining efforts to promote India's cultural heritage and provide comprehensive learning. Lal et al. (2024) discussed the challenges of integrating IKS into higher education like the influence of Western paradigms, lack of structured framework in which IKS is sidelined, trained faculty, and appropriate pedagogical tools for teaching indigenous knowledge of India. The passive teaching methods do not allow adult learners to have hands-on experiences and restrict their autonomy and participation in the classroom (McGrath, 2009). Establishing standardized methods for validating and certifying traditional knowledge is crucial yet complex. This process is necessary to secure academic recognition and respect for Indigenous Knowledge Systems (Mishra et al., 2024). Maintaining the relevance of Indigenous Knowledge Systems (IKS) in modern education is a major challenge. It requires a delicate balance of adapting traditional knowledge to modern contexts while preserving its inherent value and authenticity. Further the literature highlighted that this integration is frequently hampered by educational institutions' lack of support, as they may not have the

infrastructure, resources, or dedication needed to successfully implement IKS. Incorporating Indian Knowledge Systems (IKS) into higher education can bring significant advantages, including fresh perspectives, innovative solutions, deeper understanding of natural systems, and bridging the knowledge divide. (Mishra et al., 2024).

Although limited, existing literature shows that integrating Indian Knowledge Systems (IKS) into higher education can bring opportunities despite implementation challenges.

Purpose Of The Study

This conceptual study attempts to guide educators, practitioners and other stakeholders to understand the challenges and opportunities of IKS integration and explore the intersection of andragogical principles and IKS in today's modern higher education. The study addresses the following questions -

- What are the andragogical barriers to incorporating the Indian Knowledge System in higher education?
- What opportunities of integrating the IKS in higher education does offer using andragogical approach in higher education?
- What are the best andragogical practices for integrating IKS effectively in higher education classrooms?

Theoretical Framework

Understanding Andragogy

Andragogy is a term used to describe adult learning, which distinctly differs from Pedagogy. Pedagogy deals with the teaching-learning of children while andragogy applies to adults. According to Malcolm Knowles, andragogy is the art and science of adult learning (Knowles, 1978). Andragogy guides on how to teach adult learners (Clair, 2002), as it clearly states the assumptions to be taken into consideration while dealing with adults. The following six principles (Figure 1), explains the differences in pedagogy and andragogical approach for learning and teaching.

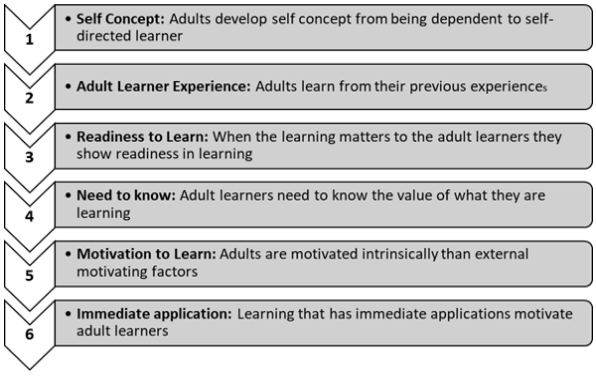

Figure 1: Knowles' Assumptions of Adult Learners

Adults learn differently than children. In designing the instruction teachers are expected to consider the assumptions of andragogy, for creating relevant and meaningful learning experiences. It was stated in andragogy that adults learn from their previous experiences and have intrinsic motivation to learn in contrast to the children depending on external factors motivating them to learn. Adult learners prefer autonomy and self-directed learning. They need a clear "reason" to learn, driven by a desire for knowledge that adds value to their lives and sparks their motivation. When adults know the immediate relevance and applicability of what they will be learning, they get motivated to learn. These assumptions suggest that in higher education contexts the adult learners are self-motivated and are responsible for their role as learners in their learning (El-Amin, 2020). The learners in this stage learn through the different experiences they come across formally and informally, and thus enhances their experientially oriented and self-directed learning (Chacko, 2018).

Relevance of IKS in modern education

IKS or Bhāratīya Jñāna Paramparā Vibhāga is a division of the Ministry of Education of the Government of India and it aims to promote indigenous Indian systems of knowledge in modern education based on the NEP 2020. Indian Knowledge Systems (IKS) cover a broad range of disciplines, including life sciences, mathematics, languages, medicine, astronomy, philosophy, and many others. The University Grants Commission (UGC) mandates inclusion of Indian Knowledge Systems (IKS) courses, accounting for at least 5% of total credits, in undergraduate and postgraduate programs.

Andragogical Challenges

Integrating Indian Knowledge Systems (IKS) in higher education poses challenges, despite its potential for holistic learning and societal applications. For higher education teachers the challenges may occur in the varied areas such as curriculum transaction and establishing the relevance of it in the era of technology led teaching-learning. Moreover, with no prior training teachers may lack to sustain learner engagement in the classroom and further acknowledge and appreciate IKS. The potential challenges in integrating IKS in higher education in the andragogical perspective are enlisted presented below in table 1 –

Table 1: Andragogical challenges of integrating the Indian Knowledge System

S.N.	Andragogy aspects	Challenges
1	Curriculum related	Curriculum transaction • Reorienting Indian Knowledge Systems (IKS) is challenging due to the need for new instruction methods and engaging activities in today's digital age.. • The curriculum designing can have both forms isolated and infused, making IKS an integral part of the programme. • Authentication and validation of the IKS while designing and creating the content to be included in the curriculum. • Lack of learner centred, flexible approach
		Contextualizing interdisciplinarity • Connecting the teaching with the learning of specific culture, traditions, values, community practices • Integrating Indian Knowledge Systems (IKS) into various disciplines, aligning course material with learning outcomes and real-world applications, enhances education's relevance and meaning.
		Lack of systematic uniform framework for implementation • IKS integration in education is still at experimental stage • Lack of relevant evidence on this may lead to non-uniform delivery of IKS, based on the institutional decisions and individual understanding of the process. • A uniform framework is needed for implementation.
		Fragmented understanding • The fragmented approach towards education supports the curriculum to undertake IKS as a separate course. • Integrating Indian Knowledge Systems (IKS) can be challenging due to potential disconnections with other disciplinary knowledge, limiting its relevance and significance.
		Vast scope • Extensive and enormous content in IKS will be difficult to accommodate in the

		• structured academic programmes. • Deciding the scope for a particular programme/course needs experience and expertise.
		Establishing relevance to all disciplines • Due to content barriers, it will be difficult to establish relevance of IKS with all the disciplines and subjects. • Identifying relevant content for undergraduate and postgraduate courses is a difficult task.
		Balancing traditional and modern knowledge • Bridging the gap between Indian Knowledge Systems (IKS) and modern education requires balancing traditional knowledge with modern structures, content, and teaching methods.
		Alignment with global standards • Making IKS globally relevant as a part of a broad curriculum having academic rigor and breadth. • Addressing the global needs and transcends national boundaries, integrating diverse perspectives on academic and cultural perspectives. • Special efforts are required to make IKS relevant with global education standards • Wrong perception of IKS as regional, ancient, religious knowledge by the outside world
2	Teacher related	Teacher unpreparedness • Lack of right approach towards integrating and implementing IKS in regular course teaching. • Unwillingness to learn to teach a new course apart from their regular disciplinary courses. • Knowledge and skill gaps to teach IKS effectively in regular formal education.
		Limited training • Limited opportunities for teachers to gain formal training in IKS and andragogy for integrating IKS in education. • Rigorous training and handholding is required through specially curated long term faculty development programmes for IKS teaching. • Misalignment with the outcomes and assessments in IKS integrated courses.
		Skepticism/ uncertainty • Teacher considered IKS as archaic and irrelevant to today's technology world. • Resistance from some sections of society not aware of the benefits of incorporating IKS as a formal education course.
		Limited guidance • Dearth of experts and trainers in IKS providing conceptual as well as implementation training regarding IKS integration at practical level. • Limited human resource support in IKS course delivery in higher education with the concrete implementation framework.
		Lack of uniform structure • IKS able to be covered in multiple approaches based upon the nature of the course, as it may be relevant specific to the topics/subjects taught. • Making it uniformly applicable can be challenging in terms of content, implementation, assessments and applicability.
		Resource scarcity • Limited funding for IKS programmes in current educational system • Limited human resource availability for teacher training on IKS as well as institutional policy framing. • Most of the IKS literature is difficult to understand for common people, and needs experts/ translators to translate in simple language in a meaningful way.
		Dearth of research findings on andragogy for IKS • Limited research on IKS integration and implementation in higher education, provides less guidance for teachers in the context of andragogy.
3	Learner related	Lack of awareness • Lack of awareness, limited previous knowledge in IKS • Lack of positive approach and significance towards instruction in IKS in the formal education system • Not having prior experiences with respect to IKS understanding and applications in the real-life contexts
		Interest, reception and motivation • Rationale for integrating IKS may not be clear or emphasized • Less interest in learning other things apart from the courses included in the programmes, mostly in technical courses. • Lack of motivation to understand and adapt IKS due to overpowering western culture and practices.
		Cultural and regional diversity • Lack of sensitization towards other cultures and traditions • Non-empathetic approach while learning IKS • Non-cooperation to understand diversity and differences in people and practices • Resistance to change
		Access to resources • Limited access to ancient knowledge resources. • Language barriers to understand the content of the old documents/ materials. • Complexity in the available literature/ sources
		Practical implications and relevance • No clear idea on implementing theoretical knowledge and demonstrating understanding in the real-life problems and challenges • Lack of initiatives form learners to experiment and utilize IKS in the modern world problem solving

Opportunities for integrating IKS – Andragogy perspective

As reiterated by NEP (2020), IKS has an immense scope to bridge the gaps in traditional and modern education systems, in spite of the several challenges in integrating it in the mainstream curriculum. These are the opportunities for using vast scientific knowledge from ancient systems in the modern processes and practices of higher education. Embracing IKS higher education will influence andragogical practices in many ways. The opportunities are enlisted as below in table 2 –

Table 2: Andragogy perspective: Opportunities for integrating IKS

Opportunities of integrating IKS	Andragogy perspective

Fostering inclusion	Indian Knowledge Systems (IKS) offers tried and tested problem-solving strategies across disciplines, enhancing problem-solving skills in learners from diverse backgrounds.
Improving problem solving	Indian Knowledge Systems (IKS) equips learners with essential life-long learning skills, including goal-setting, critical thinking, scientific problem-solving, and collaborative learning
Inspiring interdisciplinarity	Indian Knowledge Systems (IKS) offers a multidisciplinary approach, enabling learners to think beyond subject boundaries and explore problems from diverse perspectives.
Encouraging life-long learning	Indian Knowledge Systems (IKS) fosters lifelong learning skills, including goal-setting, critical thinking, rational thinking, scientific problem-solving, and collaborative learning.
Empowering creativity and co-creation	Indian Knowledge Systems (IKS) promotes creativity, co-creation, and democratization of knowledge, enabling learners to think and work according to their abilities..
Emphasizing on real world applications	Indian Knowledge Systems (IKS) connects learning to real-life scenarios, using critical reflections to improve personal and professional life.

Relevant andragogy strategies for integration of IKS in higher education

Considering the scope and depth of IKS integration, andragogy strategies that can be implemented for effective transaction of the curriculum are suggested as below in table 3 –

Table 3: Andragogy strategies for integration of IKS

Andragogy aspects	Strategies for IKS integration
Learner centricity	Task oriented sessions Taking into consideration learners' diverse backgrounds Allowing learners to enquire and discover Providing autonomy in the classroom tasks Offering personal guidance whenever needed
Experiential learning	Use of hands-on activities Field work Workshops Internships Guided projects Interaction with experts, traditional practitioners Visit to heritage sites, ecological reserves, etc. Community engagement Service learning
Self-directed learning	Storytelling Gamification Technology tools Digital and multimedia tools
Problem centred learning	Inquiry based projects Capstones Jigsaw projects Educational hackathons Case studies Scenario based studies
Goal oriented learning	Skill based activities Focused discussions Reflective essays Presentations
Relevance and Applicability to real life	Case / scenario -based learning Interdisciplinary projects Industry visits Conferences and seminars Expert/ guest lectures
Intrinsic motivation	Reflection journals Debates and Dialogues Learning Portfolios Yoga, meditation Physical -recreational activities
Social learning	Peer learning activities Role playing Simulation Collaborative projects Working with community Service learning projects Community engagement Involving local artisans, craftsman, practitioners

These strategies can be implemented by teachers considering the course content, class size, availability of resources and other aspects related to customization.

Conclusion And Recommendations

There is a transformative potential IKS can offer to Indian higher education by providing strong support in terms of practices to shape more inclusive, holistic and sustainable education. Andragogy can bring in the adult learning approaches to encourage self-directed, experiential and autonomous learning for new-age learners. It is essential to understand the possible challenges and opportunities in integrating IKS in higher education at large. This understanding will make teachers aware, who shoulder the responsibility of transacting IKS in higher education learners effectively. If we want education to sustain IKS in this modern ecosystem, there is an urgent need to create training programmes for faculty development on andragogical methods and practices for effective delivery and dissemination of IKS. More research efforts are required in the form of experimental studies to find out best methods of teaching IKS integrated in the formal education programmes.

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