

Competency-Based Education and Indian Knowledge Systems: A New Paradigm under NEP 2020

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Abstract:

The National Education Policy (NEP) 2020 is a significant effort to shift the current education system in India from being content and examination-based to competency-based, experiential, multidisciplinary, critical, value-based and context-based. Competency Based Education (CBE) and integration of Indian Knowledge Systems (IKS) are the two key aspects of this transformation. Competency Based Education is outcome-based education that emphasizes what students can understand, apply, demonstrate and transfer as opposed to content or classroom time. Indian Knowledge Systems on the other hand refer to a broad range of intellectual and practical traditions that have evolved throughout the Indian subcontinent in the fields of mathematics, language, philosophy, medicine, agriculture, ecology, arts, architecture, governance and community practices. This conceptual paper focuses on the linkage of CBE with IKS in the policy framework of NEP 2020. Through qualitative policy analysis and literature review, the paper concludes that CBE can be a pedagogical and assessment framework to meaningfully incorporate IKS rather than simply having to memorize it as another layer of facts. The proposed approach links up disciplinary knowledge with indigenous and historical context, inquiry, experiential tasks, authentic assessment, scientific temper and reflective learning. The paper also aims to highlight key implementation issues such as the preparedness of teachers, sources as authenticity, assessment design, ideological polarization, curriculum overload and the danger of automatically equating claims of historical knowledge with validated current scientific information. It asserts that the rigorous, plural, evidence-sensitive and competency-oriented approach can help IKS to play a role in culturally situated but world-affirming education.

Keywords: Competency Based Education, Indian Knowledge Systems, NEP 2020, Experiential learning, Competency Based Assessment, Indian education, Indigenous knowledge, Curriculum reform.

1. Introduction

The National Education Policy 2020 is a major conceptual shift in the field of Indian education. The policy doesn't just call for new school architecture, new degrees, or new administrative set-ups, it calls for a new purpose, process, and outcome of education. The emphasis of the NEP 2020 is on holistic development, conceptual understanding, creativity, critical thinking, multilingualism, experiential learning, vocational exposure, ethical reasoning, scientific temper and a better interface between

education and the cultural and intellectual heritage of India (Ministry of Education, 2020). The policy therefore questions an education culture, where achievement has often been linked to the reproduction of the information found in textbooks, and top performance in high-stakes examinations. Competency Based Education offers one means to the end of making this shift a reality. CBE emphasizes that there is a focus on demonstrated learning, not just covering the curriculum. Competency is about knowledge but not just knowledge, it is about what knowledge is used for as well in real or relevant contexts. It can refer to conceptual understanding, skills, reasoning, attitudes and values, communication, decision making and transfer of learning to new contexts. Gervais (2016) believes that competency-based approaches are establishing a link between theory and practice and imposing a demand for learning expectations to be clearly stated and supported by evidence that learning has occurred. Likewise, Sangai (2021) defines CBE in the Indian context as an outcome-oriented, learner-centred approach where skills, values, attitudes and knowledge in relation to real-life scenarios are developed and demonstrated.

Another key thrust of NEP 2020 is to increase the focus on Indian Knowledge Systems in education. The policy aims to integrate Indian traditions of intellectual, scientific, linguistic, artistic, philosophic, ecological and cultural approach in education. Such integration is seen as reading the ancient texts but also as encountering local, folk, oral, tribal, artistic, technical and community knowledge traditions. At the same time, NEP 2020 emphasizes on 'Indian ethos' with a focus on critical thinking, scientific temper, and constitutional values, as well as global citizenship, in the education system (Ministry of Education, 2020). This is important because meaningful education in IKS should not be limited to celebrating the culture but connected to the mode of inquiry that is appropriate to the teaching and learning of the modern academic disciplines.

In 2023, the University Grants Commission (UGC) reinforced this emphasis in its Guidelines for Incorporation of Indian Knowledge in Higher Education Curricula. The guidelines promote undergraduate and postgraduate students to complete at least 5% of the total prescribed credits in the IKS and suggest that a minimum of 50% of the IKS credits be linked to the student's major discipline. They also stress the employment of primary sources like original documents, inscriptions, historical documents, material evidence, and the meticulous documentation of living community practices (University Grants Commission [UGC], 2023a).

The question that needs to be asked is how to weave IKS into education without making it yet another content-rich subject that is taught to be regurgitated in exams? This paper makes a strong case for competency-based education. When the system of IKS is structured to support inquiry, application, analysis, comparison, experimentation and problem-solving, communication, ethical reasoning, and authentic performance, it can be a valuable contextual tool for building competencies instead of a load of information.

2. The aims of the Study

The present paper has four major objectives:

1. To understand the conceptual link between Competency Based Education and Indian Knowledge Systems as per NEP 2020.

2. To discuss the implications of incorporating IKS in curriculum, pedagogy and assessment in a competency-based manner.
3. To suggest a conceptual framework of integration of modern knowledge of the different disciplines and Indian knowledge tradition.
4. Identify implementation challenges and recommend safeguards for academically rigorous, inclusive and evidence sensitive integration of IKS.

The study is presented around the main question, "How competency-based education can create an appropriate pedagogical framework for meaningful integration of Indian Knowledge Systems under NEP 2020?"

3. Methodology

This study is a conceptual and policy-analysis, qualitative study. It does not provide primary surveys, experimental or interview data. Rather, it combines key policy papers and academic research that was published by the end of 2024. National Education Policy (2020), National Curriculum Framework for School Education (2023), UGC guidelines on IKS, NCERT publications are the major sources of policies.

Some peer reviewed literatures about competency-based education, assessment, experiential and culturally contextualized learning, Indian Knowledge systems and scientific temper were also reviewed. The theoretical definitions of competencies and mastery were used after obtaining from foundational international CBE literature and to incorporate the framework within the Princely plans of NEP 2020, Indian publications were used.

The analysis of the findings was structured under four main themes: curriculum; pedagogy; assessment; and institutional implementation. The paper does not presume that CBE or IKS per se is the catalyst of educational improvement, but rather they look at the conditions that can be conducive to meaningful learning when they are integrated. This is suitable since the implementation of NEP is still a process and there is limited empirical evidence available for CBE-IKS models at large scale **levels** that specifically **test** these models.

4. The conceptual foundation of competence-based education is provided in this section. This section provides conceptual foundation for competence-based education.

Competency based approaches have been associated with previous models of mastery learning and outcome-based education. Bloom (1968) suggested that gaps in achievement do not necessarily reflect a permanent condition; with the proper instruction, feedback, corrective support, and opportunities, a much greater percentage of students can meet the educational goals. In modern CBE, this concept is expanded in defining what the learner is expected to know and do; and in linking teaching and assessment with the learning outcomes.

Nodine (2016) identifies four educational traditions that have helped to inform the development of CBE: mastery learning, outcomes-based education, vocational education, and performance assessment. Competency-based systems are characterized by the focus on demonstrating competence. Thus, the

design of the curriculum starts not just with the question, what content should teachers teach? but with the question, what will students be able to understand and do because of learning?

Gupta (2020) states that competency-based curriculum should nurture knowledge, skills, attitudes, and values to face the situations outside classrooms in India. This should be achieved in participative classroom settings where learners can explore, discuss, practise, get feedback and be more responsible for learning.

Assessment is thus the focus. Traditional exams tend to reward rote-learning and speed of reproduction. Rather, competence-based assessment is designed to enable the demonstration of understanding and application. Evidence can take the form of projects, practical demonstration, oral evidence, portfolios, investigations, case analysis, performance, design tasks, fieldwork, reflective journals, written evidence or conventional examination, restructured around reasoning and application, depending on the competency.

The National Curriculum Framework for School Education 2023 also correlates assessment with competencies and learning outcomes. Assessment is not assumed as a judgment at the end of the teaching process, but rather as a development process that is integrated into the teaching process (National Council of Educational Research and Training [NCERT], 2023). This is a significant change from the focus on assessment of remembered content to assessment of learning evidence.

5. Knowledge of Indian Knowledge Systems

Indian Knowledge Systems should not be seen as a uniform knowledge system. The Indian subcontinent has always had several intellectual, linguistic, regional, philosophical, scientific, artistic, technological, as well as agricultural, medical and craft, oral and community traditions. It is, therefore, necessary to take note of plurality in the education of IK, so that one tradition is not seen as the representative of Indian knowledge in totality.

NEP 2020 highlights contribution and traditions of Indian subjects in different subjects like Mathematics, Astronomy, Philosophy, Medicine, Architecture, Agriculture, Conservation, Arts, Language and more. It has a broader educational agenda of being culturally rooted and open to enquiry, creativity, rationality and scientific temper (Ministry of Education, 2020).

Among the guidelines of the UGC the ones pertaining to the authenticity of the source and the relevance of the discipline are significant. They suggest that the use of source texts, historical documents, inscriptions, material evidence, and well-documented current practices are all resources to be used in developing IKS curricula. It is a principle that is critical for academic credibility. It entails that pupils should not be told simply what has been achieved in the past, but how claims to knowledge are made, interpreted, compared and evaluated (UGC, 2023a).

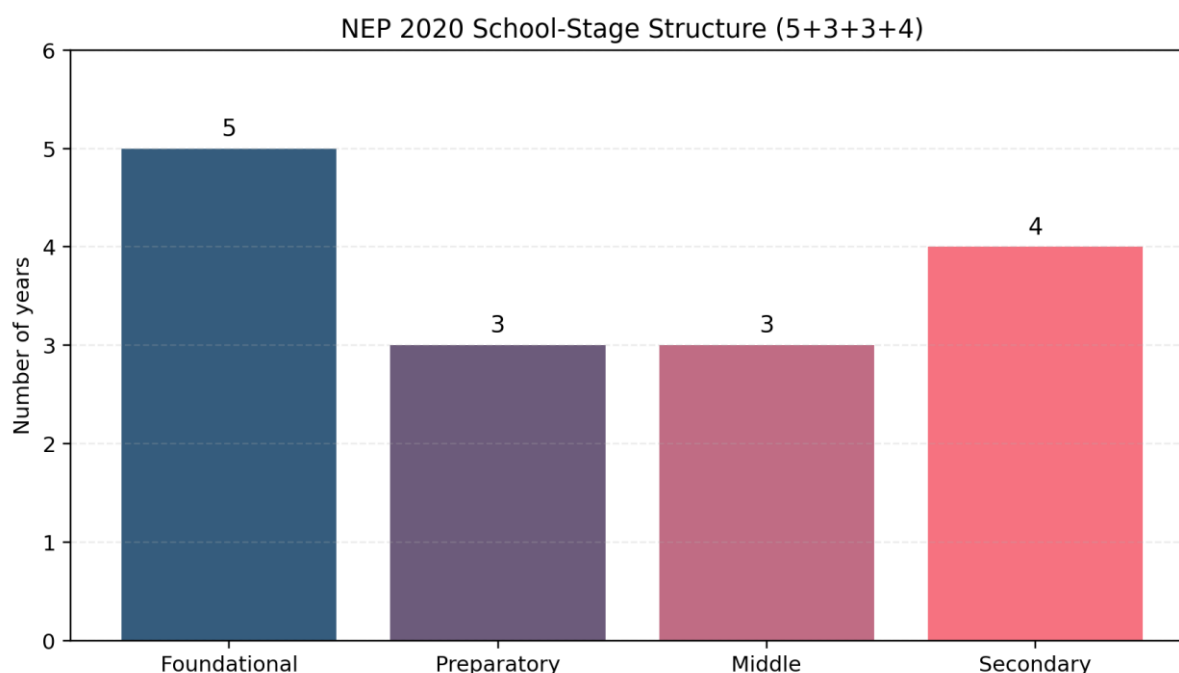
In the study on integration of traditional knowledge into STEM education, Joshi and Bansal (2023) demonstrate the significance of teacher awareness and pedagogical preparation and point to the possible relevance of the traditional knowledge for culturally grounded learning. The integration of IKS is thus essentially a curriculum and teacher development issue rather than just an insertion of extra chapters in textbooks.

6. NEP 2020 as the Link between Competencies and IKS

Key among the important aspects of the NEP 2020 is that the concepts of competency-based learning and culturally rooted education do not stand out as two distinct reforms. They are both part of the greater goal of helping to develop Holistic Learners.

School education is restructured under the NEP 2020 through the pedagogical framework of 5+3+3+4, which broadly signifies foundation, preparatory, middle and secondary stage. The goal is to better match learning to developmental levels and to see schooling as a series of different levels (Ministry of Education, 2020).

Graph 1. NEP 2020 School-Stage Structure



Source: Ministry of Education, Government of India (2020).

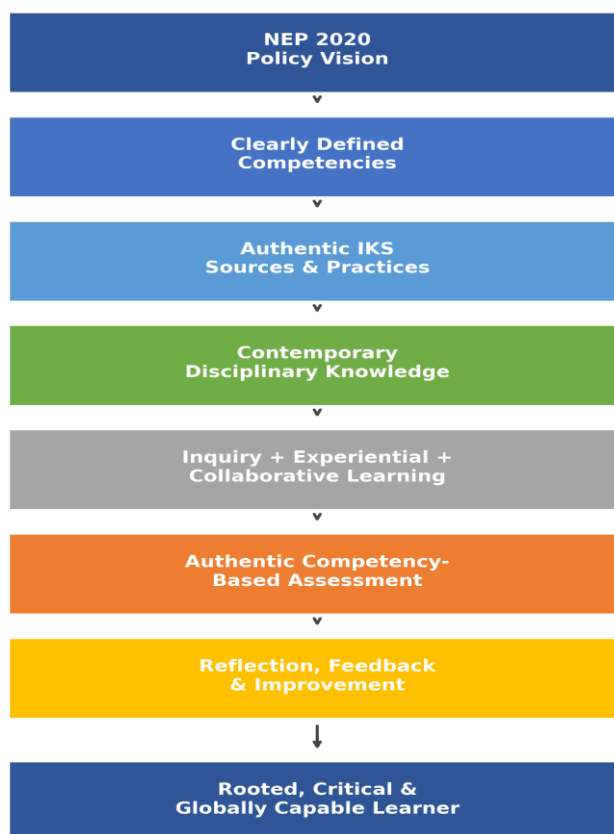
The educational context of this structure is more important than its numerical. Pedagogy will start to shift from play, activity and discovery-based learning to more complex inquiry, discussion, interdisciplinary thinking, and student choice. This way, opportunities are provided for locally contextualized and culturally relevant knowledge to be incorporated at various levels without making IKS an isolated discipline.

Learning context can be stories, local environments, crafts, games, languages, songs, patterns, agricultural practices and community knowledge at the foundation and preparatory stages. In the middle stage, students can explore mathematics, ecology, language, art, or technology underlying past and present practices. At secondary and higher-level education, students can conduct source criticism, comparison, experimentation, historiography, interdisciplinary analysis and research.

Therefore, NEP 2020 offers a policy framework, and CBE offers the educational mechanism which could help in making the transformation of information on heritage into skills acquired on heritage. A Competency Based IKS Integration Model

This paper's proposed model starts from the perspective that the incorporation of IKS should not be done after the design of curriculum as a decorative cultural content. Rather, the educator needs to first identify the competency that needs to be developed and then look at the Indian knowledge tradition and see if there is a meaningful context, method, historical case, or application in which the competency can be learned and developed within this tradition.

Figure 1. Conceptual Model for CBE-IKS Integration



Conceptual model developed from NEP 2020, competency-based education literature, NCF-SE 2023, and UGC IKS guidelines.

The model contains an important safeguard: IKS relates to contemporary disciplinary knowledge rather than positioned as its automatic substitute. Historical mathematical methods, for example, may be examined mathematically and historically. Traditional ecological practices may be investigated through field observation, environmental science, and community narratives. Medical traditions may be studied historically, culturally, or scientifically, but contemporary therapeutic claims should require appropriate current clinical evidence. This principle is consistent with the simultaneous commitments within NEP 2020 to Indian knowledge traditions and scientific temper.

Table 1. Comparison of Content-Centred, Competency-Based, and Integrated CBE-IKS Education

Dimension	Conventional content-centred approach	Competency-based education	Proposed CBE-IKS approach
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Primary focus	Coverage of syllabus	Demonstration of competencies	Demonstration of competencies through culturally and disciplinarily meaningful contexts
Student role	Receiver of information	Active learner	Investigator, interpreter, practitioner, and critical learner
Teacher role	Content transmitter	Facilitator and assessor	Facilitator, disciplinary guide, contextualizer, and source evaluator
Knowledge	Mostly textbook-centred	Applied disciplinary knowledge	Contemporary disciplinary knowledge + authentic Indian knowledge traditions
Pedagogy	Lecture and repetition	Inquiry, practice, projects	Inquiry, fieldwork, textual study, community interaction, experiments, projects
Assessment	Recall-oriented examinations	Performance and evidence-based	Performance, evidence, comparison, source analysis, contextual application
Cultural context	Often peripheral	Depends on curriculum	Integral where academically relevant
Learning standard	Marks obtained	Competency demonstrated	Competency + contextual understanding + critical evaluation
Error	Often penalized	Used for feedback	Used for feedback, comparison, and deeper inquiry
Desired learner	Knowledgeable examination performer	Capable and adaptable learner	Capable, culturally literate, evidence-sensitive, reflective learner

7. Curriculum Applications

The integration of IKS and CBE may take place instead across disciplines, rather than in one compulsory, separate course. A major part of the credits earned under the IKS is recommended to be linked to the discipline related to the student's major (UGC, 2023a).

Mathematics

A chance to develop mathematical reasoning rather than to remember the names of historical mathematicians is available in the Indian mathematical history. The learner could explore how geometry, number representation, combinatorics, astronomical calculation and algorithms have been understood over time and compare these with the current perception of these topics.

The competency is not just about India's use of a method. A better competency would be: The learner can reconstruct, explain, verify and compare a historical mathematical procedure from a modern mathematical perspective.

8. Environmental Education

Systems thinking can be a context for traditional water-harvesting systems, cropping systems, forest use traditions, architecture as a climate adaptation, or community-based resource practices. Students might research practice in their communities, describe how it works, identify some advantages and disadvantages to the practice and compare it with current scientific or engineering practices.

This changes the meaning of cultural knowledge from being a memory into a question.

Language and Linguistics

The grammatical traditions of India, multilingualism, classical and regional languages, oral narratives and literary traditions provide scope for comparison with other languages. A competency-based activity can have a learner look at grammatical features in two languages, translate a short text, compare written and oral forms, or compare how things are used in different linguistic contexts.

Arts and Crafts

There are certain traditional arts and crafts, such as music, dance, theatre, painting, weaving, architecture, sculpture and competency-based learning that are quite suited to competency-based learning, as the learning outcomes of these arts are self-evident. Students are able to innovate, execute, produce, interpret, record or work collaboratively with practitioners.

Philosophy, Ethics, and Governance

Historical philosophical and political documents may be critically examined, not taken for granted as prescriptions. Learners could contrast different roles in relation to knowledge, duty, ethics, governance, justice, or flourishing of the human person, and relate them to current constitutional and ethical structures.

Comparative engagement can foster argumentation, interpretation, critical reading and ethical reasoning.

Table 2. Illustrative Competency-IKS Curriculum Matrix

Discipline/context	Possible IKS resource	Target competency	Learning activity	Assessment evidence
Mathematics	Historical Indian geometry or numerical methods	Mathematical reasoning	Reconstruct and compare methods	Worked solution + explanation
Environmental science	Traditional water-management practices	Systems thinking and problem-solving	Conduct local case investigation	Field report + sustainability analysis
Language	Indian grammatical and oral traditions	Pattern analysis and communication	Compare linguistic structures	Analytical presentation
Arts	Regional craft/music/performance tradition	Creativity and cultural interpretation	Work with a practitioner or create an artefact	Portfolio/performance
Agriculture	Local agricultural knowledge	Observation and evidence-based evaluation	Compare local and contemporary techniques	Field journal + evidence matrix
History	Primary texts, inscriptions, material sources	Historical inquiry	Analyse competing interpretations	Source-based essay
Ethics	Classical philosophical traditions	Ethical reasoning	Structured debate/case study	Argumentation rubric
Health/well-being	Yoga as physical/cultural practice	Self-management and reflection	Guided age-appropriate practice	Reflective log; no unsupported medical claims
Architecture	Vernacular climatic design	Design thinking	Analyse local building features	Model/design justification
Community studies	Oral/community knowledge	Communication and documentation	Interview practitioners with consent	Recorded/documentary case study

Note. These are illustrative curricular possibilities, not prescribed NEP content.

9. Pedagogical Transformation

The CBE based integration of IKS should involve changes in pedagogy. Replacement of one set of books with another will not meet the objectives of NEP 2020.

Competency development demands active involvement of learner in the process, as cited by Gupta (2020), and as mentioned by Sangai (2021), the need for linking learning outcomes, pedagogy and assessment.

Experiential learning is a learning activity that involves the students in interaction with environments, practices, artefacts, practitioners and problems. To study traditional irrigation with students and discuss how it really works in practice, one can include visiting a system, creating a map, reaching out to and interviewing users and assessing its modern-day usefulness.

This works through the inquiry approach which inspires learners to consider how knowledge was constructed and how claims may be substantiated or refuted. Rather than memorizing sentences about the achievements of the past, a teacher might offer students texts about past achievements and have them answer these questions: What does this textual evidence prove or reveal about an achievement? What does it not prove or reveal? What is missing?

In project-based learning, multiple of the competencies can be developed concurrently. A project to record a traditional craft could include mathematics, economics, design, language, history, environmental sustainability, digital documentation, communication and entrepreneurship.

Dialogic pedagogy is also vital because there are various schools, disagreements and debates, languages, regions, and methods within Indian traditions. It would lessen the intellectual richness of IKS if it were presented as uniform on the inside.

The importance of the culturally embedded nature of students' understanding of phenomena in science education and the need for thoughtful crossings by the teacher is a recurring theme in the issues of cross-cultural science-education education literature (Aikenhead & Jegede, 1999). The integration of IKS can, therefore, be pedagogically valuable if students see the difference between forms of knowledge, which are historical, culturally determined, empirical in nature, philosophical in context, and scientific in character and do not include them all in one.

10. We will discuss Competency Based Assessment of IKS.

Assessment might be the most critical element of the successful implementation of CBE-IKS. Students will go back to memorization if teachers employ an experiential and inquiry-based teaching approach but still rely on final exams to assess them according to memorization.

From the educational assessment reforms that occurred in India have undergone various changes, as described by Vandana and Masih 2022, these include: Minimum Levels of Learning, Continuous and Comprehensive Evaluation, and the learning-outcomes approaches. They believe that while there are good policy intentions, these cannot be guaranteed to result in successful practice in the classroom, unless the concepts of assessment itself are clearly and consistently translated.

An integrated CBE-IKS assessment system should then therefore employ a range of evidence. The skills of analysing a historical scientific text cannot be evaluated by just asking a student when it was composed or by its author. The student should recognize the arguments, clarify the technical words, differentiate between observation and interpretation, and communicate conclusions, when comparing the argument to current understanding.

Rubrics can assess the areas of accuracy, reasoning, evidence use, creativity, communication, disciplinary understanding, source evaluation, collaboration, and reflection.

Another way of assessment could highlight four levels: Levine - Recall: the learner identifies a concept or describes the concept. Level 2 – Understanding: the learner describes its principles or history. Level 3 - Application: Learner applies or rebuilds the technique. Why don't you try Critical Transfer (Level 4) which includes evaluation, comparison, redesign or application to a new context. The fourth level is a higher level of competency, as the learner shows competency and is able to use the knowledge independently.

11. The learning outcomes of an integrated paradigm are presented.

The first benefit that is possible is contextual relevance. Concepts will be more meaningful to the learner when they are linked to their familiar surroundings, environment's language, local traditions or practices, historical examples, and community experiences.

Secondly, the model could be interdisciplinary. Many of the traditions of historical knowledge were not established within current departmental lines. Many fields of interest have converged, such as agriculture, ecology, architecture, health, and the arts, mathematics, philosophy, astronomy, or community life. Exploratory research of these kinds can aid students in discerning interconnections between subjects.

Thirdly, the approach can help with cultural literacy without the need for uncritical acceptance. Cultural literacy involves knowledge of the patterns of human intellectual and historical development which has led to an understanding of the social world. It should be stressed that a learner can study a text of philosophy without supposing that he or she must agree with what has been written there and can develop an understanding of historical European philosophy without considering all the claims as current truths.

Finally, integration of CBE-IKS can offer chances for community involvement. Artisans, farmers, musicians, traditional architects, language experts, local historians, the craft communities and others can turn into educational assets and sources. This can also create room for expanding knowledge beyond book knowledge.

Fifthly, competency-based IKS can build up research skills. Students can be taught to document sources, compare, interview, look at artefacts, understand and recognize primary and secondary texts and understand and recognize uncertainty.

Finally, the model could help in the possibility of achieving the target of the NEP to be grounded while learning to be global. Cultural rootedness and international competences do not conflict. Knowledge acquired as contexted information—such as what a discipline with expertise in local knowledge might uncover on its own—may be less intellectually flexible than knowledge that a learner has come to understand in relation to other contexts via a rigorous disciplinarity.

12. Challenges and Critical concerns

12.1 Teacher Preparedness

It is expected that teachers are knowledgeable of the content of the subjects, pedagogy based on competency, design of assessment, historic background and material of the IKS. It's a challenging cocktail. Teachers may not incorporate IKS or may make it a list of facts and stories without a system of professional development. In 2023, UGC therefore issued separate guidelines for teacher training and orientation in the context of IKS, where teacher preparation is seen as a significant requirement for implementation (UGC, 2023b).

12.2 Authenticity of Sources

IKS has become a public discourse, but not every public claim is historically and scientifically sound. Thus, the criterion laid down by the UGC, that curriculum materials need to be based on authentic texts, historical records, inscriptions, material evidence, and documented practices is very critical (UGC, 2023a). Students should also be taught the distinction between a historical claim that a text has an idea; a contemporary interpretation of that historical idea; a philosophical or cultural belief; an empirical claim; and a scientifically validated contemporary application. It is imperative that the categories are not confused, as this would have a detrimental impact on the viability of IKS scholarship and scientific education.

12.3 Scientific Temper

NEP's focus on Indian traditions is to be understood in the context of its adherence to the scientific temper and the use of evidence in reasoning. The goal of education should then be to engage in critical thinking, not to accept all the traditional claims on faith. Within the Indian traditions of knowledge, Gupta (2024) mentions scientific approaches as part of the tradition and its historical links with observation and inquiry. Modern scientific status, though, should rely upon modern evidence, not just on antiquity. Sharma et al. (2020) also emphasize the need to inculcate the scientific temper in the education system in India. In the process students should be encouraged to ask questions, to look at evidence, to repeat procedures, when necessary, to look for limitations in the procedures, and to differentiate symbolic or philosophical interpretation from empirical explanation.

12.4 Curriculum Overload

Adding IKS to a overcrowded syllabus might result in more memorization. It is better to integrate than accumulate. For instance, a mathematics teacher does not necessarily need an extra chapter on Indian Knowledge; there can be some historical relevance examples embedded in the chapters, where they bolster mathematics understanding.

12.5 Diversity and Inclusion

Indian Knowledge Tradition is not a singular one. Wherever applicable, regional, vernacular, folk, tribal, craft, oral, Buddhist, Jain and other intellectual traditions should be recognized in the context of Sanskritic traditions in the IKS curriculum. The culture should be represented in an appropriate way, keeping in view the pluralism of Indian history.

12.6 Assessment Capacity

Designing competency assessments is more challenging than preparing recall-based questions. Teachers require rubrics, exemplars, processes for moderation, and time to consistently and reliably assess projects and performances.

12.7 Risk of Tokenism

It is not serious IKS education to have one ceremonial lecture, display old quotes or have students memorize the names of historical figures. Simply integrating a token system might be inconsequential to education but serve administrative needs.

13. Recommendations

The first step in establishing a successful CBE-IKS model should be competencies, not quotes of content. The institutions should be explicit about what the learners should be able to do and choose the culturally and disciplinarily appropriate material.

Second, all major IKS courses need to be academically source verified. The development team should consist of subject specialists, historians or textual scholars (where appropriate), educators and practitioners.

Third, teacher preparation should not only be focused on teaching students to be IKS aware, but in teaching them how to learn IKS by inquiry, comparison, experience and evaluation. Recognize that traditional content is not necessarily effective content.

Fourth, establish local knowledge programmes in education institutions. Students were free to document ecological practices, crafts, architecture, oral histories, linguistic practices, agricultural techniques, performing arts, and community technologies. Ethical procedures are to be followed for such projects, particularly informed consent and appropriate recognition of community knowledge.

Fifth, technology can now be used for documentation and access. Local content can be shared with global audiences through digital archives, interactive maps, virtual museums, multilingual repositories and digital portfolios.

Sixth, Assessment should focus on demonstrated competencies in sixth. Memorization can only truly be a small part of it, but if it can be a part of it, then it needs to be accompanied by explanation, application, comparison, analysis, analysis, analysis, design, evidence and reflection.

Lastly, institutions should keep historical and current scientific validation separate. The principle ensures scientific integrity and the credibility of IKS.

Eighth, Curriculum should be plural and inclusive. It is advisable to encourage the development of locally relevant modules by the regional universities and schools instead of defining an identical list of cultural material at the central authority.

Lastly, there should be empirical evaluation of implementation. Future studies are recommended to compare the student outcomes of a traditional classroom with a CBE-IKS classroom, assess teacher readiness, conduct reliability assessment of student assessment, explore student attitudes, and determine if CBE-IKS learning is effective in improving critical thinking, cultural literacy, application, and problem solving.

14. Discussion

Based on this analysis, it can be concluded that if integrated with care, Competency Based Education and Indian Knowledge Systems can be considered as two facets of NEP 2020. CBE asks about how and why to learn, and IKS can provide culturally relevant contexts, knowledge sources, practices and intellectual traditions.

This relationship, however, is not simple, but rather complex. The pedagogical problem of making students memorize ideas and facts without understanding them – a problem that competency-based reform seeks to solve – is the pedagogical problem that IKS would generate. On the other hand, competency-based learning that is divorced from the language, culture, social and historical backgrounds of the learners can be technically efficient but educationally superficial.

Thus, the stronger model is a combination of three types of relevance. The first is disciplinary relevance: knowledge must be relevant and meaningful in mathematics, science, language, arts, history, environmental education, professional studies, or another area. The second is learner relevance: Learners' learning should be related to experiences, contexts, questions and problems relevant to learners. The third is epistemic relevance: They should not only be made aware of what is being said, but how knowledge is being built. There are various types of justification for different types of knowledge claims.

This third dimension might be the most impactful aspect of an integrated model. A grown-up education system shouldn't simply swap one authoritative textbook story for another. It should enable the learner to ask questions.

Competency-based IKS has the potential to transform when a student can say not just “I know what this tradition says” but: “I can explain it, examine its evidence, understand its history, compare it with other knowledge, apply what is useful, question what needs to be investigated, and communicate what I have concluded responsibly.” This is a far better learning achievement than rote learning.

15. Conclusion

The use of Competency Based Education and Indian Knowledge Systems is an important opportunity in the reform agenda outlined in NEP 2020. CBE changes the emphasis from learning to complete the syllabus or recall knowledge to knowledge, skills, attitudes, values, application and transfer. Some of the many culturally and historically relevant intellectual tools through which these competencies can be acquired and advanced are available in IKS.

The main thesis of this paper is that IKS should not be simply a part of the curriculum. It is more educationally valuable if used in an inquiry-based, experiential, competency-based and interdisciplinary pedagogy. History of mathematics can be used to foster reasoning, traditional ecological knowledge can be used to foster systems thinking, arts and crafts can be used to foster creativity, language can be used to foster analysis and communication, and historical texts can foster source criticism, and community knowledge can foster field investigation.

Meanwhile, robust safeguards are crucial for successful integration. There is a need for authentic sources, expertise in the disciplines, inclusive representation, teacher development, rigorous assessment, scientific temper and clear distinction between historical significance and scientific validity in the contemporary.

Hence, the new paradigm under NEP 2020 should not be termed as a revival of the past. Its more fruitful understanding involves an important conversation between legacy knowledge and current knowledge, structured by the skills that learners need in the future. Correctly applied CBE-IKS integration can play a role in creating a culturally inclusive, intellectually open, scientifically responsible, multi-disciplinary culture and educate a learner for Indian and international environment with sincerity and seriousness.

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