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INDIAN KNOWLEDGE SYSTEMS AND CREATIVE PROBLEM-SOLVING IN CURRENT EDUCATIONAL PRACTICES: CONTEXT FROM NEP 2020

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ABSTRACT
The current education system focuses on improving learning outcomes. learners construct new things and skills to solve more complex problems. Nowadays, learners encounter various issues in their day-to-day life. critical and creative thinking is an essential part of resolving problems effectively. India's National Education Policy 2020 (NEP 2020) emphasizes the importance of incorporating Indian Knowledge Systems (IKS) into the educational framework to promote comprehensive, relevant, and meaningful learning. This paper introduces IKS not just as an archive of old knowledge but as a living intellectual framework that encourages questioning, ethical reasoning, and creative problem-solving. The project investigates the role of Indigenous Knowledge Systems (IKS) in enhancing creative problem-solving abilities in primary and higher education, using classical literature, Indigenous science, traditional crafts, environmental practices, and community-based knowledge as foundational sources. The paper also looked at how NEP 2020 supports new policies, curriculum changes, and new ways of teaching that encourage cross-disciplinary learning, hands-on experience, systematic thinking, and community engagement. The paper explores how the deliberate inclusion of Indian knowledge systems in contemporary education can enhance learners' critical thinking, creativity, and problem-solving skills, thereby preparing them to tackle complex real-world problems effectively.

KEYWORDS: *Indian knowledge system (IKS); Creative problem-solving skills; NEP 2020: Transforming Learning approach:*

INTRODUCTION

In the 21st century, globalized education is a more transformative way for students to learn, and creativity, critical thinking, and problem-solving are all important talents. From the Indian education perspective, the National Education Policy 2020 (NEP 2020) robustly advocated for Indian Knowledge Systems (IKS) as a foundational approach to enhance the curriculum and provide comprehensive learning for students. The implementation of IKS in educational institutions aims to preserve cultural assets while simultaneously functioning as a strategic instructional initiative to enhance students' cognitive and intellectual resources.

This study delineates a comprehensive concept of Indian Knowledge Systems, encompassing classical literature, folk sciences, crafts, environmental knowledge, and community-based behaviors. It examines the integration of various knowledge types across grade levels and disciplines to facilitate alternative problem-solving approaches for learners. The conversation covers things like aligning policies, designing the curriculum, training teachers, classroom practices, evaluation methodologies, and research goals. It also includes real-life examples from current projects and programs in schools and colleges. Understanding Indian Knowledge Systems as Epistemological Resources:

Indian Knowledge Systems encompass methodologies of inquiry (e.g., observation, iterative development, empirical verification), discipline-specific techniques (e.g., mnemonic and algorithmic methods in mathematics), and socio-ethical frameworks (e.g., dharma, folklore) that have traditionally influenced the generation and utilization of knowledge. When IKS is seen as a living way of knowing instead of a set of facts, it can be used in many ways to teach, such as systems thinking in environmental management, embodied cognition in yoga and crafts, and analogical reasoning in classical problem-solving. These are all parts of Creative Problem Solving. Creative Problem-Solving Skills in School:

Creative problem-solving is a vital talent that may significantly foster the educational experiences of children in school. This method gets students interested and keeps them interested by making them use their creativity, critical thinking, and resourcefulness to solve significant and hard challenges (Margaryan, Bianco, & Littlejohn, 2015). Creative problem-solving not only helps students think about numerous options and circumstances, but it also makes their thinking more flexible and stronger. These abilities are useful for more than just education; they may

also assist with various challenges in life (Means et al., 2010). In elementary school, teachers can employ creative problem-solving to make learning more engaging and focused on the pupils. Teachers may utilize technology to create problem-solving exercises that help youngsters be creative, work collaboratively, and think critically. Digital storytelling, coding activities, or virtual simulations might be utilized to assist students in devising innovative problem-solving strategies (Chai, Koh, & Tsai, 2013). Students may learn how to deal with the intricate and continually changing world around them by learning how to think creatively and solve issues in school. This will help kids be more flexible and learn better for the rest of their life. In the field of education, CPS is developed through open-ended challenges, interdisciplinary inquiry, and opportunities for controlled risk-taking. Indian Knowledge Systems (IKS) are a big part of CPS since they provide alternative methods, culturally appropriate issue frameworks, and community-approved practices. This gives students more ideas about what they can do and try.

NEP 2020 and Institutional Curricula

The National Education Policy 2020 states that all subjects should include Indian Knowledge Systems and that students should study in a way that is relevant to them. Several schools and organizations have already added IKS modules to their classes. This shows that the policy is progressing from being a policy to being put into action, just as the rgu.ac curriculum. A lot of the time, these new curricula stress how different courses are related to each other. For example, Ayurveda and biology, Vedic mathematics and computational thinking, or traditional water management and environmental science. This indicates that they go well with teaching methods that use CPS.
Why Effective Implementation is Important:
Policy recognition provides you credibility, but to make it work, you need to
1. Connect IKS ideas to particular learning goals.
2. Combining with skill frameworks like creativity, critical thinking, and working together,
3. Enough resources and training for teachers.

IKS-integrated curricula show how to construct modular courses, but to make inclusion more than just a symbol or token, large-scale implementation needs textbooks, resources in more than one language, and relationships with the community. Pedagogical Principles for Incorporating IKS in CPS Development:

1. **Pluralism in Knowledge**

Putting IKS next to current science as a way to learn that works well with both. This helps students learn how to analyze different research methods, judge evidence, and come up with solutions that work together.

2. **Learning via experience and the body**

Making crafts, farming, and yoga into hands-on experiences helps kids learn how to think like designers and try things out again and over.

3. **Multidisciplinary and Systems Thinking**

learners learn to solve problems across various dimensions by engaging with case studies such as integrated water management or agroforestry.

4. **Community based out-reach programme**

Involving artisans, farmers, and local knowledge holders as co-teachers places real-world problems in a living context.

5. **Learning with Heuristic and Cognitive Tools**

IKS techniques such as mental calculation, pattern recognition, and analogical thinking empower students to apply these skills to new problems.

6. **Reflection and Metacognition**

help the learners learn how different knowledge systems have influenced their thinking and solutions.

Learning strategies and lesson planning:

1. **Project-Based Learning (PBL)**

Example: A project on local water scarcity, integrating traditional rainwater harvesting methods, scientific measurement, and design prototypes.

2. **Heuristic Workshops in Mathematics and STEM**

Practicing alternative solutions to modern problems by teaching Vedic mathematics and estimation techniques.

3. **Case Studies Based on Classical Texts**

Analysing modern urban flooding using ancient texts on urban planning and water management.

4. **Maker Spaces and Craft Labs**

Teaching materials science and sustainable design using weaving, metalwork, and natural dyes.

5. **Storytelling and Dialogue-Based Methods**

Using stories and role-playing discussions to present ethical and social dilemmas.

Professional Skills Development of Teachers

1. competency-based In-Service programme.
2. Provide Open Resource Repository and Multilingual Materials.
3. Follow the Collaborative Teaching and Mentorship Programs.
4. Assessment of Literacy Development.
5. Appropriate Method and Strategies of Assessment.
6. Construct Performance and Portfolio Assessment.
7. Formulate Creative Problem-Solving Rubrics.
8. Organize Community-Validated Assessment.
9. involving Research and Impact Evaluation.
10. Evidence, Pilots, and Emerging Practices.

Initial research and pilot projects show that appropriate integration of IKS increases student engagement, sense of identity, and higher-order thinking skills. Furthermore, only adding content without changes to pedagogical methods may not ensure the CPS development.

Risks, Ethical Considerations, and Mitigation:

1. Risks: Tokenistic inclusion, cultural simplification, misuse of knowledge
2. Ethical Safeguards: Community consent, source attribution, benefit sharing
3. Quality Assurance: Expert review and pilot feedback

Framework of Implementation

1. First stage: one year (policy making and pilot study)
2. Second stage: a two or three-year evaluation process.
3. Third stage: Scaling and Institutionalization (Years 4–6)
4. Fourth Stage: Stability and Research (Ongoing)

CONCLUSION

The revitalization of the Indian Knowledge System in education strengthens learners' knowledge-based tools and grounds education in the local circumstances. It opens powerful tracks for developing creative problem-solving skills through multidisciplinary and experiential learning. The policy endorsement of NEP 2020 and recent curriculum reforms have created a favorable environment for this initiative. However, to ensure its actual impact, a coordinated approach involving teacher development, assessment reforms, ethical community engagement, and evidence-based research is essential. If implemented correctly, IKS-based education can cultivate students into technologically proficient, creatively capable, and ethically conscious citizens.

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