EXPLORING THE SCOPE OF IMAGINATION, CREATIVITY AND INNOVATION IN INDIAN SCHOOLS THROUGH THE LENS OF NEP 2020

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ABSTRACT

Policy makers in Indian education at all levels of formal education have focused on the necessity of imagination, creativity and innovation (ICI) as important outcomes of schooling. Nurturing such qualities are essential in developing a nation in terms of cultural, social and economic development. Renzulli et al. (2021) developed a systematic process by which schools can evaluate and plan for improvement of ICI resources. Most people concur that in addition to producing literate and numerate students, schools also need to foster students' creativity. (Lucas et al. 2013). Therefore, the importance of policymakers on cultivating ICI skills in this regard is highly needed. NEP 2020 highlights creativity and innovation at different levels of educational system which definitely takes under consideration the factor of imaginative faculty. To foster ICI in classroom creativity supportive environment is required (Brandon, et al. 2022) and use of technology removing language barriers in teaching and learning process may enhance the supportive measures for ICI providing quality education. ICI is a process which starts its journey from imaginative faculty and gets its culmination in the form of innovation. A teacher can take the initiative of promoting ICI in the classroom following the amenities available or required. Schools must provide experiential learning, hands on activities to develop creativity, innovation, critical thinking, divergent thinking, and problem-solving abilities and of course imagination. The NEP 2020 outlines teacher's role and ways of fostering these skills. According to the NEP 2020 teachers must be at the centre of the fundamental reforms in the education system. It suggests restructuring the teacher education programme so that teachers are prepared in that way. National Policy for Promoting Innovations in Schools (2022) lays out detailed guidelines for creating innovation centric education system in schools which requires all the faculties in developing ICI. This paper tries to highlight the scope of imagination, creativity, and innovation being created in Indian educational context. The teacher's role, infrastructural advancements, curricular supports and developments alongside other strategies in inculcating these skills in schools are reviewed following the latest education policy and guidelines available.

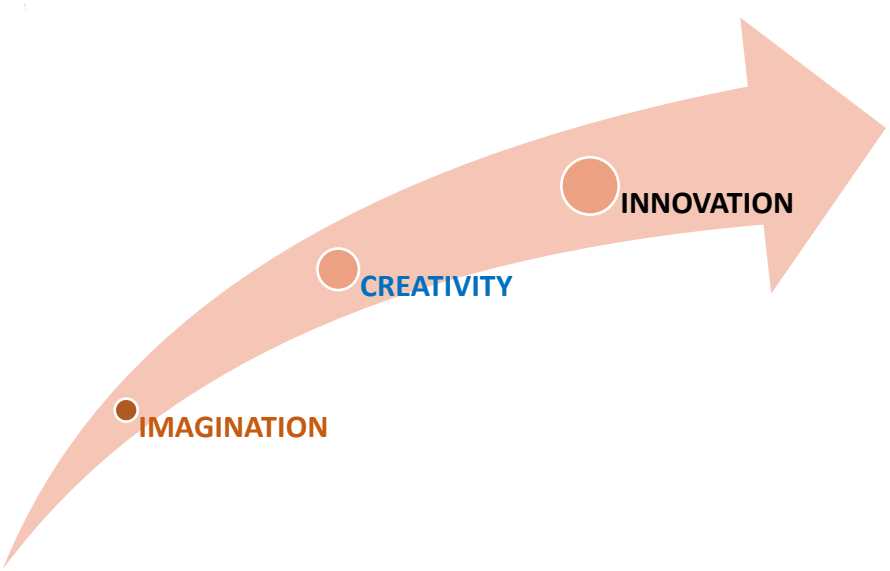
Key words: Imagination, Creativity, Innovation, NEP 2020, Teacher's role.

INTRODUCTION

Imagination, creativity and innovation (ICI) are three correlated constructs which we always mingle up while discussing. To bring innovation we have to be imaginative. Imagination, which serves as the foundation for all creative endeavours, is a crucial element of cultural life in

general, enabling both artistic and technical production (Vygotsky, 2004). Imagination is thinking of anything which does not exist in the present. Whereas **"**Creativity is the production of novel and useful ideas in any domain**"** (Amabile, 1996). It is the ability to produce work that is both novel (original, unexpected) and appropriate (useful, adaptive concerning task constraints) (Sternberg & Lubart, 1999). Creativity is doing something really meaningful on the foundational basis of imagination; it creates or generates possibilities for any given set of problems, challenges or situation using novel ideas and imagination. Further, innovation is defined as a modernisation or recreation of an existing element or phenomenon or the invention of a completely novel element **(**The Norwegian Council of Higher Education, 2016). So, we may say that Innovation is the process of putting idea into practice. This is like a journey where all these three constructs are inter-linked and systematically works. To produce something impactful (innovative), one must put ideas to work (creativity) but at first one need to generate ideas (imagination). IMAGINATION + CREATIVITY = INNOVATION

Fig.1. The path of Imagination, Creativity and Innovation



The above path is definitely the journey from **foundation (imagination) to product (innovation) via process (creativity)**. Renzulli's 3 Ring Conception of Giftedness also mentions the importance of creativity in promoting something which produces value (Renzulli,2016).

These components are listed in the NEP-2020, the Indian education strategy, which aims to educate students holistically by reducing memorization and increasing learning that is enjoyable, interesting, and effective. Irrespective of its methodology, infrastructure, or techniques, 21st-century teaching and learning asserts that learning is innovative by encouraging creativity and imaginative faculty. This paper analyses the extent to which this educational deed offers chances to advance the ICI. In order to give students enough opportunity to develop their creative and inventive faculties, the National Policy for Promoting Innovations in Schools (2022) documents a revolutionary method to knowledge transacting among students at every level. The current imperative of need-based education must unquestionably support learning through innovation. Hence, this article figures out the ways with which these faculties of ICI can be attained.

OBJECTIVES

The present study seeks:

(i) To establish Renzulli's concept of Imagination, Creativity, Innovation (ICI) in Indian context.
(ii) To find out the scope of ICI in Indian schools through NEP-2020.
(iii) To find out the scope of ICI in Indian schools through National Policy for Promoting Innovations in Schools 2022.
(iv) To decipher the function of schools in the promotion of ICI.
(v) To figure out the role of teachers in promoting ICI in Schools.

METHODOLOGY

The methodology adopted in this study is qualitative in nature and involves interpretation of primary sources so as to achieve the objectives set. The NEP-2020 and the National Policy for Promoting Innovations in Schools are discussed in detail to figure out the scope of imagination, creativity, innovation (ICI) in schools. Several other secondary sources are taken under consideration for the purpose being served.

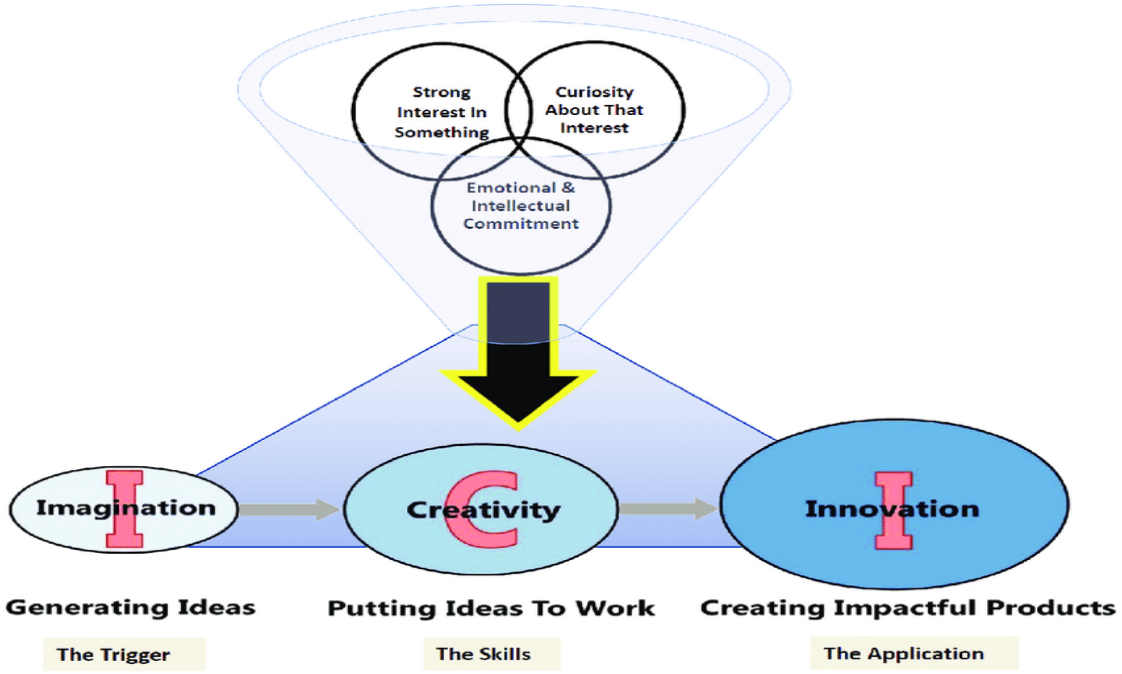
WHY ICI?

The 21st century is a time when the world is changing constantly in a number of ways, including the way we think, respond, and live. To keep up with this ever-changing environment, we must acquire certain talents. Everybody among us works in a vocation of some sort. However, in order to maintain a dynamic work environment and adapt to changing market demands, professionals across all industries require specialised skills. The ability to think creatively and imaginatively is essential for professionals in a variety of fields, including teaching, medicine, science, engineering, farming, and business. It will be impossible for them to continue working if they lack these kinds of abilities. We must always use a variety of thought processes to solve difficulties and fit in with society. Thus, in both our personal and professional lives, we require the ability to solve problems in every circumstance. However, the ability to solve problems also necessitates the generation and application of new ideas for the advancement of both our society and the global community. Each of us needs to make a contribution to society in order to be seen as a responsible citizen by the next generation. We need to be inventive, creative, and innovative in order to improve our problem-solving skills and generate fresh concepts. We can conjure up new possibilities with our imagination that are not really possible. Anyone with a little ingenuity can come up with multiple approaches to solving an issue. Innovation allows us to create new products, new processes, and new technologies. Creativity helps us give meaning to imagination. Teachers who possess an imaginative, creative, and innovative mind set can also impart knowledge to their students in this way.

Renzulli's Concept of ICI in Indian Context:

As stated in the introduction the act of implementing an idea into execution is called innovation. This resembles a voyage in which each of the three constructs is connected to the others and functions progressively. Applying ideas to use (creativity) is necessary for creating something significant (innovative), but idea generation (imagination) is a prerequisite. So, Innovation is the sum of imagination and creativity. In their ICI index model, Renzulli et al. (2021) make this claim in their articles. The NEP-2020, which attempts to educate students holistically by reducing memorization and increasing learning that is inventive, creative, and productive. Therefore, a definite relation between the NEP-2020 and the elements of ICI can be established. 21st-century teaching and learning across the globe asserts that learning must be innovative in nature by encouraging creativity and imaginative faculty.

Fig. 2 'Theoretical framework of the ICI instrument' by Joseph S. Renzulli.



RECOMMENDATIONS OF NEP 2020 TO FOSTER ICI IN SCHOOLS

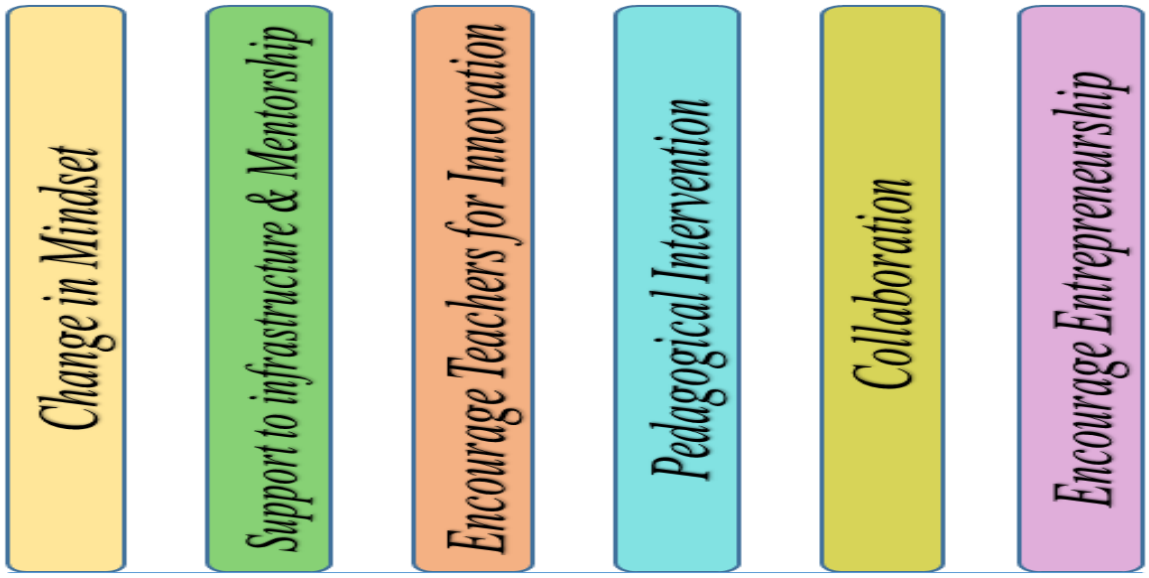
According to NEP 2020, learning should be enjoyable and centred on the students' activities and life experiences rather than memorization, making it appropriate for the twenty-first century. Creative thinking, innovation, critical thinking, higher order thinking, practical learning, multilingualism, problem solving, scientific temper, digital literacy, experiential learning, etc. were all highlighted in NEP 2020. Our world has to evolve and we need creative and innovative minds to drive economic prosperity. Therefore, it is critical that schools promote innovation and creativity. For the purpose of assisting kids in acquiring 21st century skills such as deep knowledge, problem solving, critical thinking, and divergent thinking. Institutions of higher learning must give students a variety of chances to express their creativity. Students must be given a variety of inexpensive, handcrafted products by the school that will be useful. Rather than focusing on cognitive growth, NEP 2020 promotes the development of core reading and numeracy as well as higher order thinking. It offers instructional recommendations for each level. Learning activities have included play, exploration, activity-based pedagogy, reading, writing, speaking, art, languages, math, science, physical education, experiential learning, transdisciplinary study, critical thinking, in-depth learning, and lifelong learning. Along with these, NEP also emphasises experiential learning, arts-integrated learning, sports-integrated education, and pedagogy based on storytelling to teach students about India's art, culture, and ethos as well as teamwork, responsibility, citizenship, self-initiative, self-direction, and life skills for holistic development. Students in the classroom need to be more adaptable and less disciplined in order to freely explore who they are without feeling constrained or afraid. In order to foster the growth of knowledge in the fields of artificial intelligence, machine learning, data science, and mathematical thinking, educational institutions need to offer resources such as games and puzzles. Vocational crafts including carpentry, gardening, pottery making, and metalworking should be taught to students. For the purpose of providing students with extracurricular activities, the school ought to have planned sports, arts, crafts, and quizzes. The Panchatantra, the Jataka, the Hitopodesh, and other tales and motivational literature must be available to students in a library. Teachers encourage pupils to participate in science, maths, music and dance performance, chess, poetry, language, drama, debate, sports, environmental clubs, health and wellbeing clubs and other activities in order to discover their unique skills. To discover gifted pupils Olympiads and competitions in a range of areas will be

held around the nation. School districts need to use technology to create smart classrooms that enhance the teaching and learning process.

National Policy for Promoting Innovations in Schools and Scope of ICI:

The six key pillars of ideation, innovation, and entrepreneurship, all of which require imagination and creativity—are highlighted in this policy. The first pillar discusses the need for a mentality change that makes parents, instructors, and students more conscious of the importance of fostering these attributes. The usage of infrastructure and mentorship support is the emphasis of the second pillar. The policy's third pillar outlines many ways to encourage teachers to assist with initiatives that advance innovation, the highest kind of travel. The fourth pillar concentrates on various pedagogical interventions to foster students' critical thinking, creativity, imagination, and problem-solving skills. The fifth pillar of the policy offers several approaches to collaborate with ecosystem enablers. The sixth and final pillar of the policy encourages school entrepreneurs to lead start-ups and provides guidance on equity sharing structures, IP ownership, innovation management, revenue sharing mechanisms, and other related topics.

Fig. 3. Six pillars of promoting Innovation



Additionally, in accordance with the new schooling structure (5+3+3+4 model) outlined in the NEP 2020, the policy outlines the particular measures that must be implemented by all schools for children at different learning levels, i.e., foundational, preparatory, middle, and secondary. The MoE (Ministry of Education) hopes that by launching this programme, schools will receive much-needed support in encouraging activities that foster the use of faculties like creativity. Additionally, this strategy is consistent with other programmes such as KAPILA, School Innovation Councils, the "Innovation Ambassador" training programme, etc. It is crucial to strive for this kind of ecology in schools in a comprehensive way. The development of critical life skills and preparing children for life beyond school will be greatly aided by a structured education system. (National Policy for Promoting Innovations in Schools 2022).

Innovation must be emphasised in the educational system of the twenty-first century. Innovation is now at the centre of the educational ecosystem due to the requirement for curriculum quality improvement and the goal of equipping students with skills necessary for the twenty-first century. Thus, it is important to create and promote educational cultures that

foster creativity. The goal of pedagogical approaches should be to help kids develop innovative thinking skills. Thus, it is appropriate to address the development of creativity and imagination. By encouraging positive attitudes towards learning rather than studies focused solely on passing exams, this approach offers opportunities to advance ICI. The development of each student's creative potential is another priority emphasised in the NEP-2020. The policy provides guidance to school education systems on a range of initiatives that can be implemented to foster a learning environment in which students' entrepreneurship, imagination, creativity, and problem-solving abilities can be fostered. It is encouraged for schools to engage in innovative activities. To foster innovation in the school education ecosystem, particular sets of skills and values from many domains will be selected for integration and absorption at each step. These activities can be conducted under six pillars, which cover every learning stage from pre-school to higher education. The researcher's exclusive focus in this study has been the middle school level, where specific recommendations or suggestions for boosting the aforementioned ICI are provided.

Promotion of ICI in Middle Schools (Classes 6 to 8)

This policy in accordance with NEP 2020, requires all schools to set up at least two hours every week for required tinkering activities. The main goal of these seminars is to give students practical experience with curricular topics through ICI-based experiential learning activities. In order to encourage cooperation, creativity, and innovation among students, schools may support Self-Organized Learning Environments (SOLE). Renzulli's concept of ICI is quite applicable to this situation.

The scope given in the Middle Schools can be stated in the following points:

(i) Professionals are asked to be invited to teach lessons utilising technology in order to foster student learning with real-world insights.
(ii) As part of student enrichment activities, courses that encourage innovation and creativity are introduced.
(iii) Educational institutions have the power to guarantee that books are accessible, available, high-quality, and read by people in a variety of levels, genres, and locations.
(iv) It may be recommended that students enrol in a course that provides them with practical experience in key trades like carpentry, electrical work, metal work, gardening, ceramics, etc.
(v) Events over the ten bag less days can be planned to give students the chance to intern with skilled local workers including painters, carpenters, gardeners, potters, and other craftspeople.
(vi) It is suggested that school authorities should develop School Innovation Councils (SIC).

A few other initiatives that the school could implement in accordance with the policy are:

i. Socio-economic innovation challenge programmes that encourage students to work together to find solutions to a range of real-world challenges, ideally local ones.
ii. Contests that make it easier to take part in innovative activities.
iii. Offer extra challenging readings for the class.
iv. Give gifted students' specialised resources.
v. Establish a Mentoring Network.

By going to historical, cultural, and touristic sites and monuments, meeting local artists and craftspeople, and touring higher education facilities nearby, students will be exposed to activities that take place outside of the classroom.

Functions of Schools for Promoting ICI:

The NEP 2020 and the subsequent policy (2022) highlight few functions of schools for promoting these faculties:

1. Workshops, training courses, exhibitions, entrepreneurial competitions, innovation-focused activities, poster design competitions, and other events should be used by educational institutions nationwide to boost experiential learning.

2. Plan events in honour of National Innovation Day on October 15.

3. Establish cooperative alliances with various education-related groups.

4. Encourage pupils to share creative ideas and have class discussions about them.

5. To raise awareness of ICI, plan student trips to neighbouring creative locations.

6. Give a yearly prize to the student and teacher who has the greatest thought-provoking, inventive, or creative assignment.

7. Educational institutions are required to preserve a "Wall of Fame" on their campus, showcasing former students who are currently prosperous business owners.

8. An "Innovation Wall" to highlight the inventiveness and originality of educators and students should exist, modelled after an art gallery.

9. It is mandatory for educational institutions to release a yearly self-evaluation of their students' accomplishments through their website.

10. In order to lead the ICI, principals must designate devoted staff members.

11. In order to carry out relevant tasks, it is also suggested that the schools should establish "Innovation Fund."

12. In order to encourage these traits, schools can set up an Innovation Club for Preparatory and Middle School pupils.

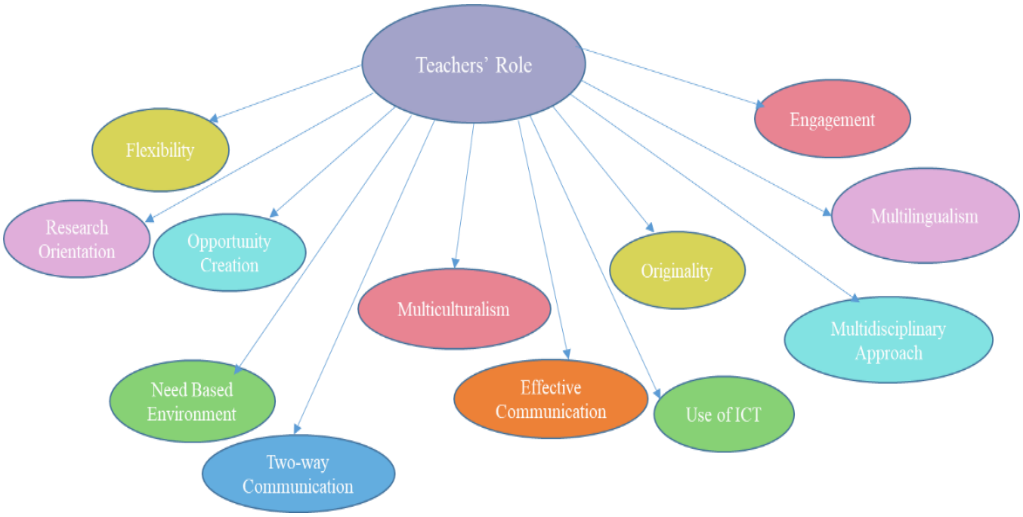
Role of Teachers in Promoting ICI in Schools as per NEP 2020:

Teachers are the one who can drive the students to the proper path. Students must learn to adapt to all circumstances and compete in this digitally-driven, competitive environment in order to select their careers. They must have an inventive and creative mind in order to enhance their expertise. Therefore, teachers serve as mentors who can encourage students' creativity and inventiveness. Promoting teachers' development and enrichment initiatives is the primary responsibility as per the policy. According to NEP 2020, teachers should have different roles to play:

1. **Flexible:** The instructor will act in a way that allows students to freely express themselves.
2. **Research-oriented mind set:** Instructors ought to be informed at all times to learn more about the world that is changing quickly.
3. **Provide opportunities:** Teachers are required to provide their students with opportunities to unleash their inner potential.
4. **Establish a free learning environment**: Teachers can set up a setting where students can study in accordance with their needs.

5. **Encourage pupils to ask questions**: Instructors should provide students the chance to practise inquiring and work to pique their curiosity.
6. **Understanding of multiculturalism**: In order to teach pupils about the qualities of other cultures and help them become good citizens, teachers must be knowledgeable about a variety of cultural contexts.
7. **Effective communicator**: Teachers must to have strong communication skills. As a message sender and recipient, he or she would be excellent.
8. **Understanding of technology**: We are living in a technological era. It is therefore essential to possess the appropriate expertise on the use of technology in the classroom.
9. **Originality**: To be able to educate in the classroom in a novel style, a teacher needs to possess an original thinking.
10. **Multidisciplinary approach**: A teacher must combine information from several different fields while using a multidisciplinary approach in the classroom.
11. **Understanding of multilingualism**: Students in a classroom vary in their backgrounds. In order to interact with students, teachers must be multilingual.
12. **Students' engagement**: In order to foster practical knowledge, teachers should include students in hands-on tasks.

Fig.4: Role of Teacher's for promoting ICI



CONCLUSION

The new education strategy places a strong emphasis on children's overall development and high-quality education. It aims to raise the bar for the educational system. Encouraging students to participate in ICI through IIE, SIC, and KAPILA will undoubtedly improve the quality of innovation-based learning across the boards. The comprehensive recommendations offered by NEP2020 and its ensuing addenda emphasise how critical it is to infuse imagination, creativity, and innovation in order to fortify the nation as a whole. India's progress in terms of culture, economy, and society is largely dependent on its students. Since they are the foundation of the future, developing skilled human resources in a nation with a huge population like India requires right kind of vision. The requirements and possibilities for improving ICI among students were clearly identified in this ground-breaking publication that had a huge impact on the Indian educational system. It would create a dynamic knowledge society if NEP implementation is in line with nation building. The goal of NEP is to completely revamp the educational system in order to encourage innovation. Students' unique and imaginative abilities should definitely be encouraged. Since, ICI has been given a lot of leeway in NEP and if every possibility is instrumentally deciphered, then goals of achieving ICI will be attained in near future.

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