

INNOVATIVE PEDAGOGY FOR 21ST CENTURY SKILLS IN HIGHER EDUCATION

DR SHAILENDRA KUMAR UPADHYAY

Assistant Professor B.Ed

Jawahar Lal Nehru Smarak P.G.College Maharajganj U.P

Introduction

Innovative pedagogy is basically the science or art of teaching in the teaching-learning process. The term generally refers to strategies of instruction or a style of instruction. Pedagogy is also sometimes referred to as the correct use of teaching strategies. Etymologically, the word 'pedagogy' comes from the Greek word "Paidagogeos", which means from 'pais' child and 'ago' lead, literally, "to lead the child". In English speaking, the term pedagogy refers to the science or theory of education. Malcolm Knowles reasoned that the term 'Andragogy' is more pertinent when discussing adult learning and teaching. He referred to 'andragogy' as the art and science of teaching adults. The skill sets required by the learners of 21st century are extremely different as compared to the previous generation learners as the problems of 21st century are vastly different and more complex than previously imagined. It means that the demands placed on the next generation workforce will be very different and they will need to be prepared to be more innovative. In order to achieve this goal, the Higher Educational Institutes of India in the 21st century need to play a very crucial and inspiring role in tapping the intellect of students and scholars and guiding them to actualise their potential towards making India a global knowledge power. In this paper, the author is present some of the innovative pedagogies which will enable the Higher Educational Institutions of India to inculcate 21st-century skills among the students so that they have the potential to become global leaders, and compete and face the challenges of the next decades of the 21st century. Education is a process of facilitating the learning of knowledge, skills, values and habits and is extremely crucial for the social, economic and political development of any nation. According to National Education Policy, 2020 (NEP-2020) The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep-seated treasure and education helps in its manifestation as the perfection which is already within an individual. For this all aspects of curriculum and pedagogy will be reoriented and revamped to attain these critical goals. Specific sets of skills and values across domains will be identified for integration and incorporation at each stage of learning, from pre-school to higher education.

The word innovative means the introduction of novelties, the alteration of what is established, a novel practices and a change in established methods. Generally, In the field of education to innovate is to create something new which markedly deviates from traditional practices which have been followed since a long time to impart education at different level. Innovative pedagogical approaches, are those pedagogical approaches which involve the usage of appropriate means (tools) and methods (ways) in a new and creative way and in varied combinations in order to make the teaching-learning process more effective by enabling the learners to attain the expected/defined learning outcomes, develop students' capabilities in problem-solving, teamwork, learning to learn, reflective thinking etc. to be creative, adapt to changes, manage and analyze information, and work with knowledge (NEP, 2020). Innovative teaching techniques are significant for the all-round development of students who are the future assets of a nation. Innovative pedagogical approaches are very important as far as creating a positive impact on students learning, behaviour and attitudes are concerned. In addition, these approaches are capable of ensuring that all students achieve the pre-determined learning outcomes and to a considerable extent have the ability to translate students' potential into performance whether it be in cognitive, psychomotor or affective domains of learning. Finally, innovative pedagogy can inculcate an attitude of lifelong learning among both educators and learners. The system is simply drifting. Most HEIs' pedagogical practices are still traditional focused on lecture methods and rote learning but in modern times pedagogical techniques are more digital , child centered ,interactive and democratic that encourage higher-order thinking skills such as critical thinking, analysis, and application. The 21st century is a more complex world in comparison to the previous generations. As a result, the problems of the 21st century are much more complex and different than previous generations. This indicates that the responsibilities entrusted to the workforce of the future will be significantly different and they must be ready to be more innovative. Compared to the previous generations, the newer generations will need a different set of skills to solve the more complex problems being faced by the 21st century .In view of the foregoing context, the current study outlines some of the cutting-edge pedagogy that will allow India's higher education institutions to equip their students with 21st-century skills so they can compete in the coming decades, meet challenges head-on, and establish themselves as global leaders in their respective fields of study.

Need of Innovative Pedagogy For 21st Century and NEP-2020.

India is a developing country .We are moving in an era of accelerating changes in all walks of our national life, and education is no exception to it .We are developing and moving toward

newer educational activities such as pedagogy based on the knowledge of the technology that has been developed in the past several years in western countries. Now it is need of time to use educational technology to improve pedagogies for successfully imparting the prescribed body of knowledge to students. The “learning pyramid”, suggests that most students only remember about 10% of what they read from textbooks, but retain nearly 90% of what they learn through teaching others(Fig 1). This model also suggests that some methods of study are more effective than others and that various study methods will lead to deeper learning and longer-term retention. In India, the education system is still mainly traditional due to many reasons, most importantly, it is cheaper than modern techniques. On the other hand, modern education system is based on using high-tech equipment and lots of modern gadgets eliminating notebooks and textbooks. There is increasing use of LCD projectors and whiteboards to make the classrooms more interactive. These teaching methods generate more interest among the students and enhance the learning experience of the learners .The innovative pedagogy in the teaching-learning process is beneficial to the students as these pedagogies enhance knowledge, and understanding and develop 21st-century skills among the students. In this regard, the National Education Policy –2020(NEP--2020) has been much needed and timely towards evolving and creating a new education system that will enhance skills among learners. It emphasizes promoting creativity and critical thinking, which contribute to innovation. Therefore, the implementation of NEP-2020 in all the HEIs should be expedited. NEP 2020 aims at building a global best education system rooted in Indian ethos, thereby transforming India into a global knowledge superpower” (NEP– 2020, p. 5). NEP--2020 states that education must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields. Furthermore, NEP 2020 also emphasizes that pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and, of course, enjoyable. Today, education needs to be more practical and skill-based in order to equip students. Education nowadays is no longer limited to science, commerce and humanities. However, despite many options available there still lies a skill gap that needs to be filled. More than just providing degrees, the present education system must focus on bridging the skills gap that exists between degrees and competencies. To improve the educational experiences of their students, HEIs ought to redesign their current pedagogy. Universities ought to be the centers of innovation, where students learn from books and work to solve actual problems in the classroom.

**Average Retention
Rate**

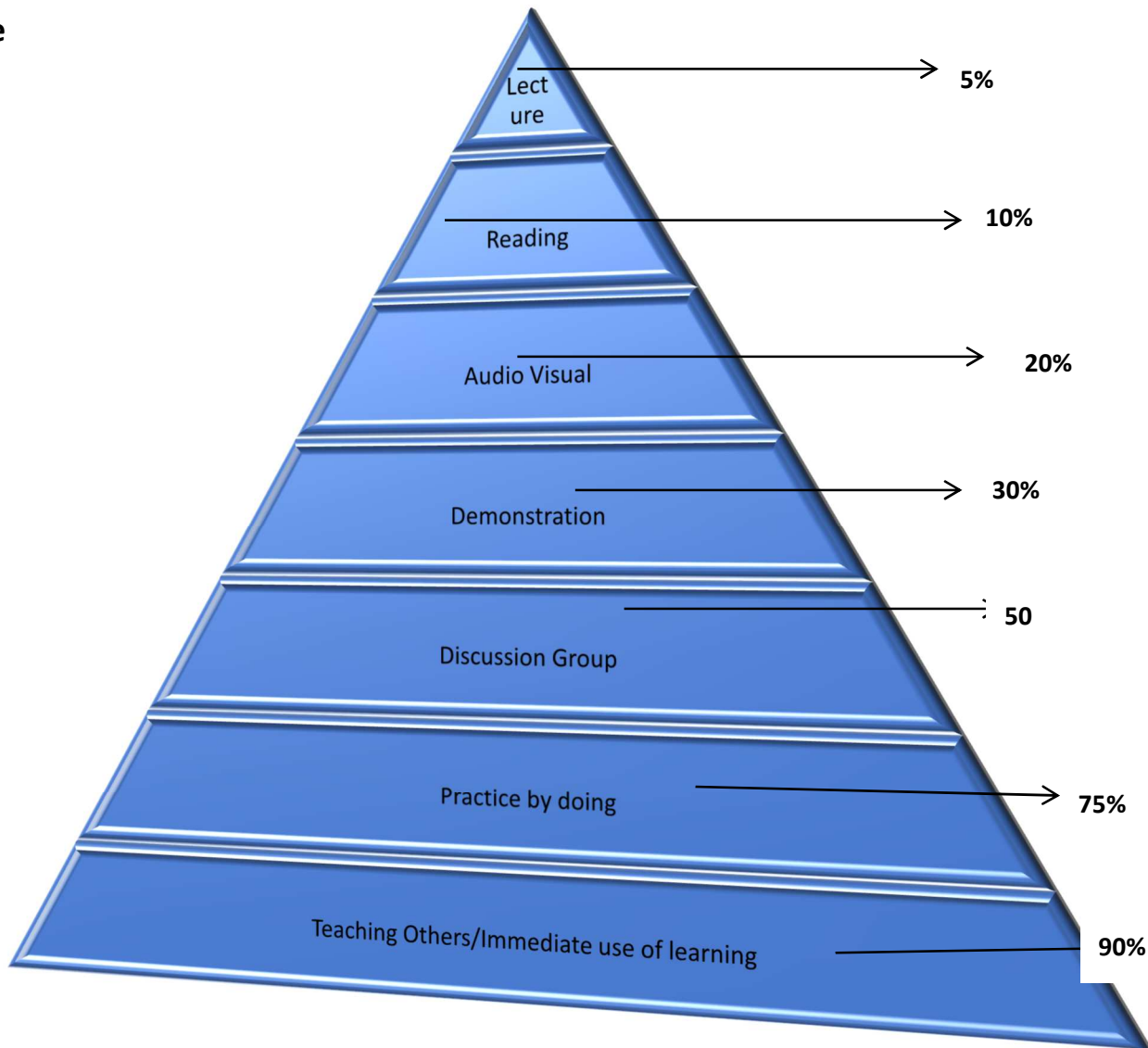


Fig 1 :Learning Pyramid (Source:National Training Laboratories,Bethel,Maine)

21st Century Skills

Creativity: Creativity means the creation or discovery of something new .Creativity is the ability of an individual to create , discover or produce a new idea or object including the re-arrangement or reshaping of what is already known to him. We need future citizens who can analyse the problems from different dimension and in accordance come up with innovative solutions that we may not have considered before.

Critical Thinking: Critical thinking means to make logical decision- making. Critical Thinking provides students with the ability to analyse information as well as problem solving. In the information age, where a lot of information is false, we need to build thinkers who can learn to

question the information they are given to verify its accuracy and accordingly apply the information in the correct context.

Collaboration: It is the capacity or ability of an individual to work together with other people. Collaborative learning has become a powerful pedagogy that transforms traditional solitary learning model into one that embraces collaboration, interaction and knowledge sharing.

Communication: Communication means imparting or interchanging of thoughts. It is the sharing of ideas and feelings in a mood of mutuality. Students should have the ability to communicate their ideas/solutions effectively.

Classification of Innovative Pedagogy

Innovative pedagogy can be classified into four heads as given below:

1. Technology-based pedagogical innovation - Online / digital, Multisensory learning, Open labs etc
2. Methodology-based pedagogical innovation - Flipped classroom, design thinking etc
3. Skill-based pedagogical innovation - Cognitive skills, creativity etc
4. Context-driven pedagogical innovation / real-world-driven pedagogical innovation- Community-based learning, Real-world etc

Various Innovative Online Pedagogies

- MOOCs: Massive open online courses
- FOSS : Free and open System Software
- AR: Augmented Reality
- MR: Mixed Reality
- VR: Virtual Reality
- OERs: Open Education Resources
- NROER: National Repository of Open Education Resources
- SWAYAM: Study Webs of Active – Learning For Young Aspiring Minds
- DIKSHA: Digital Infrastructure for Knowledge Sharing
- E-VIDYA

MOOCs (Massive Open Online Courses) are a type of innovative pedagogy for online education. Since MOOCs emerged in recent years, they are described as the most eminent innovation in higher education due to their ability to change the nature of higher education, especially in the format and pedagogical base. Their innovativeness lies in their ability to foster interactions and social activities which allows for ideas sharing among participants who even get deeply involved in the subject through a wide

variety of synchronous and asynchronous online activities; hence learners can get input from the teacher and reflect on the topic at different times and places. They provide learner independence and peer support through more expressive, reflective, and explanatory activities that strengthen the sense of creativity, ownership, autonomy, and personal direction because supportive technologies are, arguably, well aligned with good pedagogy and participation. With this innovation, the concept of e-Learning has developed beyond textbooks. MOOCs have the ability to attract a large number of diverse learners to an online community due to their shareable format, ability to enroll people with different educational profiles, and affordability which is learners' most benefit.

SWAYAM (Study Webs Of Active Learning For Young Aspiring Minds) is the world's largest online free E- Learning Platform which is responsible for the Online and advanced self- learning initiated by the Government of INDIA .It is a pedagogy of self-learning and it provides opportunities to lifelong learning. There are a number of courses available for learner. It offers a blend of interactive multimedia content, including video lecture, E-content, quizzes, and discussion forums, fostering active and engaging learning experiences.

OER (Open Educational Resource) is digitized materials offered freely and openly for educators, students and self –learners to use and reuse for teaching , learning and research. It is typically made freely and available over the web or Internet.

Virtual Reality (VR) provides the opportunity for learners to access the experiential learning from the three dimensional generated environment . The use of this technology by teachers and students help them to explore the content digitally in a 3D computer visually in an artificial setting.

Various Innovative Pedagogical approach in the 21st Century

All the HEIs of India should plan to implement the following innovative pedagogy in their institutions:

- Experiential Learning
- Digital learning
- Collaborative learning
- Problem –based learning
- Project-based learning
- Peer-led learning

- Inquiry based learning
- Team based learning
- Crossover Teaching
- Blended Learning
- Teaching through smart boards
- Teaching through flipping classrooms
- Teaching through mind maps
- Teaching through virtual reality
- Discussion-based teaching
- Teaching through 3D Printing Technology
- Teaching through Cloud Computing
- Massive Open Online Course (MOOC)
- Artificial Intelligence
- Computation Thinking
- Storytelling
- Authentic learning

The higher education system in India needs to shift its focus from teacher-centric pedagogy to student-centric pedagogy while ensuring the stimulation of higher-order thinking skills and achievement of outcome-based learning subsequently leading them to become lifelong learners so that they can contribute to the socio-economic growth and development of our country. Innovative teaching pedagogy has the potential to transform society into a knowledge society in which the creative and intellectual abilities of students are tapped to their fullest potential. HEIs of the 21st century, while producing knowledgeable and skilled graduates with a good value system, must ensure that they contribute to the social, cultural and economic development of the country at large while moving towards the Viksit Bharat 2047 . Students of the 21st century need to be equipped with skill sets comprising of skills of complex problem-solving, critical thinking, creativity, coordination, people management, negotiation skills, cognitive skills, flexibility, judgment, and decisionmaking skills. Therefore, in the paradigm of new challenges, institutions of higher education need to create appropriate pedagogies and teaching in order to develop these skills to bridge the skill gap between graduates and the industry requirements (Mittal and Pani, 2020). Since the modern higher education system has been purely text-based learning and not at all skill-based, the focus should on learning which can ignite/stimulate thinking. For this HEIs are focusing experiential

learning because this Method accommodates all the pedagogies of learning be it inquiry based learning, multi- disciplinary approach or project based learning.

Conclusion

HEIs in India have not yet completely tapped into the possibilities of all the cutting-edge pedagogies listed in this article. The HEIs might need to set up unique induction and training programs for each of their teachers in order to do this. By 2040, India's education system will undoubtedly be the best in the world if all of the policies outlined in NEP-2020 are put into practice on all of the HEI campuses around the nation. Teachers will have a difficult time getting students involved in group activities to support their successful learning because children now appear more reserved and less willing to participate in group projects. In addition, returning to a social environment can cause anxiety. Still, learning can be perpetuated through the use of relevant, cutting-edge pedagogies. The delivery of education will undoubtedly shift to blended pedagogy, which combines online, digital, and in-person instruction. It will be imperative that faculty members become more tech-savvy and receive some training to bring them up to the necessary level in order to achieve the intended results. Furthermore, it would improve efficacy and efficiency, among many other benefits, for the learning process. The process of educational growth is centered on pedagogical innovation. Innovation in education pushes educators to be proactive in their research, exploration, and use of various techniques in order to generate original concepts or a fresh approach to learning. It also motivates students to do the same. Thus, ongoing innovation is essential for all HEIs. The new curriculum framework for teacher educators is now being developed, and with NEP-2020 in effect, it is essential that pedagogy be structured to provide chances and time for aspiring teachers to reflect, think, and create.

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