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Digital Pedagogy for the Future Indian Classroom

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Abstract: *When the study of instructing via digital technologies is known as digital pedagogy. The rationale for teacher's creation of digital pedagogies is examined in this chapter. It looks at the environment in which we educate as well as how pupils are changing.It arguesthat we should become more adept at using digital technology and outlines the kinds of learning outcomes we can expect. The study investigates how the integration of online and offline teaching methodologies fosters personalised learning experiences, enhances student engagement and supports diverse learning styles. Drawing from empirical studies, case analyses and current educational frameworks, the paper evaluates the effectiveness of blended learning environments across various educational levels and disciplines. Key findings indicate that blended learning offers improved flexibility, increased across to resources and opportunities for collaborative andself-paced learning.*

Keywords: *Digital Pedagogy, Blended Learning, Collaboration, Online Education, Learning Management System (LMS), E-Learning.*

Introduction: Pedagogy is a method of teaching in which teachers teach, both in theory and in practice. Pedagogy is shaped by educator's teaching beliefs and involves their understanding of culture and different learning styles.Itis essential for students to have meaningful classroom relationships in order to build on prior learning.Pedagogy refers to the way of teaching students, whether it is the theory or practice of educating. It is a relationship between the culture and techniques of learning.The main aim of pedagogy is to build on previous learning of the students and work on the development of skills and attitudes of the learners. Pedagogy enables the students to get a thorough understanding of the subject and helps them in applying those learning in their daily lives outside of the classroom.

During an ancient period in Greece, the role of the teacher was first introduced, and teaching was considered an art form.Attending school and getting education was something that only the wealthiest could afford for their kids. The role of the teacher or an educator was considered the most important one in the learning process as they gave invaluable knowledge and wisdom to the children.

Pedagogy in teaching can be referred to as an educator's understanding of how the students learn. The teachers are focused on presenting the syllabus to the students in such a way that it is relevant to their needs.Pedagogy demands classroom interactions between the teacher and students which create a significant impact on the learner's mind. Pedagogy enables teachers to understand the best suitable practices for a classroom setting. It helps them to know how different students learn and grasp information so that they can tailor their lessons to satisfy those needs. It is likely to improve the quality of teaching and the way it is received by the students.Pedagogy plays an important role to help teachers understand the best ways to

conduct a classroom. It gives them insights into how students learn differently in different topics so that they can conduct lessons to suit these needs. It aims to improve the quality of education for students.

Teacher pedagogy refers to the pedagogy that is cantered towards the teacher, who gives the most meaningful course information. In this approach, the teacher has a large responsibility of giving correct information to the students in the right way, irrespective of their teaching styles. The teacher can give a clear understanding of how the students are doing concerning their learning and also be an effective model for the target language.

In constructive approach, the students are allowed to be present in the process of understanding and gaining knowledge rather than just passively receiving information. This encourages critical thinking among the students and gives a learning environment in which they can connect with what they are hearing.

In collaborative approach, the students form groups of learners that learn together and work to solve a problem, build strategies, ideas, create products or complete a task. This is a joint intellectual effort by the students among themselves or with the help of the teachers.

In Integrative approach, the students are given a learning environment that helps them in connecting with their learning across the syllabus. The four objectives of integration include-Understanding the process of learning, Differentiating issues by relevance, making use of the lessons, in practical scenarios, associating the concepts in regular lives.

In Reflective approach, the students are expected to evaluate themselves. It means observing the activities of the teachers and other students in the classroom and analysing why they do it and how it works.

In the inquiry-based learning method, the educators are expected to not just answer the queries of the students, but also build a culture where their ideas are explored, challenged, improved, and refined. It aims to take the students from the position of wondering about a question to understanding the answer and then questioning it further.

Role of Pedagogy in Effective learning:

1. It enhances student participation in learning and makes them more receptive to what is being taught.
2. The main focus is given on the outcomes of courses and the students are free to learn in their styles.
3. It encourages the students with special needs to be a part of the mainstream teaching ways and engage with other students.
4. The student studies a particular subject with a clear objective of outcomes such as gaining skills and knowledge of the subject.

“We define digital pedagogy as the study of how digital technologies can be used to best effect in teaching and learning” the definition of digital pedagogy requires a good knowledge of the technological possibilities translated into concrete educational situations – the experience of the last years shows that only certain aspects of the use of digital technologies in education have authentic value and can add new pedagogical meanings.In essence, digital pedagogy deals with education–principles and legalities, characteristics, limits – and the specificity of the field is given by the distinctive note that the digital component adds to learning, teaching methods, assessment of learning, learning content, learning conditions, as well as the extent to which it contributes to their efficiency. Digital Pedagogy is not only about using digital technologies for teaching and learning but rather approaching digital tools from a critical pedagogical perspective. So, it is as much about using digital tools thoughtfully as it is about deciding when not to use digital tools, and about paying attention to the impact of digital tools on learning.Digital pedagogy looks critically at digital tools as

potential means for learning and teaching. It considers digital content and space as valuable sites for information and knowledge, in addition to traditional mediums such as books or the classroom. These multimodal forms of learning allow the user to have more freedom in terms of creating meaning making activities. Digital pedagogy itself is also sensitive to the ongoing discussions and debates happening within the sphere of digital humanities, namely to its practices, principles and politics.

Blended learning or hybrid learning, also known as technology-mediated instruction, web-enhanced instruction, or mixed-mode instruction, is an approach to education that combines online educational materials and opportunities for interaction online with physical place-based classroom methods. Blended learning requires the physical presence of both teacher and student, with some elements of student control over time, place, path, or pace.While students still attend schools with a teacher present, face-to-face classroom practices are combined with regarding content and delivery. It is also used in professional development and training settings. Since blended learning is highly context-dependent, a universal conception of it is difficult.Some reports have claimed that a lack of consensus on a hard definition of blended learning has led to difficulties in research on its effectiveness. A well-cited 2013 study broadly defined blended learning as a mixture of online and in-person delivery where the online portion effectively replaces some of the face-to-face contact time rather than supplementing it.Additionally, a 2015 meta-analysis that historically looked back at a comprehensive review of evidence-based research studies around blended learning, found commonalities in defining that blended learning was "considered a combination of physical [face to face] modes of instruction with online modes of learning, drawing on technology-mediated instruction, where all participants in the learning process are separated by distance some of the time. "This report also found that all of these evidence-based studies concluded that student achievement was higher in blended learning experiences when compared to either fully online or fully face-to-face learning experiences. Whereas, "Hybrid learning is an educational model where some students attend class in-person, while others join the class virtually from home." Many Universities turned to remote learning and hybrid formats returning from the pandemic.

Collaboration (from Latin com- "with" + laborare "to labour", "to work") is the process of two or more people, entities or organizations working together to complete a task or achieve a goal. A definition that takes technology into account is "working together to create value while sharing virtual or physical space." Collaboration is similar to cooperation. The form of leadership can be social within a decentralized and egalitarian group. Teams that work collaboratively often access greater resources, recognition and rewards when facing competition for finite resources. Structured methods of collaboration encourage introspection of behaviour and communication.Such methods aim to increase the success of teams as they engage in collaborative problem-solving. Collaboration is present in opposing goals exhibiting the notion of adversarial collaboration, though this is not a common use of the term. In its applied sense, "[a] collaboration is a purposeful relationship in which all parties strategically choose to cooperate in order to accomplish a shared outcome". Trade between nations is a form of collaboration between two societies which produce and exchange different portfolios of goods.

Online education, also called e-learning, remote learning, or distance learning, is offered online instead of in person. You study material via online video conference lectures and workshops or recorded videos and submit your work electronically. Online education is usually flexible. It allows you to study modules on time and receive credit when you complete them without traveling to a physical destination. Many course providers have taken advantage of the benefits of online education, with top universities offering online degrees, national industry bodies and technical companies offering certifications, and companies and organisations offering a range of no accredited courses. You can access online learning whether you are a school leaver, a working professional, or someone who wants to learn for fun. Online education may appeal to you if you have commitments that stop you from accessing education in person, prefer the flexibility an online course offers, are looking to save money or want access to courses that are not local. Online remote

learning offers several advantages over a traditional in-person course. These are largely based on an online course's flexibility and advantages. Let's take a look at some of the pros of online education.

The Government of India launched the ground-breaking Learning Management System (LMS) in e-Governance initiative as part of the Digital India Programme in 2015 with the goal of using IT as a growth engine to convert India into a knowledge economy and digitally empowered society. A software program called a learningmanagement system (LMS) is used to administer, record, track, report and provide training programs and electronic courses, or e-learning. As a tool for increasing capacity, LMS makes it easier to manage training and e-learning for a range of government employees at the federal, state, and union territory levels. Its goal is to improve user's knowledge and abilities in accordance with the roles that the e-Governance Competency Framework envisions for them. A learning management system (LMS) is a software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, materials or learning and development programs.[1] The learning management system concept emerged directly from e-Learning. Learning management systems make up the largest segment of the learning system market. The first introduction of the LMS was in the late 1990s.LMSs have been adopted by almost all higher education institutions in the English-speaking world. Learning management systems have experienced a massive growth in usage because of the emphasis on remote learning during the COVID-19 pandemic. Learning management systems were designed to identify training and learning gaps, using analytical data and reporting. LMSs are focused on online learning delivery but support a range of uses, acting as a platform for online content, including courses, both asynchronous based and synchronous based. In the higher education space, an LMS may offer classroom management for instructor-led training or a flipped classroom. Modern LMSs include intelligent algorithms to make automated recommendations for courses based on a user's skill profile as well as extract metadata from learning materials to make such recommendations even more accurate.

E-learning -- also called *electronic learning* or *web-based training* -- is anywhere, anytime instruction delivered over the internet or a corporate intranet to students and other learners via a browser. Contrary to traditional learning methods, e-learning lets students, employees in training and casual learners participate in an organized learning experience regardless of their physical location.In its formative years, e-learning tools primarily enabled the delivery of learning material directly from a teacher to a learner. Now, the e-learning experience has evolved to enable more multidirectional communication using increasingly interactive tools. Learners have greater freedom in choosing how they receive and respond to e-learning content, and any number of peers can be involved.

Findings: National Education Policy 2020 emphasizes the use and integration of technology to improve multiple aspects of education. The Digital India Campaign is helping to transform the entire nation into a digitally empowered society and knowledge economy. While education plays a critical role in this transformation, technology itself plays an important role in the improvement of educational processes and outcomes. In the explosive pace of technological development allied with the sheer creativity of tech savvy teachers, it is certain that technology will impact education in multiple ways. Therefore, a vibrant ecosystem has to be encouraged to create solutions that not only solve India's challenges of scale, diversity, equity, but also evolve in keeping with the rapid changes in technology.The knowledge of digital pedagogy will enable learners to be equipped with the four dimensions of digital pedagogy competence that are aligned with the international standards of digital competencies for educators. Each of these dimensions include multiple skills and knowledge components. They will facilitate learners to gather resources to support teaching and learning, navigate responsibly on the web, design experiences for impactful learning and empower learners with the new age pedagogy and assessments. With the vision of enhancing professional skills of the teacher, CIET-NCERT in collaboration with UNESCO-MGIEP, is organizing a five-day online training on "Digital Pedagogy" to leverage the understanding of teachers, students, teacher educators, administrators, and various

stakeholders to integrate digital pedagogical practices in the teaching-learning process in order to enrich classroom experiences. The training is built upon four themes that represent the different dimensions of a teacher's digital pedagogy competence. Together, they enable teachers to meaningfully integrate technology in their professional practice and create inclusive and impactful learning experiences. The rapid digitalization of higher education has significantly reshaped teaching and learning practices worldwide; however, the adoption of digital pedagogy among university teachers remains uneven, particularly in developing contexts such as India. This study examines the lived experiences of Indian university teachers in adopting digital pedagogy and explores the factors influencing this process within higher education institutions. Using a qualitative research design, the study employs Interpretative Phenomenological Analysis to develop an in depth understanding of how teachers perceive, experience, and make sense of digitally mediated teaching practices. Data were collected through semi structured interviews with university teachers representing diverse disciplinary backgrounds and institutional settings. The analysis followed a systematic and iterative IPA approach to identify emergent themes grounded in participants' narratives. The findings indicate that digital pedagogy adoption is shaped by a dynamic interplay of institutional, technological, and personal factors. Institutional support structures, availability of digital infrastructure, access to professional development opportunities, and collaborative peer environments emerged as key enablers of adoption. In contrast, challenges such as inadequate training, inconsistent technical support, increased workload, infrastructural disparities between institutions, and varying levels of digital confidence among teachers were identified as persistent barriers. The study further highlights the central role of teachers' beliefs, attitudes, and perceived pedagogical value of digital tools in determining the depth and sustainability of digital pedagogy integration. By foregrounding faculty perspectives, this research contributes to the limited qualitative literature on digital pedagogy adoption in Indian higher education and extends existing scholarship beyond technology acceptance oriented explanations. The study supports e learning practice by offering context specific recommendations related to faculty training, institutional policy, and digital readiness. By emphasizing teachers' lived experiences, the findings advance understanding of digital pedagogy as a socially situated and contextually embedded practice, providing a foundation for inclusive and sustainable digital transformation in higher education. The insights generated offer important implications for higher education leaders and policymakers seeking to strengthen digital capacity and enhance teaching quality in evolving educational environments.

Discussion: In India Attaining foundational literacy and all children ability to read, write and perform with numbers, Mathematics and computational thinking is to be, Exposure to different languages in this stage with, Child explores and learns on his own and numeracy for basic operations, Child explores and learns on his own-activities both indoor and outdoor play, puzzles, logical thinking, problem-solving, drawing, painting, etc. Given increased emphasis with major focus on mother tongue. Anganwadis (3-5years) will be strengthened in terms of pedagogical strategies like activity filled tours. In (8-11years) Taking forward interactive pedagogical style of the Foundational Stage- learning opportunities to be built on the play, discovery, and activity-based. Incorporating light text materials-aspects of more formal, Implementation Students three demonstrate languages, Bilingual teaching providing with pedagogical learning play, aspects Implementation of three language formula Students may change one of more of the three languages in grade 6 or 7, demonstrate basic proficiency in three languages at the end of secondary stage. Bilingual approach-including bilingual teaching-learning materials-across subjects Providing opportunities to use language, To support Experiential learning- content concepts, ideas, applications, and problem content in all subjects need to focus on the key problem-solving. Pedagogical Implications -More interactive teaching–learning, promote exploratory activities, discussions, questioning, To make classrooms interactions enjoyable, creative, collaborative for deeper understanding and more experiential learning. In (11-14years)Promoting learning and discussion of more abstract concepts across the sciences, mathematics, arts, social sciences, and humanities Integrated ,cross curricular approach Integrated, cross curricular approach Participation in project

on the 'The Languages of India' under the 'Ek Bharat Shrestha Bharat' initiative Facilitate learning about the major Indian Languages. Develop unity and understanding of cultural heritage and diversity of India Project is to be done as a joyful activity Developing vocational sensitivities in students Every student take a fun course, during Grades 6 that gives hands-on experience on important vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making, etc. As decided by States and local communities and mapped by local skilling needs. Coding activities will be introduced through activities inbuilt in the mandated content using integrated approach. The value building too will be the focused with students being taught at a young age the importance of "doing what's right" Logical framework for making ethical decisions Pedagogy –Building on Fables and Stories Learners need to be given opportunity to read and from the Panchatantra, Jataka, Hitopadesh, and inspiring tales from the Indian tradition Excerpts from the Indian Constitution will also considered essential reading for all students Health and curriculum Basic training health, disaster, Scientific effects and learn other also be social sensitivity nurtured by integrating in curriculum training in health, including preventive health, mental health, good nutrition, personal and public hygiene, disaster response and first-aid Scientific explanations of the detrimental and damaging effects of alcohol, tobacco, and other drugs. In (14-18 years) is marked by four years of multidisciplinary study. The focus need to be on key concepts, ideas, applications, and problem-solving. Build on pedagogical and curricular style of the Middle Stage- greater depth, greater critical thinking, thinking, greater attention to life aspirations, aspirations, and greater flexibility and student choice of subjects. Option of exiting after Grade 10 and re-entering in the next phase to pursue vocational or any other courses available in Grades 11-12 Teaching and learning will be conducted in a more interactive manner encouraging questions with fun, creative, collaborative, and exploratory activities 10-day bag less period All students will participate to avail internship opportunities to learn vocational subjects throughout Grades 6-12 – online Pedagogy for active participation, Arts-integrated and sports-integrated education, telling-based pedagogy. Classroom transactions will shift towards competency based learning with assessment tools aligned Engaging learners with enjoyable and inspirational for students at all levels, high-quality translation (technology assisted as needed) in all local and languages. Learners will be encouraged to participated in the based Clubs- Science Circles, Math Circles, Music Performance Circles, Chess Circles, Poetry Circles, Circles, Drama Circles, Debate Circles, Sports Circles, Clubs, Health & Well-being Clubs/ Yoga Clubs, programs, Olympiads, Competitions in schools topics and subjects knowledge and indigenous and traditional learning across-mathematics, astronomy, philosophy, yoga, architecture, medicine, agriculture, engineering, literature, sports, …..Pedagogy for active participation education, story-competency-inspirational books translation and Indian the Project-Music& Dance Language Circles, Eco- Visit different states as part of Circles, Eco-Summer subjects (tribal ways of philosophy, engineering, Visit different states as part of cultural exchange programmes. Video documentaries on inspirational luminaries of India, ancient and modern, in the school curriculum.

Conclusion: NEP 2020 compliance Empowers teachers to employ learning strategies and activities like storytelling, discussion, and video usage, and avoid learning strategies that promote and reinforce rote memorization.Experiential learning in science – Students read and learn about the process of plant growth, and then grow and observe the changes themselves.Works in physically big classes – Helps every student to be seen, and to be given an appropriate level of challenge, regardless of the number of students in the class.Combines old and new – Uses low -cost materials to make learning experiences innovative and relevant.Emphasizes the skills of the future – Prioritizes the development of higher-order cognitive skills, and the focus on creative and critical problem-solving skills over rote memorization. Living history: Role play what the freedom fighters went through to understand their struggles. Math as Adventure: Children treat equations as quests to be completed with rewards. Group Storytelling: Collaborative storytelling teaches languages and enhances imagination.Art in Science: Classroom experiments paired with drawing and discussion of patterns. A confidence-building exercise for future teachers.

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