PEDAGOGY INITIATIVE IN INNOVATIVE TEACHING LEARNING PROCESS

Pradyumna Mulchand Bora, Assistant Professor, Department of Mechanical Engineering,
SNJBs LSKBJ, College of Engineering, Chandwad, Nashik, India
Neha Pradyumna Bora , Assistant Professor, Department of Computer Engineering,
SNJBs LSKBJ, College of Engineering, Chandwad, Nashik, India
Deepali Prashant Pawar, Assistant Professor, Department of Computer Engineering,
SNJBs LSKBJ, College of Engineering, Chandwad, Nashik, India

Abstract
Pedagogy is a phrase that is often used in the teaching and learning process these days. The goal of this research paper is to sketch the idea of pedagogy and the function of the teacher in the process of teaching and learning. Teachers should design curriculum in pedagogy that incorporate the cultural resources that students bring to the classroom. The field of study that addresses both the philosophy and practice of teaching is called pedagogy. Pedagogy considers theories of learning, understandings of students and their needs, and the backgrounds and interests of individual students to inform teaching tactics, teacher actions, and teacher judgments and decisions. The goal of pedagogy is to enable educators and learners to work together to raise the standard of instruction in the classroom. As technology advances, so do we. We are implementing gamification strategies and the new digital generation framework to influence learners' actions and boost user engagement and motivation. The ideas, values, and interests that guide a teacher's work and the cultural politics they advance in the classroom must be accessible to be critically analyzed. To the extent that schools are actively involved in the development of discourses that give others a feeling of identity, community, and possibility, all of their acts imply an idea of what it is to be a citizen and a future society. Teachers need to take responsibility for their acts and think back on them.

Introduction
Students nowadays don't just watch; they participate in the learning process. In their eyes, they are part of the process of generating knowledge and original concepts. Three educational principles: personalization, participation, and productivity thus form the foundation of instruction in the twenty-first century. With the help of this framework, students may complete projects from start to finish, learn in real-world scenarios, and work through issues as they come to pass, all of which are effective learning methods. Establishing professional connections with educators and community partners, as well as cooperating with colleagues, will also enable learners globally to have successful educational experiences. Pedagogy is the critical education of individuals to be self-reflective and able to critically confront their relationships with others and the wider world. It is not training. In this view, education not only imparts critical and intellectual skills but also empowers individuals to critically engage with their environment. One must study instructional design and pedagogy in order to become a successful teacher. Gaining control over classroom operations and instruction can enable teachers to lead classes that maximize each student's learning potential. Before starting a classroom, professionals who want to work with students of all ages typically need to finish a course in pedagogy and instructional design.

Objective:
1. Being aware of the science of teaching, or pedagogy, in a classroom setting
2. To comprehend the process of teaching and learning within the confines of the classroom.
3. To comprehend an efficient instructional plan

The idea of pedagogy and the teacher's role in the teaching and learning process have an impact on how educational programs are developed, put into practice, and evaluated. The nature of the investigation was qualitative. Reputable periodicals, books, reports, and library materials were the sources that were used to get the information. Following review of these materials, a thorough presentation has been created based on the goals.

Science of Pedagogy:
At this point, the science of teaching pedagogy has a great deal of significance in achieving the three primary goals mentioned above. Let's give a quick overview of it. In a given class, a teacher has learning experiences and relevant content material in front of him. In this sense, the degree to which he is successful in realizing the teaching instructional objectives determines the success of his teaching assignment. He can only carry out his teaching duties effectively if he uses the right tools, methods, strategies, and resources to help his pupils benefit from what he has taught them.

How well is he carrying out his teaching duties and how is he attempting to meet the established learning objectives? These questions now require the assistance of an ongoing testing and measuring system called teaching outcomes evaluations. The outcomes of these assessments give the teacher the necessary feedback to make the desired changes to his teaching strategies and resources, including supporting the need to change the way that instruction objectives are set. Thus, in order to achieve the best outcomes possible in the teaching task—effective teaching—the science of teaching, or pedagogy, supports a complete mutual link and interdependence among the following four pillars of the teaching-learning process.

Literature
Constructivist Pedagogy in Action:
Piaget, J. (1973). To Understand Is to Invent: The Future of Education. New York: Grossman Publishers.
Brooks, J. G., & Brooks, M. G. (1993). In Search of Understanding: The Case for Constructivist Classrooms. Alexandria, VA: Association for Supervision and Curriculum Development.
These seminal works delve into the foundations of constructivist pedagogy, exploring the importance of active engagement, collaboration, and problem-solving in the learning process.
Flipped Classroom Models:
Bergmann, J., & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day. International Society for Technology in Education.
Tucker, B. (2012). The Flipped Classroom. Education Next, 12(1), 82–83.
The concept of flipped classrooms, where traditional lecture and homework elements are reversed, is investigated in these papers, shedding light on the impacts and challenges of this innovative pedagogical model.
Gamification and Learning:
Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness: Creating Interactive Entertainment and Play. Proceedings of the 15th International Academic MindTrek Conference.
Examining the intersection of game design elements and pedagogy, this paper explores the potential of gamification in enhancing student motivation and engagement.
Technology Integration in Education:
Puentedura, R. R. (2006). Transformation, Technology, and Education. AACTE Committee on Innovation and Technology (Ed.), Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 2–29). Routledge.
Puentedura's SAMR model is discussed in this paper, offering insights into the effective integration of technology in education and its impact on pedagogical practices.

Teacher Professional Development:

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad. National Staff Development Council (NSDC).

Examining the current landscape of teacher professional development, this paper assesses the effectiveness of different strategies in preparing educators for implementing innovative pedagogical approaches.

Assessment Strategies in Innovative Pedagogy:

Wiggins, G. (1998). Educative Assessment: Designing Assessments to Inform and Improve Student Performance. Jossey-Bass.

Wiggins' work explores the concept of educational assessment, emphasizing the role of assessment in guiding and improving the learning process rather than merely evaluating outcomes.

Challenges and Opportunities of Pedagogy Initiatives:

Fullan, M., & Langworthy, M. (2013). Towards a New End: New Pedagogies for Deep Learning. Pearson.

Fullan and Langworthy examine the challenges and opportunities associated with pedagogy initiatives and propose a framework for deep learning, emphasizing a shift towards more effective and student-centered approaches.

Methodology and Different Tools Used in Pedagogy

The art and science of teaching, or pedagogy, is crucial in determining how pupils learn. A greater focus is being placed on creative teaching-learning methods in the quickly changing educational environment in order to improve student engagement, critical thinking, and overall academic results. The purpose of this literature review is to examine and summarize academic works and research that have already been done on pedagogy efforts in cutting-edge teaching-learning processes.

Pedagogy in teaching learning process can be successful in this dimensions of teaching

1. **Constructive**
2. **Collaborative**
3. **Integrative**
4. **Reflective**
5. **Inquiry**

Constructive

Roleplay presentation: Students actively engage in constructing and delivering a presentation, utilizing creativity and communication skills.

Crossword puzzle: Students construct the puzzle by integrating vocabulary or subject-related terms, reinforcing their understanding.

Memory game: Students construct and match pairs of cards, actively recalling information and enhancing memory.

Collaborative

Thinkshare pair: Students collaborate in pairs to discuss and share their thoughts, fostering active participation and idea exchange.

Gaming: Students participate in educational games together, promoting teamwork and cooperation.

Simulation: Students collaborate to simulate real-world scenarios, working together to solve complex problems or challenges.

Integrative

Outside classroom: Students engage in learning experiences outside the traditional classroom setting, integrating real-world contexts and experiences.

Simulation (repeated from collaborative): Students integrate various concepts and skills in a simulated environment to deepen their understanding.

Reflective
Self-learning: Students engage in self-directed learning, reflecting on their progress and adjusting their approach to grasp new concepts.
Quiz: Students take quizzes to assess their knowledge, reflecting on their understanding of the subject matter.
Inquiry
Teaching learning outside the classroom: Students actively inquire and explore new knowledge and experiences beyond the classroom environment.
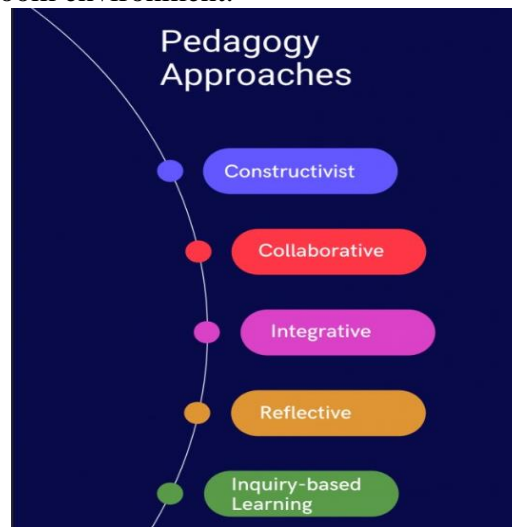

Fig 1: Pedagogy approaches

Tools Used Innovative Teaching
ICT supported learning
1. Blog Developed and Designed by Faculties
2. Youtube Channel of Faculties
3. Google Classroom
4. EdPuzzle
5. Virtual Labs
6. MOOC Platform:- NPTEL/Coursera/Udemy etc
7. Animated Presentation
8. Videos from NPTEL
9. Simulators

Interactive class rooms
1. Discussion
2. Brainstorming
3. Activity based learning
4. (Game, Poster Making, Fill in the Blank, Role Play)
5. Quizzes/Puzzles
6. Think- Share-Share

Self / Collaborative learning
1. Flipped Classroom
2. Presentations given by students
3. Group assignments
4. Case Studies
5. Mini Project

Real life examples
Modern LMS with Gamification
These contemporary gamified learning management systems include standard components for tracking

accomplishments and encouraging users. These gamified learning management systems (LMS) provide activities, reward points, and badges to acknowledge student achievement.

Red Critter Teacher:

Educationists can use the Recognition LMS platform to maintain student records and provide daily activity programs to learners wherever they choose to learn. Maintain track of the records by awarding badges and points, encouraging teamwork, and actively taking part in activities to advance skills.

Khan Academy:

This is an educational organization that offers free gamified lessons to students along with free extra practice exercises and resources for teachers that are specifically tailored to physics, economics, arithmetic, computers, the arts and humanities, and exam preparation. By addressing gaps in each learner's comprehension level and meeting their needs, the gamified environment personalized learning.

Coursera :

It is an open-source, global learning management system (LMS) that offers cheap, career-focused diplomas and degrees from highly reputable colleges to individuals based on their ranks and scores through gamification tactics. In order to succeed in interviews at reputable businesses and organizations, this program also offers personality development and motivational sessions.

Udemy:

It is the largest online marketplace in the world, with over 57 million students, 13,000 courses, and 50,000 teachers. The teachers are given extra credit on this platform throughout the session, which encourages them to teach more effectively and earn more points. A higher rating of goodwill is conferred by having more credits. The same is true for students; strong assignment scores grant them points that can be redeemed for valuable incentives and positions.

Solo Learn:

This site improves your technical proficiency, particularly in coding. Learning programming languages such as Python, Java, and C++ can be somewhat challenging for an average person who is not familiar with computers. platform functions on actual practice sessions, increasing system understanding and trustworthiness in real time. Over 50,00,000 artists and community members are enjoying the enjoyment of the gamified coding method.

Kahoot:

Kahoot! is a game-based learning platform that makes it easy to create, share and play learning games or trivia quizzes in minutes. Unleash the fun in classrooms, offices and living rooms!

Fig 2: Teaching Learning Process

Effective teaching is when students successfully meet the learning objectives that the teacher has established. That which leads to the most successful learning is the most effective instruction. Furthermore, learning is a process rather than a final product; it entails all of the experiences and training that come from a person's instruction, which aids in altering behavior and getting ready to

make the necessary adjustments and adaptations in changing circumstances. Effective teaching fundamentally consists of two basic components.

Conclusion

Technology can help with efforts to change pedagogy, but it's important to understand that 21st-century learning experiences need to include more than just technology. The researcher highlights here that 21st-century learning methodologies will involve more than just classroom instruction. learning through peers, intergenerational partnerships and community links. Learning can occur outside of the classroom in a variety of settings, such as libraries, museums, community centers, surrounding farms, and local companies. As a result, the notion that education can only be obtained in schools needs to be drastically changed. Thinking broadly about education in the twenty-first century recognizes the need to improve learning quality by including new "forms and functions" of learning in global education goals. Using sound judgment, facing tough decisions, and respecting the complexity of the educational goal are all necessary for effective teaching. Teachers need to be cognizant of the ethical aspects of their work in addition to the technical knowledge and abilities they employ on a regular basis. Taking this into consideration, the main goal is to support the growth of abilities, attitudes, and knowledge while carefully and ethically recognizing the many requirements and circumstances of humankind.

In order to effectively educate, educators need to be proficient in a variety of techniques and approaches while also continuing to evaluate and think critically about what they do. In an ongoing effort to enhance the educational experience, teachers have the responsibility of questioning established structures, methods, and knowledge definitions; devising and experimenting with novel ways; and, if required, advocating for organizational reform. The ability to create curricula that build on students' current knowledge and understanding and advance them to more complex and in-depth abilities, knowledge, concepts, and performances is an indication of effective teaching through pedagogy. Furthermore, pedagogy aids in the development of a number of materials and instructional methodologies to fit the spectrum of student competencies and to give each student multiple avenues for examining key concepts, abilities, and ideas. A teacher is created by their pedagogy, which teaches them how to function as coaches, advocates, managers, facilitators, and models.

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