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INNOVATIVE PEDAGOGICAL APPROACHES

***Annotation.** The determination of pedagogical innovation, regardless of its inclusion of technology, is contingent upon a multifaceted interaction between the innovation itself and other contextual factors. These factors encompass education policy, leadership, cultural norms and values, teacher attitudes and skills, as well as student characteristics. Any theoretical or academic subject may be taught via pedagogy. Teaching pedagogy helps teachers understand how to enhance learning. Academic institutions should prioritize pedagogy to improve teacher abilities. Effective pedagogy facilitates an in-depth comprehension of foundational material for both students and instructors, thereby enhancing the quality of instruction and learning. Innovation entails adopting a distinct perspective while approaching challenges and devising solutions for them. Furthermore, it is worth noting that this also serves to enhance the overall quality of education as it stimulates students to engage in critical thinking and problem-solving, hence fostering the development of innovative solutions to intricate issues. The aim of the article is to examine the optimal strategies employed by educators working in technologically demanding settings to effectively integrate novel teaching methods, with the aim of enhancing student engagement and promoting meaningful learning experiences.*

Key words: *innovative pedagogy, teaching method, assessment*

***Анотація.** Визначення педагогічної інновації, незалежно від включення в неї технології, залежить від багатогранної взаємодії між самою інновацією та іншими контекстуальними факторами. Ці фактори охоплюють освітню політику, лідерство, культурні норми та цінності, ставлення та навички вчителя, а також характеристики учнів. Будь-який теоретичний або академічний предмет можна викладати через педагогіку. Викладання педагогіки допомагає вчителям зрозуміти, як покращити навчання. Академічні установи повинні віддавати пріоритет педагогіці для вдосконалення здібностей учителя. Ефективна педагогіка сприяє поглибленому розумінню основного матеріалу як студентами, так і викладачами, тим самим підвищується якість викладання та навчання. Інновації передбачають прийняття чіткої точки зору під час підходу до викликів і пошуку рішень для них. Крім того, варто зазначити, що це також сприяє підвищенню загальної якості освіти, оскільки стимулює студентів до критичного мислення та вирішення проблем, отже сприяючи розробці інноваційних рішень складних питань. Мета статті полягає в тому, щоб вивчити оптимальні стратегії, які використовують викладачі, які працюють у технологічно складних умовах, для ефективної інтеграції нових методів навчання з метою підвищення залучення студентів і сприяння вагомому досвіду навчання.*

***Ключові слова:** інноваційна педагогіка, методика навчання, оцінювання.*

Introduction. Pedagogy is a critical factor in the development of efficacious learning methodologies and approaches. The Greek term «pedagogue» means «the art of teaching children». This approach and practice of teaching involves theory, instructional methods, feedback, and assessment. Teacher lectures include practice sessions and engaging techniques to convey theoretical concepts and content to improve learning. Effective pedagogy facilitates an in-depth comprehension of foundational material for both students and instructors, thereby enhancing the quality of instruction and learning. Innovation entails adopting a distinct perspective while approaching challenges and devising solutions for them. Furthermore, it is worth

noting that this also serves to enhance the overall quality of education as it stimulates students to engage in critical thinking and problem-solving, hence fostering the development of innovative solutions to intricate issues. India's progress in the field of invention is praiseworthy, as evidenced by its ranking of 40th among 132 nations in the WIPO. Pedagogical methods [1] may be classified into distinct categories depending on their underlying philosophies, eg: social constructivism and behaviourism. The behaviourism method believes that learning is centred on the instructor. This strategy primarily posits that the teacher assumes complete power in managing a classroom presentation. The methodology being referred to is the conventional method of teaching style, as expounded upon by renowned scholars like as Thorndike in 1911, Pavlov in 1927, and Skinner in 1957 [2]. The dissemination of knowledge should occur through a structured curriculum that encompasses the teaching of individual subjects, as opposed to a learning approach centred around specific topics. Meeting the different needs of each student is the biggest challenge in education, so teaching must be seen as a problem-solving activity based on the educator's professionalism.

The aim of the article is to present the strategies employed by educators working in technologically demanding settings to effectively integrate novel teaching methods, with the aim of enhancing student engagement and promoting meaningful learning experiences.

Strategies to connect to students in a class room with limited technology access. According to the Constructivism method, Piaget's education posits that individuals acquire knowledge via their experiences and subsequent reflections. The method to learning discussed is centred around the child and is sometimes referred to as «invisible pedagogy». This approach encompasses project-based learning, inquiry-based learning, as well as educational techniques such as Montessori or Steiner. Constructivism is a theoretical framework that examines the involvement of instructors in designing educational activities that promote learning, encompassing physical education as well as more advanced forms of cognitive learning for older

students. Moreover, this technique additionally addresses the implementation of an instructional session in outdoor settings and fostering an interaction with the natural environment to foster an atmosphere that diverges from the confines of traditional classroom spaces.

The method of social constructivism was put forward by Lev Vygotsky combines elements of teacher-guided instruction with student-centered pedagogy. An efficacious pedagogical approach involves a reciprocal exchange of knowledge and understanding, wherein students and teachers engage in interactive discourse and that educators ought to engage pupils in many forms of contact, procedures, models, and questioning. If behaviorism is teacher centred approach to learning and constructivism is student centred approach learning, there is also a technology approach to learning both high technology and low technology approach towards learning.

Innovation entails adopting a distinct perspective while approaching challenges and devising solutions for them. Furthermore, it is worth noting that this also serves to enhance the overall quality of education as it stimulates students to engage in critical thinking and problem-solving, hence fostering the development of innovative solutions to intricate issues. India's progress in the field of invention is praiseworthy, as evidenced by its ranking of 40th among 132 nations in the Global invention Index Report 2023, published by the World Intellectual Property Organisation (WIPO) [1].

In order to cultivate innovation in children, it is essential to provide them with an environment that fosters the development of inventive thinking as an inherent quality. For learners to effectively navigate the forthcoming obstacles within the inflexible classroom environments, teachers must be well prepared. When embarking on a novel and unexplored trajectory, individuals must confront their apprehensions, embrace uncertainty, and be prepared to encounter setbacks. Nevertheless, if educators employ unconventional approaches, there exist several strategies by which they might progressively endeavour to include innovation within the limitations of educational setting. In this article few best practices of innovative low technology-

based student centric learning approaches in higher education are highlighted. The **successful best pedagogical approaches are organised** according to four processes – Establishing connections to prior knowledge, aligning with learning outcome, task based active student engagement and Redesigning Assessment methods to foster reflection

Step 1: Establishing Connections with Students' Prior Knowledge.

Teachers have successfully used strategies such as brainstorming, KWL charts, anticipation guides and concept maps in order to understand and connect with students’ prior knowledge. Previous knowledge is a learner's knowledge and comprehension before learning new material. Pre-existing information and educational foundation precede fresh instructional content. Prior knowledge is essential for learning new things. Prior knowledge helps identify links between past learning and present training. This technique builds on prior knowledge to help students understand new content. It also lets teachers collect formative assessment data to adapt lessons.

Many visual organisational methods help pupils absorb material. It gives the lecture or class structure and helps student’s link old and new information. The **simple visual organiser KWL Chart** activates past information, sets learning goals, and reflects on new knowledge. KWL means «What I Know», «What I Want to Know», and «What I Learned». The individual KWL charts help students to relate to new and old material. It fosters curiosity and guided learning (Table 1) [3].

Table 1

KWL Chart

What I Know (K)	Students list what they already know about a particular topic before instruction begins
What I Want to Know (W)	Students identify questions and areas of interest related to the topic that they hope to learn more about.
What I Learnt (L)	After the lesson or learning experience, students record what they have learned or discovered

Another popular method is the **use of Anticipation guides** in language and social sciences classroom where a series of statements or questions are presented to students before reading a certain book. These statements have been developed to elicit critical thinking and foster active discourse. Educators provide a compilation of declarative statements or interrogative prompts pertaining to the next subject matter. Students are required to provide their response to each statement or question, expressing their agreement or disagreement, and providing a rationale for their stance. Upon engaging with the book through reading or studying, students then review the anticipatory guide with the purpose of assessing any potential alterations in their beliefs. Anticipation guides are employed to engage past knowledge, stimulate curiosity, and foster the development of critical thinking skills. Additionally, they assist pupils in directing their attention towards fundamental topics or themes within the text.

The **use of concept maps / mind mapping** also serves instrumental in engaging the students level of learning. Concept maps show how concepts and ideas are related. Academic diagrams commonly show concepts as nodes and lines as interactions. Concept maps are created by identifying key concepts or words that are related to a topic. Next, students are encouraged to draw lines or arrows to link these ideas and name their interactions. Concept maps can show main concepts and sub-ideas hierarchically or in various ways. Concept maps help pupils see information structure. Critical thinking is promoted by exercises that require students to analyse relationships and prioritise information. Concept mapping is often used for brainstorming, summarising, and comprehending concepts.

Step 2: Align with learning Outcomes.

In any classroom, especially a technology-challenged one, teachers may make learning relevant by aligning courses with clear and explicit learning goals that outline what students should know and do at the conclusion of the unit. The common learning objectives alignment tools such as «backward design», «rubrics» and «success criteria» are employed to efficiently strategize and evaluate instruction. In

the domains of curriculum development, instruction, and assessment, each fulfils a distinct purpose. **As scoring guides, rubrics** delineate the standards by which student work is evaluated. They furnish an unambiguous delineation of the criteria that define distinct tiers of performance or quality. Generally, rubrics comprise a collection of standards and levels of achievement (e.g., Outstanding, Proficient, Fundamental, Unsatisfactory). Instructors have the ability to employ rubrics as a methodical and equitable means of assessing student work. A score or grade is allocated to the work in accordance with the criteria. By consistently employing rubrics, evaluation and grading procedures are standardised, expectations are communicated openly, and students receive constructive feedback.

The **backward design framework** for instructional planning commences with the ultimate objective in consideration. Educators commence their work by establishing unambiguous learning objectives and intended results for pupils. They then devise assessments and instructional strategies that are in line with those

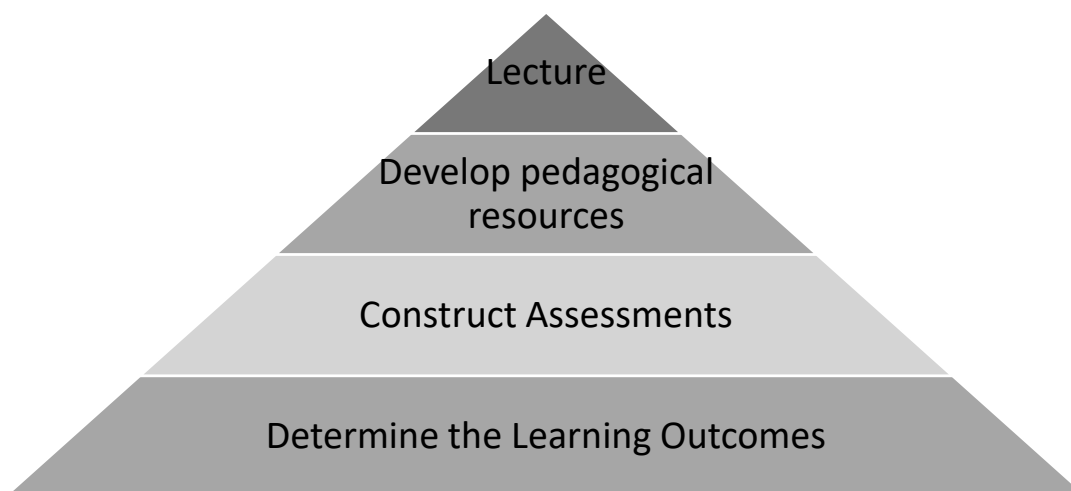


Fig. 1. Backward design procedures

The backward design framework for instructional planning commences with the ultimate objective in consideration. Educators commence their work by establishing unambiguous learning objectives and intended results for pupils. They then devise

assessments and instructional strategies that are in line with those objectives by working backwards.

Generally, the procedure comprises three phases: Determine the Learning Outcomes: Define the knowledge, comprehension, and skills that students are expected to possess and apply by the conclusion of the unit or lesson. Construct Assessments: Develop evaluations (e.g., quizzes, group projects, and speeches) that correspond to the intended learning outcomes and gauge students' progress. Develop pedagogical resources: Construct instructional materials, lessons, and activities that guide learners in the direction of attaining the specified goals. Backward design guarantees that both instruction and assessments are aligned with particular learning objectives. This aids instructors in the prioritisation of materials and tasks that are most pertinent to attaining the intended results. This method also supports new faculty members who are inexperienced to connect daily lesson to outcome.

Step 3: Task Based Active Student engagement.

Greater emphasis has been placed on the significance of engagement and its capacity to foster student motivation, retention, and learning enhancement. Understanding student engagement necessitates a comprehensive approach that considers its cognitive, affective, and behavioural dimensions; it should not be analysed in isolation. Insights, sentiments, and behaviours of our pupils are profoundly impacted by the course design, syllabus, activities, content, and evaluation processes of our instructors.

Cognitive engagement is demonstrated through the completion of complex problem-solving tasks, the application of Bloom's Taxonomy-described thinking skills, and the implementation of learning strategies such as content review and question-and-answer sessions. Intellectual engagement is achieved when pupils seek clarification or offer their own examples. Students begin to comprehend (and «own») the presented concepts, abilities, and attitudes at this point.

Emotional engagement refers to the concerns and demonstrations of students throughout the course. These emotions may consist of apathy as well as perplexity,

anxiety, exhilaration, and anticipation. One is more likely to invest time and effort in an activity that arouses inquiry or pleasure, such as listening to a podcast, engaging in a hobby, or viewing television. A positive emotional investment can additionally encourage the student to persist in the face of setbacks and enhance their sense of self-efficacy.

Behavioural engagement refers to the discernible manifestations of one's cognitive and emotional involvement. Proficient educators are cognizant of student cues such as nods of agreement or smiles, expressions of confusion, note-taking, and volunteer inquiries or responses. Additional information includes time spent on task. These physical behaviours, nevertheless, might not adequately reflect the extent and variety of student involvement. Incorporating suitable active learning strategies in a punctual manner throughout the session could therefore yield a more precise evaluation of the level of student engagement [4].

Incorporate authentic tasks that simulate real-world problems or situations that your students may encounter in their careers or personal lives to enrich the learning experience. By requiring students to employ their knowledge and skills in authentic contexts, you can foster the growth of their critical thinking, creativity, and collaboration skills. In addition, their motivation and engagement may increase when they recognise the significance and worth of their education. In order to integrate genuine assignments, educators adeptly implement approaches such as service-learning, problem-based learning, and project-based learning, even when the classroom lacks technological resources.

A commonly used instructional strategy known as **project-based learning** entails students participating in intricate, practical assignments that demand the application of critical thinking, problem-solving, collaboration, and creativity. Projects frequently involve multiple disciplines and may run for an extended duration. For example, students while assigned with the task of developing and executing a community-based environmental strategy, conducted research on regional ecosystems and suggested remedies to the community of their findings and

recommendations. During the **problem-based learning** tasks students are exposed to real-life scenarios or problems that demand the application of their domain area knowledge and abilities in order to identify resolutions. Students can be encouraged to investigate the origins, effects, and possible remedies of social problems for eg; homelessness, lack of drinking water etc and be taught to collaborate with local organisations and authorities for developing a course of action to rectify the social problem [5].

Another method of task based active student engagement is including **student community service into the curriculum via service-learning methodology**. This methodology prioritises experiential learning, civic engagement, and social responsibility. Through a partnership with a local preschool or childcare facility, or old age homes, for instance, students could engage in service-learning. By employing theories and concepts learned in the classroom to observe and support child development, they would devote time to working with young children. In order to furnish the centre with feedback, they may also administer assessments. Students are motivated to learn and their comprehension is enhanced through the application of acquired knowledge and skills in practical, significant contexts. In addition, they teach students critical thinking, problem-solving, collaboration, and communication, which are all essential for the twenty-first century.

Step 4: Redesigning Assessment methods to foster reflection.

The ultimate objective of education is to produce independent learners. In this age of accelerated technological advancement, the twenty-first century, when skills must be continually relearned and re-learned, this is particularly vital. Self-directed learners execute plans and activities effectively and without prompting. They are capable of recognising and utilising an extensive array of resources and instruments. They engage in calculated risk-taking and derive valuable lessons from their errors. Scholarly works indicate that by fostering self-directed learning in the classroom, students cultivate inquisitiveness and a willingness to experiment with novel concepts, perceive challenges as opportunities for growth, and relish the

process of learning. Students can evaluate their own learning, identify their strengths and deficiencies, establish development objectives, and commemorate their accomplishments with the aid of reflection and feedback. Utilise techniques such as self-evaluation, peer-evaluation, exit permits, and portfolios to encourage reflection and feedback.

In addition to implementing novel pedagogical approaches, it is critical to integrate adaptable and diverse evaluation mechanisms. Quizzes, tests, assignments, and interactive activities administered via learning management systems (LMS) or specialized online assessment platforms may be utilized in conjunction with offline evaluation methods, including lab reports, written examinations, quizzes, essays, and practical hands-on assessments, if accessible. In addition to individual assessments, which consist of self-administered quizzes, essays, projects, or presentations, instructors have the ability to create group assessments that require students to complete tasks or projects in teams such as collaborative research projects, group presentations, debates, and peer evaluations are examples of such group assessments [6].

The significant impact that assessment has on student learning is recognised in the design and development of every course. Therefore, it is imperative that every assessment activity be evaluated based on its contribution to fostering the desired level of student learning, extending beyond the scope of the assessment itself. Certain assessment practises actively impede certain types of learning, frequently by excluding the evaluation of specific essential skills and knowledge from assessment tasks, while others direct students' attention solely towards the immediate test. Everyone should prioritise the evaluation of assessment based on its impact on student learning, and subsequently consider its efficacy as a metric of achievement. An assessment that yields adverse effects on learning is hardly suitable for the classroom environment.

Conclusion. Teachers are tasked with equipping students to confront emerging challenges in an era of rapid globalisation; thus, the implementation of innovative

pedagogical approaches has emerged as a critical factor in maintaining students' interest. Teachers have access to numerous documented examples of innovative practise; nevertheless, directing them to a collection of tools and techniques may not always be the most effective approach to fostering innovation in the classroom. The educators must be internally driven to use innovative pedagogical tools to enhance students' learning outcomes more so they are competent enough professionals capable of devising solutions to novel challenges. Working towards a pedagogical framework that recognises students' critical role and uses the finest teaching approaches is crucial. Teacher abilities should be expanded to foster dynamic, caring relationships with students. To support teachers as creative professionals, pedagogical frameworks emphasise thoughtful lesson design that prioritises student-centeredness and active engagement. Establishing a conducive and empowering atmosphere for creativity, rather than adhering solely to conventional teaching and testing approaches, is imperative at present. By integrating diverse academic fields, transcending fundamental knowledge, extending beyond the confines of traditional classroom settings, and ultimately attaining a novel and distinct result, students can cultivate a propensity for innovation from the outset. While possessing a foundational understanding serves as a first step, it is imperative to subsequently utilise this knowledge in order to analyse and generate resolutions through a process of thorough investigation, until students arrive at the most optimal solutions. An apt analogy to describe the function of innovation in education can be found in the words of the poet William Butler Yeats: «Education ought not to be a mere filling of a receptacle, but rather the kindling of a fire».

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