

“Role of Innovative Teaching Pedagogies in enhancing engagement and academic performance of students of Higher Education Institutes: A Literature Review”

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Abstract

The teaching-learning process is the center of any higher education system. Today countless research is going on teaching pedagogies to improve the engagement and performance of the students. Despite the traditional classroom-based education being profuse across the globe, several online tools have attributed significantly towards an efficient supportive medium in education. Some of the most innovative and promising teaching pedagogies in education involve technology. Across the world, many innovative teaching pedagogies are used like Flipped classrooms, Roleplays, Problem based, Project-based learning (PBL), Portfolio development, simulations, etc. Learning Management Systems (LMSs) like Moodle is also used by teaching faculty and students which provide various options like social media classroom, webinar, chat rooms, discussion boards, and many more.

This paper aims to understand the innovative teaching pedagogies used worldwide in higher education institutes or Universities and their impact on the engagement and performance of the students. This study also helps to understand how innovative teaching pedagogies help in enhancing students' skillset in various ways. This study is carried out based on secondary data from various indexed research publications and websites of ranked Universities. With extensive literature review and secondary data, research has explored the various teaching pedagogies and their applications in the future in several higher education institutes. The study has come out with the scope and application of several teaching pedagogies used in higher education institutes. The study is beneficial for sustaining a better future for the upcoming generation to compete for their career.

Keywords: teaching pedagogy, higher education, student engagement, ranked universities

Introduction

“Practice makes a man perfect” is the phrase which we use many times in our daily life. Without practice it is actually not possible to succeed perfection in any field. For this perfection the first student needs to learn things. Teaching and learning is a continuous process which helps the student to reach perfection. Teaching is a procedure which encompasses the dynamic participation of teacher and students. Teaching is nothing but part of human engineering as well as a kind of soul doctoring. Teaching is referred by the researchers as the inclusion of a series of tasks performed by the teacher for leading the learners to the expected learning. (Pandey, R. K,2015). For understanding teaching aspects there are two ways. The first one focuses on instructor-centered activity which includes knowledge transmission from knowledgeable teachers or personnel to novice learners. The second way is emphasizing teaching as a learner-centered activity which ensures that learning enables novice learners for effective learning and supports them, guides them, and encourages them in their independent creation of new knowledge. Getting the desired outcome of the teaching process innovative teaching pedagogies plays a vital role here. (Piantola, et al.,2018). This process enables teachers to engage, to explain, to explore, to evaluate, to elaborate, and to extend the standards of the students. Education came with the purpose to add rationale thinking, knowledgeably, and self-sufficiency. There are various ways to be creative to get teaching and learning benefits by accepting teaching methods for students. (P.C. Naga Subramani, V.Iyappan,2018)As per the executive summary of the OCED organization. The quality of the learning environment is the key factor for positive learning and innovative student outcomes. (Organisation for Economic co-operation and Development, 2009)

Literature Review

Traditional teaching pedagogy

Before the rise of digital technology teachers use a “chalk-and-talk” method for teaching. The teacher acts as a sender who delivers the information which they have and students are the

receiver of the information. At the max teacher use projectors and transparencies. It means the teacher teaches the lecture content and students listen to that content. The disadvantage of this is that many times this lecture becomes the one-way communication which results in a lack of understanding of the concept. The necessary requirements for being an academician must be possessed by the personnel working in education. Their Behaviour helps them to make their teaching methods more effective. (Nahid Shirani Bidabadi, et al.,2016).Every student learns at a different pace and has a different level of understanding. Sometimes understanding the board writing of the teacher is also a problem for the students. Many times, asking for more explanation regarding the concept is very difficult for the students as they scare off the teacher. The only material available to the student is lecture notes and textbooks. This results in poor performance of the student which affects their academic record as well as lack of knowledge of the subject. Instead of remembering some information it's always better to get done some task performed by the students, which becomes more effective for the students to employ the process to investigate, formulate and apply reasoning for the information acquired during the learning process. (Elvis Munyaradzi Ganyaupfu,2013)

Innovative Teaching pedagogies

Technology and teaching are a good combination. The utilization of technology is said to be a very effective and important learning tool that enables students for managing their academic outcomes and also helps them to develop innovative products from inputs by the technology. (Tindowen, D. J. C et al.,2017). Technology engages students and motivates them to do activity-based learning. Technology makes teaching material more fascinating and interesting. As per recommendations of the past researchers teaching and learning can be innovative when teachers start to implement the recent methods like flipped classrooms, webinars, screencasts, etc. Also, the Student-centered method of teaching-learning like mind maps, case study, problem-based learning, and collaborative teaching becomes very effective when it comes to innovative teaching approaches. (R.Jayashree,2017)

Digital technologies have played a requisite role in changing our way of life, improving the ways of communication, developing ways of thinking, induce feelings, create channels to have an influence on other people, enhancing social skills, and many more. (Aigerim Mynbayev et al.,2017).The classroom experience is changing because of all these digital technologies. This technology provides sorts of amenities for students and teachers. For

example, the classroom is wired with computers for PowerPoint presentations with whiteboards to deliver lectures, which also connect with the internet to show videos, images, or websites if needed. In addition to these with the help of tablets, PCs, laptops teachers are able to write notes, to take feedback, and to do assessments with the help of spreadsheets, etc. New innovative teaching-learning methods give the students a new way to sharpen their skills. (D. Kalyani and K. Rajasekaran,2018)

Execution of new teaching pedagogies by the faculty, who plays the role of a manager of their classroom affects significantly on the academic achievement of the students. (Magulod Jr, G. C,2018) The teacher can assist the learner to learn by efficiently by creating the teaching environment interesting, stimulating, and dynamic. According to author Pierantonio Laveneziana, Alexandre Duguet, and Christian Straus. There are shreds of evidence of different teaching methods and/or approaches which influence student academic performance in a various way. (Laveneziana, et al.,2017). Teaching is not only embedded with transferring information from the teacher to the student but also stimulate the activeness of the students and make them active receptors. This can create a piece of new knowledge and desired wisdom. Effective execution of innovative teaching pedagogies and the new strategies help the education sector to come up with a new perspective to enhance the overall academic performance of the students and help in teachers' career development.

Some of the innovative teaching and learning methods are discussed below:

- Project/Problem-based Learning (PBL)
- Smartboards
- Virtual reality
- Cloud computing
- Stimulating classroom environment
- Group assignments
- Flipped classroom method
- Webinar and video conferences
- Moodle
- **Project/Problem-based Learning (PBL):** PBL is also a non-technical method of teaching-learning. This involves students have to solve the case or problem and it has to provide the solution for the same. This type of method gives exposure to real-time

problems and prepares students to solve real-time. This provides the experience of the actual situation. Project-based learning focuses on more real-world problems and challenges, as well as problems occurring while engaging students in critical thinking.(James Devis,2017) PBL is considered as one of the good educational strategies, the reason behind it can be used as a general strategy across the curriculum and professionals and careers and also can be implemented as a working strategy. It's also useful to know the learning outcomes of a specific course.(Vidal et al., 2017)

PBL is one of the innovative approaches to learning that involves a multitude of strategies that critically helps in learning for twenty-first-century students.(Bell, S,2010).Project/Problem-Based Learning is one of the teaching methods in which students advance knowledge and skills by working for a comprehensive period of time to explore and respond to an accurate, attractive, and difficult question, problem, or challenge. It increases motivation to learn in order to arrive at a solution. It provides additional opportunities for students to work collaboratively and practice communication and social skills.

Using a case-based approach of teaching we can engage students in a discussion of specific circumstances that are similar to real-world examples. This method is learner-centric with strong interaction between students as they figure their knowledge and work together as a group to examine the case. Students are solving different case studies in groups as well as individuals related to current trends and presenting these case studies in class.

➤ **Smartboards:** Smartboard is one of the operational means for taking the classroom to the real-life by aiding students' knowledge to a deeper level of understanding. This can be done by creating the course content cooperative and pictorial. Teaching involvement into an interactive, cooperative and collaborative experience is changed by the smart boards as the teachers use vibrant multimedia content, to help deliver the topic more effectively to the students and making this as a visual, engaging experience.

The easiness of use made each product to enhance instructional proficiency. teachers can able to deliver course material with the simple finger touch or a pen, save annotations and notes made in digital toner, and distribute the saved content to the students directly. SMART Board enables instructors to interact with dynamic multimedia content and write notes with the help of digital ink, then save them instantly and distribute this material to

students with ease. SMART Board interactive whiteboards make learning a visual, engaging experience for students, which helps deepen understanding and promote retention of course material. (P.C. Naga Subramani, V.Iyappan,2018)

- **Virtual Reality:** Virtual Reality is a technology that propositions to students a valuable chance to learn in an immersive way that makes a permanent impression on their minds about the. It makes learning exciting and aids the students to retain the content for a longer time.
- **Cloud Computing:** The use of cloud computing allows teachers to experiment with innovative methodologies of teaching. With such a method teacher can save vigorous classroom resources such as lesson plans, lecture notes, and audio lessons content, videos related to the content, and assignments details for the students on the cloud of class. This data can be accessed by the students from their homes or from anywhere, whenever they needed. This makes it possible to bring the classroom back to the students with the click on a mouse. It is also helpful to those students who missed the class either because illness or any by other reason will stay updated at all times. (Mrs. S. M. Barhate and Mrs. Snehal Narale,2015)
- **Moodle:** Moodle is one of the cloud services that exist for teaching and learning. The full form of Moodle is a modular object-oriented dynamic learning environment. Moodle platform is constructed on the combination of both Moodle and Wiki, which includes teaching module and student module and also system management module. This enables students to study by themselves, discuss questions, share resources, do homework and tests efficiently, and also enables teachers to explore a new area in publishing academic work. This platform also comes up with online interaction and two-way communication between students, which can help in transparent and convenient evaluation. (Heng He et al.,2016)
- **Stimulating classroom environment:** A classroom environment that is well adorned, entertaining, and appealing will help excite a student's mind and will help to learn better. Such an inventive and interesting environment will help students to explore and will boost them to learn more about the subject.
- **Group Assignments:** Group assignments like PowerPoint presentations, quiz competitions; group discussions, etc. can be used to make teaching-learning more effective. Effective presentation abilities of students reduce miscommunication, which is

the major cause of work-related strain. Teaching on the specific topics or series of the topics given by the faculty in the classroom is also a good practice. (Herodotou.C et al.,2019). So in educational institutes, the classes make the group of students and give topics and students need to prepare PowerPoint presentations and they have to present their topics in front of the audience. The academic competency makes students hard working and boosts up the confidence level.This is possible in the best and effective way when the competition involves games, quizzes, and some other exciting activities.By applying this method students are participating more and gaining the knowledge about theoretical as well as practical aspects.

The group discussion is come up with a specific purpose of not winning the argument but helps the participants to explore the knowledge on that specific are taken into consideration for the discussion. With this we can bring a set of students together on a common platform to share their concepts, thereby giving a chance to show not only their knowledge but also to understand and enhance their learning by absorbing the thoughts of other students.

Flipped Classroom: In today's world main challenge of the education sector to make engage the students in the best possible way. Educators are using new strategies and innovative teaching pedagogies nowadays flipped classroom is one of them, this is a way to overcome the benefits of conventional teaching. (DeLozier & Rhodes, 2016; O'Flaherty & Phillips, 2015). A Flipped Classroom is blended learning pedagogy that enables the technology which allows the content usage which takes in the external environment of the classroom and vice versa (Strayer, 2012).

According to writer Antonio L. Leal-Rodríguez and Gema, Albort-Morantb learning-performance reveals that learning experientially emphasizes more upon better performance by the students. Hence, it is suggested that acquiring experience-based learning opportunities can help students in performance enhancement and skill development.(Antonio L. Leal-Rodríguez, Gema Albort-Morantb,2018).An innovative method makes learning more interesting unlike the traditional method. It allows efficient delivery of lessons in the classroom as well as at home so the student is not missing any session and keep interacting with the topic which is delivered in the classroom. Some students are visual learners, whereas others are verbal learners or auditory learners. According to the students' needs innovative strategies must be implemented and need to be modified.(Farah Naz and Hasan Sohaib

SR .No	Title	Author and Year	Teaching Pedagogy used	Findings
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Murad,2017).Technology permits teachers to customize lesson plans for the students and their unique styles of learning. This leads to an increase in the performance of the students as they feel learning as an interesting task.

- **Webinar:** Webinars are the seminars that are web-based, which included access to the participants across different geographical localities at one point of time simultaneously using the internet by live communication. (Andreas gegenfurtner, Christian Ebner,2019).

Research Methodology

Teaching and learning play a vital role in students' academic development. The adoption of various innovative methods for teaching by a teacher has a great impact on the students' performance related to any subject. These methods also help the staff to do the assessment of the student.

- **Research Design:** The research design is a comprehensive proposal of action for the research which contributes the blueprint for gathering, measurement, tabulation, and analyses the data. Historical research turns history or the past to study the patterns, their impact on the present, process, and so on. In this sense, this research can be termed as historical research. In the current study Descriptive research design is used based on past literature available.
- **Research Instrument:** This research is carried on the secondary data. And the secondary data has been collected from different types of sources as literature reviews, research papers, books, articles, journals and university websites, etc.
- **Research Area:** This study is based on the innovative teaching pedagogies used by the teachers for teaching and learning which also help students to improve their academic performance and enhance their engagement.
- **Data collection** Data are collected from various newspaper articles, magazines, Research papers, journals, university websites, books, etc. for this paper. Most of the literature is available there on innovative teaching pedagogies and its impact on academic performance and enhancing student engagement.

1	“Innovative methods of teaching and learning”	P.C. Naga Subramani, V. Iyappan (2018)	Short-lectures, Role-play, simulation, Problem-based learning, Moodle	In this paper, the researcher talks about teaching and technology like social media, Moodle, SmartBoards, etc. These pedagogies help students in visual learning and help to improve student engagement. Pedagogy like smartboards, students come across dynamic multimedia content which helps them to develop to focus and improve academic performance.
2	“Teaching Methods and Students’ Academic Performance”	Elvis Munyaradzi Ganyaupfu (2013)	Teacher-student interactive approach	This study is carried out by the researcher on primary data. According to them the teacher-student approach leads to produce higher mean score compared to a student-centered and teacher-centered approach. Students are advised to engage with some practical activity or task instead of remembering the information taught by the teacher. This study concluded that the teacher-student interactive approach helps to improve the academic performance of the management students.
3	“Promoting innovative experiential learning practices to improve academic performance: Empirical evidence from a Spanish Business	Antonio L. Leal-Rodríguez, Gema Albort-Morantb (2018)	Experiential learning,	This study shows experimental learning seems to be a significantly implemented trend in the field of higher education. According to this study, strategies of experiential learning empower the students to understand the theoretical concepts in a better way which results in the enhancement in their academic performance. The study also shows that there is a positive relationship between the attitude of the students towards experiential learning pedagogy and how they perform in academics.

	School”			
4	“Effective Teaching Methods in Higher Education: Requirements and Barriers”	Nahid Shirani Bidabadi, Ahmmadreza Nasr Isfahani, Amir Rouhollahi, and Roya Khalili (2016)	Mixed method - Teacher-Student centered approach	The researcher concluded that innovative pedagogy used in teaching empowers students to make them clear with their preconceptions, motivate them to learn, and also enable them to seek answers to their own queries. This article also mentioned that universities and higher education institutes must know the barriers and requirements to improve the teaching quality.
5	“A Study on Innovative Teaching Learning Methods for Undergraduate Students”	R.Jayashree (2017)	Mind maps, Case study, Problem-based learning, and collaborative teaching.	This study came up with the importance of innovative teaching pedagogies in higher education. These methods help the students to solve real-world problems by providing them visually and live learning experiences.
6	“Innovative Teaching Has a Positive Impact on the Performance of Diverse Students”	Farah Naz and Hasan Sohaib Murad (2017)	The importance of innovative teaching and learning methods in higher education is described in this research paper.	In this research, the paper author talked about the diversities of students and their impact on improvement in academic performance. The study suggested that innovative teaching strategies are needed to be implemented and it should be modified as per the students' needs. Innovative teaching pedagogies helps in various ways to students like to strengthen their linguistic competence, developing critical thinking, communication, and interpersonal skills. This study tells if teaching pedagogies are innovative it can help students' diversity and

				will be able to enhance their academic performance.
7	“Innovation of teaching methods in university based on mobile cloud computing”	Heng He†‡, Wei Xia†‡, Yu Jin†‡, Botao Zhang†‡ & Pingfang Tian†‡ (2016)	Mobile Cloud Computing	In this paper, the author suggested that the Mobile Cloud Computing platform is a made up of Moodle and Wiki, and contains a teaching management module, student module, and system management module. This helps students in self-study, discussions of their queries, sharing of resources, to manage evaluations and assessment efficiently, and also helps teachers in publishing their teaching resources. This resulting in access to the platform to study anytime and anywhere through mobile terminals, which improves students' interest in learning and strengthens their innovative thinking ability.
8	“Cloud-Based Teaching and Learning Environment for Smart Education”	Mrs. S. M. Barhate and Mrs. Snehal Narale (2015)	Cloud technology and its use in smart education	In this paper, the author discussed cloud technology and its utilization for smart education in the form of cloud collaboration.
9	“Innovative teaching and learning”	D. Kalyani and K. Rajasekaran (2018)	Brainstorming sessions, Incidental learning, remote labs, Embodied learning.	The author discussed various innovative methods of teaching and its advantages. As per the study innovating teaching methods helps the students to pay more attention in the classroom and also improve the ability to retain the concepts studied.
10	“Innovative Learning Tasks in Enhancing the	Gilbert Cabilangan Magulod Jr.(2018)	Tasks which are effective to the	This study is for literature students and faculties. The innovative learning tasks has to be used to improve the skills. The author

	Literary Appreciation Skills of Students”		development and enhancement of the student's skills	concluded that when skills of the literary-appreciation are improved, students can climb upon another higher step of the knowledge ladder. This can improve the understanding of the concepts in a better way.
11	“Project-based learning for the 21st century: Skills for the future”	Bell, S. (2010)	Project-based learning	Many of the skillsets can not measurable through all standardized tests. Project-based learning helps in assessing the students in a better way by enabling them to learn from the processes, self-evaluation, and reflection. PBL is also an authentic assessment tool for students.
12	“Twenty-First-Century Skills of Alternative Learning System Learners”	Darin Jan C. Tindowen, John Michael Bassig and Jay-Ar Cagurangan (2017)	Alternative Learning System (ALS)	The author concluded that this study highlights an Alternative Learning System (ALS). This pedagogy leads to the improvement in performance and uplifts the skills which are required in this current competitive era of the 21 st century. Also, this innovative tool can help the students in the basics of the formulation of policy and face the challenge of globalization. In this study the Northern Philippines area is taken into consideration in which population is studied across the age, employment, and sex amongst the learners of ALS.
13	“How can Video-Based Sessions Improve E-Learning of Respiratory	Pierantonio Laveneziana, Alexandre Duguet Christian Straus (2017)	Video-Based Sessions	This study came across European and world-wide university medical programs which are emphasizing more video-lectures. On the other side, they do not ignore traditional classrooms which is a strong backbone of an education system.

	Physiology?"			
14	“Adopt a Bacterium – an active and collaborative learning experience in microbiology based on social media”	Marco Aurélio Floriano Piantola, Ana Carolina Ramos Moreno, Heloísa Alonso Matielo, Natalia Pasternak Taschner, Rafael Ciro Marques Cavalcante, Samia Khan, Rita de Cássia Café Ferreira (2018)	collaborative learning	This study talks about social media platforms as a better source for seeking new information effectively and efficiently.
15	“Eight years of PBL peer-tutors experience at the Universidad Austral of Chile's Medical School”	Alejandra Vidal, Ricardo Castillo, Jorge Gómez (2017)	Project-Based Learning	PBL Promotes the acquisition of practicing the skills of medical students. Peer tutoring in project-based learning is affecting positively the personal achievement of the students, which is resulting in the improvement of academic performance.
16	“How the flipped classroom affects knowledge, skills, and engagement in	Luis R. Murillo-Zamorano, José Ángel López Sáncheza, Ana Luisa Godoy-Caballerob (2019)	Flipped Classroom	This paper is focused on the successful use of flipped for a better understanding of its influence on knowledge, skills, and engagement. Of students in higher education. The students are under generation Z which amongst which the impact of flipped classroom pedagogy is studied by the researcher. The measurement scale is developed first (4D flipped classroom) to explore the degree of

	higher education: Effects on students' satisfaction”			flipped classroom presence in our higher education learning experience. flipping the classroom has a positive impact on student’s engagement in the higher education sector.
17	“Webinars in higher education and professional training: A metanalysis and systematic review of randomized controlled trials”	Andreas Gegenfurtner, Christian Ebner(2019)	Webinar and video conferences	The current study is a meta-analysis which systematically reviews and meta-analyses the literature available of evaluating the effectiveness of webinar as an innovative teaching pedagogy and its impact on student’s engagement. This teaching pedagogy helps to improve Student’s knowledge and skills. The study also used its implications by informing the benefits of webinars and video conferences to the trainers and professors working in the education sector.

Conclusion

The researcher believes that, innovative teaching and learning pedagogies are beneficial for both students and teachers. By studying past research perspectives researcher can conclude that, the implementation of innovative teaching pedagogies in higher education positively impacting on student engagement and also the overall academic performance.

The researchers suggest that it enhances the student performance and the teaching would be extremely effective if the teacher uses new and innovative pedagogies for their teaching with the conventional method of teaching.

Limitations

Due to the limited scope of this report it is neither feasible nor necessary to review the large number of studies based on primary data. As this study is not based on primary data, it is difficult to understand the result of implemented innovative methods. This report could be used as a first step concerning constructing a theoretical structure.

Scope for Future research

A survey can be done regarding the use of these innovative teaching and learning methods to find out the performance of the students and to learn about its effect on their assessment. Future researches examine the issues related to these innovative practices. It is interesting to expand the understanding of the use of these methods w.r.t. different streams and students.

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