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Innovative Teaching Technologies to achieve Higher Cognitive Level in the students of Higher Learning Institutions

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ABSTRACT

Aim-*To implements various teaching learning strategies to accomplish higher cognitive level and evaluate the impact on student's performance and insight studying in professional courses.*

Objective: *To assess the performance and perception of the pharmacy students with various teaching strategies and to conclude most effective technique for effective learning.*

Method: *Sample of 180 SY undergraduate students from the pharmacy college was utilized for the examination. Students' assessment test scores were derived from the Class test prepared by the lecturer using Google forms. The differential effectiveness of the three teaching methods on student academic performance was analyzed*

Conclusion: *The mean scores results show that Flipped Classroom strategy was the best observed technique, followed by Only Think Pair Share action while the Only out of class and traditional teaching methodologies were the least feasible to achieve higher cognitive levels.*

Keywords*: Flipped Classroom, Higher Cognitive Level, Traditional teaching, Teaching technology, TPS activity*

1. Introduction

The rapid rise in Internet use and advances in online innovation in the course of the most recent decade present a chance to reevaluate the manner in which we instruct and learn with regards to wellbeing advanced education[1]. This examination covers the plan, execution, and assessment of this novel methodology and contrast it and traditional educating strategy[2]. Innovative technologies are turning into a vital piece of our lives and its impact are not any more noticeable than in the ways of life of more younger generations who grew up drenched in innovation. As innovative advancements have became unavoidable, their transformative technology spreads all through society, and that includes education[3]. The excitement for rising innovations like cell phones, remote systems, distributed computing, and internet based life comes from the huge open doors they offer to change and

upgrade the learning and instructing encounters[4]. The flipped classroom or blended learning has risen as a promising option in contrast to traditional educating as it offers a structure for coordinating developing internet learning advances with dynamic and collective learning[5].The present study was designed to implement and evaluate the different teaching methods in the students learning in higher institution and to conclude the most effective teaching technology on the basis of students score and perception to achieve higher cognitive level[5, 6].

2. Methodology

2.1 Study Question: Most Effective method for the students learning professional courses to achieve higher cognitive level.

2.2 Study Site: R. C. Patel Institute of Pharmaceutical Education and Research, Shirpur

Design:

2.3 Study Participants: 180 Undergraduate Pharmacy students from A, B and C divisions of second year are included in the study.

2.4 Academic Subject Choosen: Human Anatomy and Physiology

2.5 Chapters included: Eight Systems from the

1. Digestive System 2.Nervous System 3. Urinary system 4.Endocrine System
5. Skeletal System 6 Respiratory System 7. Cardiovascular System 8. Reproductive System

Table 1: Categorization of Chapters for different Teaching methods

Selection of Chapters	Chalk and Talk Method	Only Out of Class Activity	Think Pair Share Activity	Flipped Classroom
	Digestive System Nervous System	Urinary system Respiratory System	Endocrine System Skeletal System	Cardiovascular System Reproductive System

2.6 Methods Applied: Four Methods**:**

2.6.1 Traditional Method: Two chapters were taught by Chalk and Talk method

2.6.2 Only out of Class Method: Only Video lectures of two another chapters are given to the students to learn at the home

2.6.3 Think Pair Share Method: Two chapters given above were taught in the class and TPS activity applied. That is T- Think (First Individually), P- Pair (then in Pairs (Pair) or groups), S- Share (and finally together).

2.6.4 Flipped Classroom Method: Blended Learning, First out of Class activity and then in class (TPS) activity.

After applying all these methods, class test was conducted in each division. Multiple choice questions were prepared using Google forms.

Table 2: Research Design

Criteria	Particulars
Research Method	Experimental
Sample	180 Students (A, B and C)
Data Collection	Google forms (Online Quizzes)
Groups for Comparison	Four

2.7 Steps involved in the study protocol

Step 1: Systematic method was designed for finding all essential articles. An all-encompassing search strategy was designed to retrieve most relevant comparative case controlled studies and review articles from published literature.

Step 2: To come across the objective of the study, initially we thought decide study protocol like teaching methods, year of the course, study subject, chapters to be include in the study,

Step 3: Then we downloaded Screencast-O-Matic Software for the preparation of audiovisual lectures for the selected chapters.

Step 4: Preparation of Online quizzes for the selected chapters using Google forms to conduct their test after applying these different teaching methods

Step 5: Application of these four teaching methods on 180 student from each division

Step 6: Finally Preparation of standard questionnaire and conduction of Feedback Survey from the students for getting their perception to know most effective method.

3. Results

Based on the outcomes we got, the evaluated student performance test score reveals that most extreme score was acquired in the method Flipped Classroom, It is the best system for accomplishing higher cognitive level in professional courses pursued by TPS method and Chalk and talk strategy, It has watched, just out of class action is minimum effective technique. After examination of the outcomes, we have distributed the questionnaire containing following questions and collected their assessments and drawn the outcomes, it has seen that students were likewise completely satisfied with the flipped classroom strategy.

Table 3: Traditional Teaching Method (Chalk and Talk)

Test Number and Chapters	Student Score				
	0-25%	26-50%	51-75%	76-100%	Total
1. Digestive System	78	45	29	19	171
2. Nervous System	67	58	27	21	173

Table 4: Out of Class Activity (Video lectures Outside the class)

Test Number and Chapters	Student Score				
	0-25%	26-50%	51-75%	76-100%	Total
3. Urinary System	72	48	45	5	170
4. Respiratory System	69	68	36	2	175

Table 3: TPS activity (In Class activity)

Test Number and Chapters	Student Score				
	0-25%	26-50%	51-75%	76-100%	Total
5. Endocrine System	26	37	49	58	170
6. Skeletal System	36	29	60	48	173

Table 4: Flipped Classrooms (Out and In Class activity)

Test Number and Chapters	Student Score				
	0-25%	26-50%	51-75%	76-100%	Total
7. Reproductive System	3	27	55	94	176
8. Cardiovascular System	2	17	65	87	171

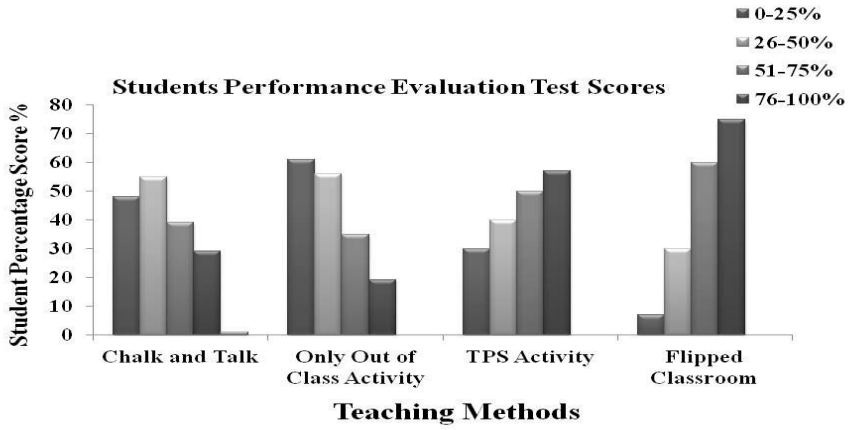

Figure 1: Student Performance Evaluation Score for four teaching methods

Table 5 Students Perception about the applied teaching learning Strategies:

Sr. No.	Questions	Strongly Agree	Strongly Disagree	Agree	Not Agree
1.	I daily watch the video assignment	27%	05%	58%	10%
2.	The ten minute video of the topics from the chapter is easy to look and understand.	40%	12.4%	47%	0.6%
3.	Flipped classroom is superior than other three methods	73%	6.6%	20%	0.4%
4.	The strategy for flipped classroom enhanced my participation and trust in the class	48%	14.5%	37%	0.5%
5.	Flipped Classroom improved my communication, motivated me for the interaction with teacher.	34%	8%	52%	08%
6.	Traditional Classroom is Better than all other three methods.	16%	55%	15%	14%
7.	The TPS activity is better than Only Out of class activity	64%	08%	24%	04%
8	The Traditional training strategy is superior to anything Only Out of class action	58%	3%	37%	02%

4. Discussion

The reason for this examination was to implement different teaching learning methods and to know about student's view of the Flipped Classroom. The Flipped Classroom is a huge move in the manner in which students generally work in a classroom. In a Flipped Classroom students get their immediate guidance through video which can be viewed in or out of class[6]. Never again is the educator utilizing the greater part of classroom time to address; rather students are participating in different learning exercises with expanded vis-à-vis classroom time[7]. The general focal point of the Flipped Classroom in this investigation was to make the learning condition more students focused by moving the gaining from an inactive arrangement to a functioning one[7,8]. We applied and observed four methodologies and look at them students perform short exercises after implementation either independently, and presented their responses to a mechanized evaluating framework. In context of the associated indicating four strategies, the assessed students test execution score revealed that flipped classroom demonstrated the high mean score looked for after by the TPS technique and chalk and talk strategy and the least score was recorded for the Only Out of Class method[9]. Flipped Classroom covers higher psychological examination and aides for lighting up of critical considerations of the students[10]. It makes trust in students and they winds up being more instinctual, effectively pulled in and they inspire energized to consider by their own. Undergraduate students have to complete flipped classroom utilizing on the web modules to stay amazing learning of the students. As of late, the implementation of flipped classrooms has been progressively talked about. Some pragmatic research has revealed the upsides of flipped classrooms, and demonstrated that this learning mode can profit students' learning. Be that as it may, a few scientists have proposed the significance of rightful learning direction and students' quality with regards to flipped classrooms[9, 10, and 11]. With the end goal to help students in achieving dynamic learning and self-controlled learning in this learning mode, in present study, four different methods were designed flipped classroom, chalk and talk method, Think Pair Share and Only out of class approach was created. This sort of learning technique connected in the flipped classroom gives a solid learning approach by which students can screen their own learning procedure and assess the most proper learning methodologies for them[12,13] and[14]. This is a crucial finding and the results also exhibits that students were getting a charge out of the blended circumstances and lead to essential thinking. The classroom trades and activities empowered in the blended classes asked students to think on a very basic level and their higher demand thinking tends to reflect the interest made towards the subject[15, 16 and 17]. The examination finding

is in like manner consistent with various examinations in the reported studies which showed that student's learning in blended courses was similar or to some degree superior to standard courses[18]. The system of blended learning as an educating model is by and by expanding progressively affirmation and as such appears as an elective training approach that help students improve their learning[19,20].. In light of the results, blended learning or flipped classroom is a feasible technique to pass on standard quality method as it gives academician and students an advancement of teaching-learning process with a very effective manner.

5. Conclusion

This exploration speaks to an underlying endeavor to analyze the effectiveness of four different teaching methods, traditional and blended learning. The examination showed that students who were educated with the blended learning or flipped classroom model would be wise to scores than the individuals who went to traditional methods. As far as we can tell, flipping the conventional classroom is both an achievable and important move to teach a considerable accomplice of students on various colleges. We trust that implementing significant learning is a shared responsibility among students and teachers and that executing inventive arrangements can encourage academic performance and better set up our future students. We trust that teachers at different colleges will utilize the flipped classroom discussed here to reevaluate their classrooms in a way that enables students to create higher order cognitive level.

6. Acknowledgement

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7. Conflict of Interest

There is no any conflict of interest to declare.

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