



Effectiveness Of Flipped Classroom Teaching vs. Traditional Method Of Teaching On Student Performance And Perception.

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Abstract: Study involves providing study resources for students to use outside the class so that class time is freed up for instructional activities. This study was done to assess the effectiveness of flipped classroom activity as a teaching–learning method. **Materials and methods:** In this interventional study, 60 students were divided into two batches of flipped class and traditional teaching . An online Google group was created for the batch of FC. Brief introduction and pre-recorded videos related to the assigned topic were posted in the Google group. Discussion was carried out in the form of solving cases and problem-solving exercises. Pretest and posttest were conducted at each session, and an end of module test was conducted for both the groups. **Results:** There was a significant difference between the pre- and posttest scores and also the mean scores of summative test between two groups ($P < 0.001$). The perception of the students regarding FC was also evaluated. Eighty-two percent strongly agreed that FC was more engaging and interesting in comparison to traditional class. Seventy-six percent strongly agreed that more such classes should be conducted in the future. **Conclusion:** Flipped classroom improved the student performance and learning experience effectively as compared to traditional teaching, and students' response was also largely positive.

Keywords: Effectiveness, flipped class, medical students, students' perception

I. INTRODUCTION

Currently the challenge in nurse education is to make programs convenient, accessible and attractive to a wider cohort of students. Education is a light that shows the mankind the right direction to surge.¹ It has shaped so many generations for thousands of years and remains so in our present. The nursing education is designed to prepare individuals for the nurse educator role in academic or staff development settings.² Traditional education also known as basic, conventional education refers to long established customs that society traditionally used in schools.³ It is concerned with the teacher being the controller of the learning environment. Power and responsibilities are held by the teacher and they play the role of instructor (in the form of lectures) and discussion maker (in regard to curriculum content and specific outcome).⁴

Recent advances in technology have unlocked entirely new directions for education research.⁵ Many institutions are moving towards innovative methods of teaching as a solution to produce graduated who are creative and can think critically, analytically and solve problems.¹ The “Flipped Classroom” is one of the most recently emerged and popular innovative teaching method now–a days. Flipped classroom refers to pedagogical practices that allow students to learn course contents traditionally delivered in classroom lectures prior to class, with the help of technology.⁵

The flipped approach has many advantages for students; it allows learning to be independently paced, flexibility of when and where electronic resources are accessed, and actual class time is used more effectively to engage students in dynamic discussion and interactive learning. The flipped approach allows students to practice lower order thinking skills such as remembering and understanding independently, and at their own pace. Class time can then be guided by tutors and peers, to devote time to learning activities allowing students to develop higher order thinking skills such as application, analysis, synthesis and evaluation.

Statement of the problem

Effectiveness of flipped classroom teaching vs. traditional method of teaching on student performance and perception in Anatomy among Bsc (N) students in college of Nursing ,Teerthanker Parshvanath College Of Nursing ,Amroha.

Purpose of the study

The purpose of the study is to identify the student centric active learning method that helps in improving in their academic performance

Objectives of the study

1. To assess the performance of the students in both groups of flipped classroom teaching and traditional method of teaching by means of pre-test questionnaire in anatomy.
2. To compare the performance of the students in both groups of flipped classroom teaching and traditional method of teaching by means of post -test questionnaire in anatomy.
3. To assess the perception of the students regarding flipped classroom teaching and traditional method of teaching .

Assumptions

1. Students will be the perfect representatives to evaluate the active learning process
2. Findings may reflect the present situation of the teaching pedagogy and may help to enhance teaching –learning activity

II. METHODS AND MATERIALS

📖 **Research approach:** Mixed method research approach.

📖 **Research design:** Quasi experimental research design to assess the student performance on anatomy, design to assess the perception of students regarding flipped teaching method and traditional method

📖 **Research setting:** The study will be conducted in Teerthanker Parshvanath College Of Nursing.

📖 **Population:** In this study the population refers to the First year Bsc (N) students studying in Teerthanker Parshvanath College Of Nursing.

📖 **Sample size:** Sample size are 30 for flipped group and 30 for traditional class room teaching.

📖 **Sample technique:** Random sampling technique.

📖 **Variables-** Study variables: Performance and Perception in anatomy among Bsc (N) students

- Demographic variables (age, gender, religion, education of father and mother, occupation of father and mother)

Plan for data collection:

The data collection will be done at selected educational setups by using structured questionnaire to assess student performance regarding Anatomy and Lickert scale in the form of questionnaire to assess the perception regarding flipped teaching method and traditional method

Selection of the study instrument:

Section -1 Demographic proforma

Section-2 Structured questionnaire on student performance regarding Anatomy.

Section -3 and Lickert scale in the form of questionnaire to assess the perception regarding flipped teaching method and traditional method

Plan for data analysis:

1. Demographic proforma was analyzed in terms of frequency and percentage.
2. Pretest performance of the students in both groups of flipped classroom teaching and traditional method was analysed by using frequency, percentage, mean, mean percentage and standard deviation.
3. Posttest performance of the students in both groups of flipped classroom teaching and traditional method was analysed by using paired t-test.
4. Comparison of the performance of the students in both groups of flipped classroom teaching and traditional method of teaching by means of post -test analysed by unpaired t- test.
5. Perception of the students regarding flipped classroom teaching and traditional method of teaching were analysed by using frequency, percentage.

III. RESULT

Analysis of the study finding are categorized and presented under the following headings:

Section I: Description of the demographic variables of Nursing students under study (table 1).

Section II: Distribution of pre-test and post test level of knowledge of Nursing students in both the group (table 2)

Section III: Data on effectiveness of Flipped teaching and traditional teaching method (table 3).

Section IV: Perception of Nursing students of flipped method of teaching (table 4).

Table 1: Frequency distribution Nursing according to demographic characteristics.

Sl no	Socio -demographic variables	Group A (Flipped classroom method)	Group B (Traditional teaching method)
1	Age (in years)		
	<20 21-25	28 2	20 10
2	Gender		
	Male Female	16 14	15 15
3	Educational status of Mother		
	Illiterate	5	4
	Matric	3	4
	Secondary Graduate & above	15 7	12 10
4	Educational status of Father		
	Illiterate	2	4
	Matric	3	2
	Secondary Graduate & above	7 18	8 16
5	Occupation(Mother)		
	Working Non working	14 16	12 18
6	Occupation(Father)		
	Working	18	20

	Non working	12	10
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Table 2: Frequency distribution of pre-test and post test level of knowledge of Nursing students in both the group.

Level of Knowledge of Nursing students	Flipped method of teaching		Traditional method of teaching	
	Pre-test level of knowledge	Post-test level of knowledge	Pre-test level of knowledge	Post-test level of knowledge
	Frequency	Frequency	Frequency	Frequency
Poor	4	0	7	1
Average	26	3	21	16
Good	0	27	2	13

Table 3: Overall mean, standard deviation (SD), mean percentage, paired t value between pre-test and post-test 2 and unpaired t test value of both the group.

Group	Pre-test	Post-test	Student Paired 't' test	(Difference = Post-test-pre-test)	Independent 't'-test
Flipped teaching group	4.80±1.77	15.20±2.31	t=23.4 P=0.001 significant	10.4± 2.43	t = 19.93 P = 0.001 significant
Traditional teaching group	4.53±1.47	4.70±1.55	t=0.65 P=0.52 not significant	0.17±1.41	

Table 4: Perception of Nursing students regarding flipped method of teaching

Sl no	Content and structure	Response on Likert scale				
		5	4	3	2	1
1	At the beginning of the each session, all educational objectives were clearly defined	17 (56.66)	10 (33.33)	3 (10)	0	0
2	The worksheet given prior to the session was very useful to understand the topic	15 (50)	10 (33.33)	4 (13.3)	1 (3.3)	0
3	Learning key foundational content prior to coming to class greatly enhanced my learning of course material in class	19 (63.33)	8 (26.66)	2 (6.6)	1 (3.3)	0
4	I read assigned readings prior to coming to class	16 (53.33)	10 (33.33)	2 (6.6)	2 (6.6)	0
5	Interactive, applied in-class activities greatly enhanced my learning	15 (50)	14 (46.66)	1 (3.3)	0	0
6	I participated and engaged in discussions in class	19 (63.33)	8 (26.66)	2 (6.6)	1 (3.3)	0
7	In-class discussions of course concepts with my peers greatly enhanced my learning	18 (60)	9 (30)	2 (6.6)	1 (3.3)	0
8	The activities during FC session improved my understanding of the key concepts	16 (53.33)	9 (30)	3 (10)	2 (6.6)	0
9	Time allotted for the discussion was adequate	20 (66.66)	6 (20)	3 (10)	1 (3.3)	0
10	Enjoyable way of learning	19 (63.33)	8 (26.66)	3 (10)	0	0
11	This method was more engaging and interesting in comparison to traditional class	23 (76.66)	6 (20)	1 (3.3)	0	0
12	Instructor was able to engage me in the FC activity	22 (73.33)	6 (20)	1 (3.3)	1 (3.3)	0
13	More such modules should be organized in the future	19 (63.33)	11 (36.66)	0	0	0

IV: DISCUSSION

In this study, we assessed the effectiveness of FC and perception of students regarding FC approach in teaching certain topics in pharmacology. Our FC design included active learning through solving clinical cases, interactions among students, and interactions with the facilitator. In our study, the mean posttest scores and the overall scores improved significantly in the flipped class model. Overall, the students viewed their learning experience positively, based on the results from the students' feedback toward flipped class model.

The results from this study demonstrate that students who were exposed to online modules using the flipped course performed better than the conventional teaching batch of students, which are consistent with the results of the previous studies.

In a study conducted by Nouri which examined students' perceptions of flipped classroom education among last-year university course in research methods, the results revealed that a large majority of the students had a positive attitude toward flipped classroom which strongly correlated to the perceptions of increased motivation, engagement, and effective learning. Low achievers significantly reported more positively as compared to high achievers with regard to attitudes toward the use of video as a learning tool, perceived increased learning, and perceived more effective learning.⁶ Our study also substantiated this.

V: CONCLUSION

Medical teaching with flipped classroom approach improved the student performance and learning experience effectively as compared to conventional teaching. The flipped classroom approach improved the students' performance and perceptions of the learning experience. Student response to the flipped classroom structure was largely positive, indicating it to be an approach worth pursuing in future years for advancement in medical education technologies.⁽⁶⁾

VI: BIBLIOGRAPHY.

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