

Student's Perception of Flipped Classroom Teaching Method in Andhra Medical College, Visakhapatnam

Dr Sunita Sreegiri¹, Dr. B Devi Madhavi², Dr Lakshmi Kumari³

¹(Associate Professor, Department of Community Medicine, Andhra Medical College/ NTR University of Health Sciences, India

²(Professor & Head, Department of Community Medicine, Andhra Medical College/ NTR University of Health Sciences, India)

³(Associate Professor, Department of Anatomy, Andhra Medical College/ / NTR University of Health Sciences, India)

Corresponding author: Dr Sunita Sreegiri

Abstract : Introduction: Higher education including medical education has been shifting towards more active and student-centric teaching strategies. Flipped class room method gives the student scope to learn the course content at home and utilise the class time in more interactive sessions. **Methodology:** A descriptive cross sectional study was conducted among 163 1st year MBBS students of Andhra Medical College to determine the medical students' perceptions of flipped classroom as a teaching tool. Students were exposed to flipped classroom method of teaching on two different occasions prior to the survey. A structured questionnaire on students' perception on flipped classroom technology was used. Responses were collected using a 5 point Likert scale ranging from strongly disagree to strongly agree. Scoring was given from 0 to 4. Data was analysed using Microsoft excel. **Results:** Majority of the students (53.98% and 25.76%) agreed that the flipped classroom is more engaging than traditional classroom. Videos and other online study material were found to be interesting by most of the students (46.62% agree and 30.67% strongly agree). There was a mixed response when asked about whether traditional teacher led lesson is more preferable as compared to a lesson video, as 24.53% disagreed, 28.22% were neutral and 27.6% agreed to it. **Conclusions:** The perception of the MBBS students is that flipped class room is a good teaching learning method. The student-centric approach and use of technology helps add value to student learning.

Keywords: Flipped Class room, medical education, teaching methods

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I. Introduction

Teaching and learning are dynamic complements of knowledge sharing at a time of increasingly rapid technological advancements.(1). Higher education including medical education has been shifting towards more active and student-centric teaching strategies (2). The flipped classroom is a pedagogical practice that delivers lecture content to students at home through electronic means such as online learning and uses class time for practical application activities (3). It creates a learning environment that provides students with a variety of means to study basic knowledge content as part of homework and preparation for class meetings; teachers then use class time more effectively for hands-on activities(1).

The flipped classroom provides scope for interactive teaching ie additional face-to-face interaction time with students in the classroom by minimizing the amount of direct instruction used in a traditional classroom setting (4) thus giving opportunity to the students to participate actively through discussions or problem solving.

Few studies have been conducted regarding effectiveness and introduction of flipped class in medical education in India (5,6,7). However this method is not being practiced regularly in all the medical colleges. In view of the MCI recommended curricular reforms there is an urgent need to understand the effectiveness and students' perception about newer teaching learning methods in medical education. This study was conducted to determine the medical students' perceptions of flipped classroom as a pedagogical tool. The rationale for choosing the first year MBBS students was to prepare them for adopting newer teaching learning methods and promote self directed learning

II. Methodology

Study design: A descriptive cross-sectional study was conducted among 1st year MBBS students of Andhra Medical College, Visakhapatnam in the month of November 2017. **Study subjects:** All the 1st MBBS students present on the day of conduct of study and willing to participate. 163 students out 200 were present and

participated in the study. Students were explained about flipped classroom as an innovative teaching method in medical education and the purpose of this survey. Students were exposed to flipped classroom method of teaching on two different occasions in their Anatomy classes prior to the survey. The study was conducted within one month of the conduct of flipped classes to avoid recall bias. Permission was taken from the Head of the department of Anatomy. Students were assured of confidentiality for giving unbiased opinion. **Study tool:** A structured questionnaire was used to obtain information on student's perception about flipped classroom. The questionnaire was validated by faculty who have undergone advanced training in medical education and was pretested among 20 students before administering to the study population. The questionnaire had fourteen items on various aspects of flipped classroom. Responses were collected using a 5 point Likert scale ranging from strongly disagree to strongly agree. Scoring was given from 0 to 4. Data was Analysed using MS Excel.

III. Results

A total of 163 students participated in the study. As per table no 1, 53.98% agreed to the question that flipped classroom is more engaging than traditional classroom and 25.76% strongly agreed. Majority (agree: 57.05% and strongly agree: 19.01%) perceived that it gives greater opportunities to communicate with each other. Videos and other online study material were found to be interesting by most of the students (46.62% agree and 30.67% strongly agree). There was mixed response regarding the pace at which different students in the class learn. One third of the students (31.39%) expressed that they would have the entire class move at the same pace although 26.38% of the students disagreed to this statement. About 67% of the students disagreed to the statement that 'they would not recommend this method of teaching learning to their friends'.

After experiencing the flipped class room teaching learning method 43.55% agreed and 20.24% strongly agreed to the statement that less time is spent on traditional method of learning ie self study. About 33.12% strongly disagreed and 49.69 disagreed to the statement that internet is not a good method of learning. Around 62% (agree 50.92% and strongly disagree 11.65%) expressed that they like taking up online tests and quizzes. are interesting and useful. There was a mixed response when asked about whether traditional teacher led lesson is more preferable as compared to a lesson video, as 24.53% disagreed, 28.22% were neutral and 27.6% agreed to it.

The bar chart shows that about half (49.07%) of the students agreed that they are more motivated to learn in flipped class room. And about half (51.53%) of them disagreed to the statement that flipped classroom is not contributing in improving their learning. Regarding the time to practice students differed in their opinion as almost one third (26.99%) agreed to the statement that flipped classroom gives less class time to practice whereas one third (27.63%)disagreed. Similar response was noted when asked about whether they would prefer flipped class rooms for all topics.

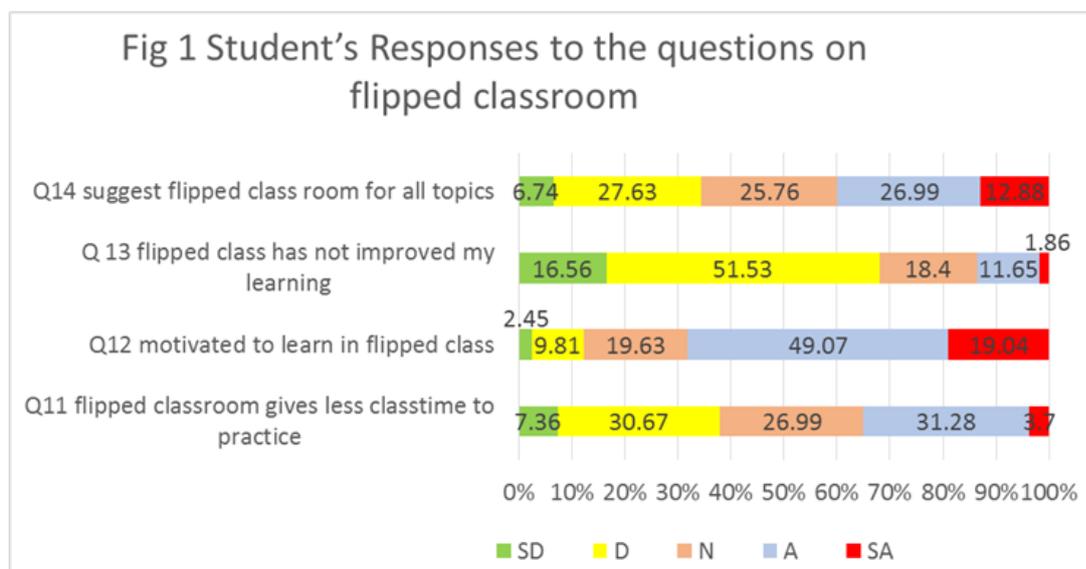
IV. Figures And Tables

Table no 1: Students' responses to the questions on flipped classroom.

QNo	Questions	SD(%)	D(%)	N(%)	A(%)	SA(%)
QNo 1	Flipped class is more engaging than traditional	4(2.45)	12(7.36)	17(10.42)	88(53.98)	42(25.76)
Q No2	Would not recommend flipped class to others	33(20.24)	77(47.23)	26(15.95)	26(15.95)	1(0.61)
Q No3	Flipped class gives greater opportunity to communicate with other students	3(1.84)	15(9.2)	21(12.88)	93(57.05)	31(19.01)
Q No4	Like watching lessons on videos	3(1.84)	16(9.81)	18(11.04)	76(46.62)	50(30.67)
Q No5	Have the entire class moving at the same pace	16(9.81)	43(26.38)	40(24.53)	51(31.29)	13(7.97)

Table no 2: Students' responses to the questions on flipped classroom.

Q.No	Questions	SD(%)	D(%)	N(%)	A(%)	SA(%)
Q No6	Less time is spent on traditional method of learning ie self study	7(4.29)	23(14.11)	29(17.79)	71(43.55)	33(20.24)
Q No7	Internet is not a good method of learning	54(33.12)	81(49.69)	16(9.81)	11(6.74)	1(0.61)
Q No8	Like taking up online tests and quizzes	6(3.68)	30(18.4)	25(15.33)	83(50.92)	19(11.65)
Q No9	Prefer a traditional teacher than a lesson video	21(12.88)	40(24.53)	46(28.22)	45(27.6)	11(6.74)
Q No10	Easy to pace myself successfully through the course	8(4.9)	23(14.11)	46(28.22)	76(46.62)	10(6.13)



V. Discussion

Medical education demands different pedagogical models as the curriculum includes a variety of subjects. Use of technology in the form of videos, case presentations and discussions etc do help in learning. Innovative teaching methods such as flipped classroom are being encouraged as it involves interactive learning. The flipped classroom teaching method differs from the traditional teaching. The current generation of medical students are millennials and their learning approach is quite different from traditional learning. They are more comfortable with technology and are interested in being involved in the learning process.

Majority of the students (80%) in the present study agreed or strongly agreed that flipped classroom method gives better opportunity to interact and communicate with teachers and other students in the class as well as it is more engaging. Study by Nouri reported that students expressed a positive attitude to flipped classroom (75%), agreed that it is easier and more effective to learn with the flipped classroom approach and that they feel more motivated as learners(2). In another study Zhao et al reported that nearly half (46%) of the respondents preferred or strongly preferred the flipped model where as 38% of the respondents preferred or strongly preferred the traditional model (8). Similarly other studies S K Gubbiyyapa et al (6), Veeramani et al (7), Morgan et al (9) found that Student satisfaction was very high and majority of the study subjects considered flipped classroom as effective teaching learning tool.

Use of Audio visual aids have always been effective in learning process especially in medical education. In this study 46.62% and 30.62% of the students respectively have agreed and strongly agreed that videos are interesting and they like watching lessons on videos. Approximately 60% of the students were also liking the online assignments. Visualising and watching the lessons on videos improves the understanding ability even though the traditional teachers are more relied upon for clarification as compared to listening to a virtual teacher. Majority (49.69% and 33,12%) disagreed to the statement that 'online or video assignments are not important'. Similar findings have been reported by other studies where students felt online videos are very valuable to their learning. (2, 7,8)

Students have different pace of learning. Some are slow learners where as some fast learners. Also different students have preferences in learning style such as Visual, Aural, read/write-Kinesthetic. In this study one third agreed that teaching method chosen by the faculty should address the needs of all types of students and the entire class should move in the same pace. Similar finding has been reported by Ramnanan et al (10) However 26.38% disagreed and 24.53% were neutral in their opinion in this study. Based on the experience of flipped class 46.62% of the students felt they could successfully pace themselves through the course. Learning the course content at home has some challenges. All the students do not have the same learning ability or may not be motivated or prepared for self learning. Further students may perceive the take-home content (class preparation) as less important than the in-class instruction. (1) Also it depends on the technology available at home.

Flipped classroom method allows the students to learn in their own pace. Fast learners may find it easier to cope up with the pace by going through the course material at home before commencement of the class and utilise the class time for interactive sessions and or discussions. For slow learners faculty can focus on key concepts and the topics which are difficult for students to understand.

Group dynamics play a huge role. The interplay of interpersonal and social skills can create or dissuade the anxiety depending upon the unique cohort of learners.(1). Therefore feedback from students regarding their understanding the course materials and in-class activity is very essential.

Medical education has become challenging in view of advancements in medical sciences and expansion of medical knowledge. This is the time for use of technology as the present students are proficient in using technology. After experiencing flipped class room teaching, majority (agree 43.55% and strongly agree 20.24%) felt that less time is spent on traditional method of learning ie self study. Students as well as instructors have to be prepared for experimenting novel approaches in learning. Flipped class room encourages self directed learning on part of learners, although some may initially feel too much of workload. At the same time instructors need to be trained as more preparation is needed to keep a hold on the students. Those who lack confidence in the new method may face challenges.

VI. Conclusion

The perception of the MBBS students is that flipped class room is a good teaching learning method. The student-centric approach creates an environment for interactive and flexible learning. Use of technology along with in-class group activity adds value to student learning and also addresses individual learning style and preference. Therefore this method can be adopted and incorporated in the medical colleges.

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