



LEARNING ATTITUDE OF FIRST YEAR MEDICAL STUDENTS - POWERPOINT VERSUS E – LEARNING.

Medical Education

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ABSTRACT

Background: Anatomy is one of the fundamental subjects in health sciences, and mastery of anatomy is essential for healthcare professionals and students to decode the human body's structure and function. Anatomy is most often considered diverse and complex subject to study. In this regard we studied the feedback from students about the effectiveness of prevailing teaching aids and methods so that the best teaching method can be adopted to improve academic performance of students. **Methods:** This study comprises a total 150 students of the 1st MBBS course who have completed the academic year 2023-24. Irrespective of the teacher and topic the students were asked to grade the teaching aids and methods that were used to learn anatomy. **Results:** Present study showed that PPT teaching is most preferable method for first year medical students when compared with the E-learning method. According to, (54.91%) students the PowerPoint Teaching method in the lecture hall is more impactful and then E-Learning. **Conclusion:** In this study, we concluded that, a separate teaching aid is considered, then the PowerPoint teaching method is most acceptable because of its simplicity and clarity to understand the concepts effectively. E-learning provides the ability for students to fit learning around their lifestyle.

KEYWORDS

Medical education, teaching aids, perception, Information and communication technologies

INTRODUCTION / BACKGROUND :-

Proficiency in medical subject-like anatomy is a difficult task for medical undergraduate students who often felt challenged when undertaking the vast number of reasons and complexity of the topics. The general perception, attitude, and behaviour of medical undergraduates influence the interest and overall subject performance.^(1,2) There have been numerous attempts to define learning, but basically learning is the cognitive process whereby an individual acquires the professional and ethical values, which leads to permanent changes in the process of acquiring new knowledge, skills, insights, attitudes, and behaviour of the learner.^(3,4)

Teaching is an art done in a professional manner to bring a positive change in the learner; imparting knowledge, skills, or values to students.^(4,5) Teachers challenge the three domains of cognitive, affective and the psychomotor domains of learners. The classroom is a dynamic environment, bringing together students from different backgrounds with various abilities and personalities⁽⁶⁾.

Now, in this advent 21st informative era, technology plays a crucial role in daily routine life. Uses of information and communication technologies (ICT) open up a new diverse timeline to the learning process in the form of e-learning. Acquiring a modern source of knowledge in the form of information and communication technologies (ICT) in teaching and learning processes increases the quality and efficiency of education.^(7,8,9) In classroom teaching, learning with audio-visual aids has a great impact on students. Technological advancements have revolutionized, use of electronic presentations has become very frequent.

E-learning comprises networked or web-based learning. The letter 'E' stands for 'electronic' it will incorporate with ICT, online learning and virtual learning which can include computers, laptops, tablets, mobiles, interactive whiteboards, educational software's, online platforms, internet connectivity, and multimedia contents. Now a days after pandemic E-learning is an entirely new learning environment for students that increases critical thinking, research, and evaluation skills^(9,10). Also, students are much more independent than in the traditional setting. This requires that they be highly motivated and committed to teaching with less social interaction with peers or an instructor⁽¹¹⁾. Students in online courses tend to do as well as those in classrooms, but there is a higher incidence of withdrawal or incomplete grades.

This study was conducted to know first year MBBS students perspectives, impact and learning attitude in comparison with PPT teaching learning and E-learning method in anatomical science.

METHODS:-

A cross-sectional study design was performed on 1st year MBBS students who have completed their academic first year of MBBS course. The study was conducted in the Department of Anatomy, DRGMC Amravati. A total 150 students voluntarily participated in this study.

Data collection was executed through the utilization of standardized and validated questionnaires from MEU which encompassed sections on the impact of PPT teaching learning method and E - learning aids on the learning attitude of medical students. The participant students were asked to grade the teaching aids and methods that were used to learn anatomy for the period of academic year. (August 2023 to May 2024).

A structured questionnaire was evaluated using a 4-point Likert scale within the 12 parameters covering the different aspects of teaching and learning aids in the form of opinions by the medical students. Irrespective of the teacher and topic the students were asked to grade the above-mentioned teaching and learning methods used to study anatomy. While an open-ended question was included to allow students to suggest any other teaching method that would improve their academic performance. A 4-point Likert scale was graded as per Table no.1. The questionnaire was assimilated and analysed to derive the result.

Table No. 01: 4- Point Likert Scale Grading

Grade	Category	Level of agreement
A	Excellent	Most Helpful To Understand, Remember and Recall
B	Good	Helpful To Understand, Remember and Recall
C	Average	Only Helpful To Understand
D	Poor	Not Effective

The collected data was subjected to quantitative data analysis using an updated version of Microsoft Excel and SPSS version 20. Frequencies and percentages pertaining to both learning systems and the perceptions held by the students were presented using tables and pie charts.

RESULTS

In this study, students demarcate grades to each parameter of the questioner, the Table no. 2 showing the percentage of grades for power point teaching. Overall students are friendly with PowerPoint teaching, and they keep their attention while learning through PPT in the lecture hall. 67.34 % students put up an A grade for Summarization,

according to 66.66 % students PPT teaching method Clear all concepts, and 63.34 % students give an A grade for simple and clear to understand.

Table No. 02: Percentage of Grades – Power Point Teaching

Q. No.	Questions	Power point Teaching %			
		A - Grade	B - Grade	C - Grade	A - Grade
1.	Well organized topic	56.66	30	12	1.34
2.	Simple and clear to understand	63.34	24.33	10.33	02
3.	Generate interest & curiosity	38.66	33.66	21.34	6.34
4.	Content focused Teaching	58	30	10.34	1.66
5.	Clear all concepts	66.66	24	06	3.34
6.	Better demonstrations of clinical conditions	46	38	11.34	4.66
7.	Interactive and Hold Attention	60.34	25.66	08	06
8.	Enhances visual quality of text and figures	37.34	39.66	15.66	7.34
9.	Summarization	67.34	23.34	8.66	0.66
10.	Best mode to recall important points	60.66	24.66	11.34	3.34
11.	Better doubt solving	51.34	34	10	4.66
12.	Mastery Learning	52.66	30.34	12.66	4.34

Table No. 03: Percentage of Grades: E-Learning

Q. No.	Questions	E - Learning %			
		A - Grade	B - Grade	C - Grade	D - Grade
1.	Well organized topic	44.34	38	15	2.66
2.	Simple and clear to understand	36.66	43.34	18.66	3.34
3.	Generate interest & curiosity	61.34	25.33	10	3.33
4.	Content focused Teaching	42	38	9.34	10.66
5.	Clear all concepts	33.34	44.66	16.66	5.34
6.	Better demonstrations of clinical conditions	54	30.34	13.66	02
7.	Interactive and Hold attention	39.66	35	16	9.34
8.	Enhances visual quality of text and figures	62.66	28.34	6.66	2.34
9.	Summarization	32.66	41.34	19.34	6.66
10.	Best mode to recall important points	39.34	42	15	3.66
11.	Better doubt solving	38.66	38.34	18.34	4.66
12.	Mastery Learning	47.34	36	14.66	02

Table no.3 showing the percentage of grades for E-learning. As a handy tool for learning, most of the students uses mobiles, tabs, and laptops for self-studying topics, for that they always Google their difficulties and find solutions through Wikipedia, YouTube, Chat GPT etc. According to 61.33 % of students E-Learning generates interest and curiosity, 54 % students E-learning as a better demonstration of clinical condition, for enhancing the visual quality of text and figures 62.66% of students demarcate an A grade.

Table No. 04: Comparison of PPT Learning with E-Learning

Q. No.	Questions	Power Point - PPT %	E - Learning %
1.	Well organized topic	56.66	44.34
2.	Simple and clear to understand	63.34	36.66
3.	Generate interest & curiosity	38.66	61.34
4.	Content focused Teaching	58	42
5.	Clear all concepts	66.66	33.34
6.	Better demonstrations of clinical conditions	46	54
7.	Interactive and Hold attention	60.34	39.66
8.	Enhances visual quality of text and figures	37.34	62.66
9.	Summarization	67.34	32.66

10.	Best mode to recall important points	60.66	39.34
11.	Better doubt solving	51.34	48.66
12.	Mastery Learning	52.66	47.34

Table no. 4 shows comparison between the above two teaching and learning aids.

According to 56.66 % students PowerPoint teaching is topic is well organized, 63.34% PPT is Simple and clear to understand, 66.66 % Clear all concepts 60.34% Interactive and Hold attention, 67.34% Summarization is better than E learning , Best mode to recall important points 60.66%, 52.66% Mastery Learning

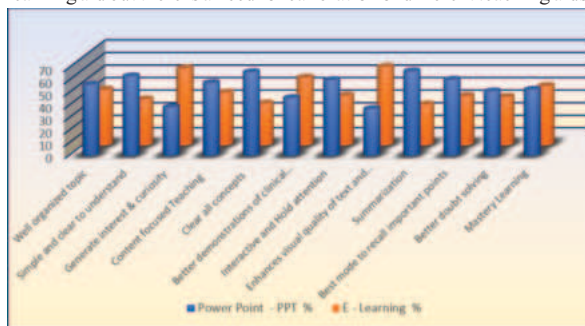
As per 61.34 % of students, E-Learning was able to generate interest and curiosity, 54 % students E-Learning is a better tool for demonstrations of clinical conditions, while 62.66 % student remarks it enhancing visual quality of text and figures.

Above table showed as per students grading and perspective, the PowerPoint teaching method in the classroom bits E-learning method.

DISCUSSION

Teaching is the process of transmitting skills, knowledge, experience, and values to a learner, and learning is the acquisition of knowledge or skills through study, experience, or being taught.^(5,12) In the medical profession the teaching and learning process is crucial because the curriculum in medical education is updating continuously and teachers role as well as learners needs are being redefined from time to time⁽⁵⁾. A medical teacher has to keep pace with the ever changing needs of learners and changing trends in education. The way we teach is influenced by the way we perceive learning and learners attitudes⁽¹³⁾. For effective teaching, learner's needs are to be considered. In this study we tried to find out what learners need by taking students feedback in the 1st year medical students about their learning opinion in the anatomy department.

Teaching is an art developed by a teacher for a student for transferring knowledge and experience with the different aids that portray impact. Blackboard teaching aid is one of the golden methods to deliver impactful didactic lectures⁽⁵⁾. Now a days routinely used audio-visual techniques is PowerPoint teaching. PPT promotes better organization and understanding of the lecture topics⁽⁹⁾. Now, after the pandemic the learning needs of students dramatically change. Students enter a new informative era of information and communication technologies (ICT), with unlimited access to Internet information and study material easily available on their fingertips. E-learning is an impactful self-learning aid but there is a need for calibration of different teaching aids.



Graph No. 01: Comparison of PPT Learning with E-Learning

In this study, Graph No. 01 showed the comparison between PPT learning with E-Learning, as per students' opinions both methods are equally useful for content-focused teaching, better doubt solving, and mastery learning.

Present study results compared with previous literatures, Banerjee et.al.⁽¹⁴⁾, Novelli and fernandes et.al.⁽¹⁵⁾, Petimani and adake et.al.⁽⁴⁾, Vikas Seth and prerna upadhyaya et.al.⁽⁷⁾, Bamne and bamne et.al.⁽⁹⁾, they studied chalkboard teaching method verses PPT teaching method, in which they demarcate the following points.

- With PPT, the lectures are well organized and provides a better quality of text and diagrams, and it avoids the issue of dirty blackboards and faulty chalks⁽⁹⁾.
- PPT is more interesting because it can incorporate animations, pictures, graphs, and images, sequences of images and videos⁽⁹⁾.

- Drawback of PPT method is, it needs the lecture hall to be darkened and any power failure interrupts the lecture.⁽⁹⁾

E-learning is the new concept that was coined after the pandemic therefore, there is least data available to compare. Amin zand and Mastery Farhani et.al.⁽¹⁰⁾, discussed the Role of E-learning in teaching Anatomical Sciences, and remarks that using these skills in the fields in anatomical sciences is effective and economic. E-learning was also discussed by A. Pauline chitra and M. Antony Raj⁽¹⁰⁾, in these studies they enlightens the differences between E-Learning and M-Learning, types of E-Learning, with advantages and disadvantages of E-Learning.

CONCLUSION

Recent medical curriculum, students are bound to a time-framed short duration, which had a profound effect on understanding and learning the medical profession. The present study results PowerPoint teaching learning method is most acceptable by medical students because of its Simple and clear to understand the concepts effectively, Interactive and Hold attention, Clear all concepts and Summarization if a separate teaching aid is considered. E-learning provides the ability for students to fit with learning around their lifestyle it Generate interest & curiosity and Enhances visual quality of text and figures. By identifying their learning needs if these two teaching learning aids combines deficiency of one teaching aid is compensated by the other. Thus there is need to improve student engagement and outcomes as well as their problem-solving skills to learn effectively through meaningful activities in order to perform at their best.

List of Abbreviations Used:-

PPT – Power point Teaching

ICT- Information and communication technologies

E-Learning – Electronic Learning

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