Comparison of the Traditional Chalkboard Lecture System with the Powerpoint Presentation: as a Teaching Technique for Medical Students

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Introduction: The emerging technologies made by day changing the techniques of teaching medical education. The teaching technique has changed since the last decade from the old traditional technique of chalk and talk (CNT) to a newer technique of Power-point presentation (PPT) to the video classrooms converting the whole traditional environment of the classrooms. This paper aims to access the perception of the medical students about these two instructional methods. Materials and methods: In this study cross-sectional descriptive survey was used. Medical students were selected through non-probability convenient sampling. The data were collected using a questionnaire-based survey about their views and perception of two lecture delivery methods, viz., PPT presentation, and using a chalkboard. For each of the two methods, the students were asked to rank twelve comments on a four-point scale: strongly agree, agree, disagree, or strongly disagree. The data was analyzed using SPSS version 16 and the results expressed as proportions. Results: In our study, more than 97% of our study respondents emphasized the value of chalk and talk and declared it a more effective and useful teaching tool in their learning experience than PowerPoint (86%) and recommended it for teaching. Conclusion: Both CNT, as well as PPT, are effective methods for medical education and both can be used in combination for the effective delivery of classroom sessions.

Keywords: Teaching methods; medical education; classroom techniques.

Introduction
Lectures have been the most common form of teaching and learning since ancient times.¹ Although discussion methods in small groups appear to be a superior method of attaining higher-level intellectual learning.² During the past few decades, the classrooms’ presentation methods have changed from the traditional CNT to the modern technique of PPT. The most accepted criterion for measuring good teaching technique, however, is the amount of student learning.

Students often have little expertise in knowing if the technique selected by an individual instructor was the best teaching technique or just ‘a technique’ or simply the technique with which the teacher was most comfortable.³

During a lecture, both the visual and auditory senses are used to absorb information and here assistance in the form of the visual aid is useful.⁴ A chalkboard is uniquely effective as a medium of classroom instruction and has been used commonly in lectures, while the use of transparencies with an overhead projector (TOHP) is also popular.⁵

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In traditional classrooms, a teacher’s basic instructional tools for displaying information are chalkboards, multipurpose boards, pegboards, bulletin boards, and flip charts. To project instructional materials, overhead transparencies displayed via an overhead projector are still a commonly used classroom presentation methods. Recently, electronic presentations have become common, and PPT is now the most popular instructional aid.

The impact of technology has led to the increased use of computers for presenting information in many of today’s classrooms. PPT hailed as an easy-to-use means of creating professional presentations teachers for creating classroom presentations. A study found PPT to be one of the most widely used software programs in both an area educator preparation program and local public schools. It is seen that “more than 400 million copies of the program are currently in circulation, and somewhere between 20 and 30 million PPT-based presentations are given around the globe each day”.

Various studies have been conducted to assess the effectiveness of lectures using PPT or other such media in comparison to lectures using the chalkboard, or the use of TOHP. According to one study, traditional classes with blackboard presentation were the most favoured by students from biomedicine and medicine courses.

Recently, electronic presentations have become common, and PPT is now the most popular package used out of all electronic presentations.

Therefore, the present study was aimed, to assess the student’s perceptions of the impact of PPT presentations in lectures compared with the traditional CNT.

**Materials and Methods**

This is a cross-sectional descriptive study. Medical students were selected through non-probability convenient sampling. The data were collected during 2017 from the undergraduate medical students at Gauhati Medical College and hospital using a questionnaire-based survey about their views and perception of two lecture delivery methods, viz., PPT presentation, and using a chalkboard. For each of the two methods, the students were asked to rank twelve comments on a four-point scale: strongly agree, agree, disagree, or strongly disagree. The data was analyzed using SPSS version 16 and the results expressed as proportions. As this study is on classroom technique and has not revealed any of the participants’ identity, so ethical clearance from the ethics committee is not required. However, informed consent was taken before the collection of the data.

**Results**

The distribution of perception of undergraduate medical students regarding the method of the CNT is narrated in Table 1.

**Table 1 Distribution of perception of UG medical students regarding the method of chalk and talk**

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Statements regarding perception</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>I understand the lecture better when the teacher uses this technique</td>
<td>26</td>
<td>71</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>I feel the student interaction is better with the teacher</td>
<td>33</td>
<td>53</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Eye contact between teacher and student is less</td>
<td>14</td>
<td>41</td>
<td>36</td>
<td>9</td>
</tr>
<tr>
<td>4.</td>
<td>The lecture advances the understanding</td>
<td>20</td>
<td>67</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>This technique helps me to concentrate and remember better</td>
<td>38</td>
<td>50</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>The quality and quantity of my lecture notes can’t be maintained</td>
<td>12</td>
<td>48</td>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>
The delivery of lecture is interesting
The content of the lecture informative
The lecture is audible
The lecture content was well organized
The teacher remains more professional
The teacher needs more preparation for the class

Table 2 Perception of undergraduate medical students regarding PPT

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Statements regarding perception</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I understand the lecture better when the teacher uses this technique</td>
<td>30 56 12 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I feel the student interaction is better with the teacher</td>
<td>29 45 24 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Eye contact between teacher and student is less</td>
<td>14 47 34 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The lecture advances the understanding</td>
<td>19 65 16 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>This technique helps me to concentrate and remember better</td>
<td>30 46 21 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The quality and quantity of my lecture notes can’t be maintained</td>
<td>12 48 37 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The delivery of lecture is interesting</td>
<td>20 58 22 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The content of the lecture informative</td>
<td>20 71 7 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The lecture is audible</td>
<td>24 64 12 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The lecture content was well organized</td>
<td>35 50 10 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>The teacher remains more professional</td>
<td>27 52 20 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>The teacher needs more preparation for the class</td>
<td>31 42 23 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the present study, 97% of the participants emphasized the value of chalk and talk and declared it a more effective and useful teaching tool in their learning experience than PowerPoint (86%) and recommended it for teaching.
Discussion

Teaching is an art. This study highlights the fact that the favourites technique of lecture delivery for students by different faculties in the classroom can vary so much within the same college.

Different technologies are available in classrooms for teaching in the present day scenario. The use of better teaching technique aid allows students to understand better. This also allows more time for interaction and further understanding. Use of technology can be a very beneficial and time-saving tool for all teachers.

An evaluation by the students can provide the teacher with the best user feedback regarding the best teaching method.

In the present study, medical students favoured a combination of teaching aids rather than single teaching support. Regarding medical students’ preference, the order of priority of combined teaching aids they have opted was PPT+CNT using blackboard.

This preference may probably be because the inherent deficiency of each method is compensated by the other. While CNT using blackboard teaching is deficient in showing the three dimensional (3-D) diagrams, animated videos and real-time sounds. However, the same can be demonstrated using a PPT. Furthermore, PPTs take less time to present the same information as compared to CNT using blackboard teaching. CNT teaching allows the students to take down the notes and diagrams that are difficult with PPTs as there is a tendency to quickly deliver the lecture.13

The current results agree with Chaudhary R et al.14 Here the author revealed that the majority of the students (67.1%) favoured the combined teaching aids. With the CNT using blackboard, the student pointed the drawback, is that it takes time to draw a labelled diagram on the board and during that time teacher’s eye contact with the students get interrupted.

SN Baxi et al.,15 in their study, revealed that an equal number of students preferred CNT and multimedia-based lectures. Seth et al.,16 also compared the preference for teaching aid between medical students versus dental students. The medical students have preferred PPT whereas the dental students preferred the Chalkboard in their study.

Some participating students opined that the teaching lecture’s effectiveness depends upon the teacher, regardless of the teaching aid used. What is fundamentally important in university teaching is not the quality of the technology but the quality of the teacher as revealed in a study agree the current results. Besides, a good teacher knows to start at a basic point of the course, which students can understand and then lead them gradually through the new and more difficult points.18

Conclusion

In conclusion, combined teaching support is considered most satisfying teaching support because one aid’s inherent deficiency is compensated by the other. If single teaching assistances are to consider, then the blackboard teaching aid is the most pleased by the undergraduate medical students. They can follow the teacher well with a deep understanding of the concept effectively.

The present study and the previous studies do not bring out the superiority of any single support system of the teaching method. It seems that with the hands of a trained teacher any teaching technique would be suitable and effective. This highlights the need for formal training of the teachers in teaching in the classroom to develop a perfect skill to motivate students.

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Conflict of Interest: None declared.

References

3. Hithesh Mishra, Vipin Kumar, Pankaj Kumar. Comparison of different teaching methodologies in a medical college in North India. IJBAMR 2013 March;6(2):464-469.