Are PowerPoint presentations fulfilling its purpose?

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Nowadays, most lecture classes are conducted using PowerPoint presentations, assuming that incorporation of computer technologies would enhance student learning and sustain interest in the topic. But is it fulfilling its purpose? Therefore, to understand the student perspective on this issue, 72 students of II MBBS were given a questionnaire, wherein they were asked to choose as to which method of presentation is the preferred one for the various given attributes. Chalk board (CB) and Power Point (PP) were the two methods that were compared. According to the students, clarity of words, illustrations, real pictures and summarizations were some of the attributes best dealt with on PP, whereas, explanations, clarity of concepts and learning to draw diagrams are better done on a CB. Majority of students feel that both CB and PP should be used simultaneously in all classes. An appropriate and discrete mix of both PP and CB would be beneficial for enhancing student learning and achievement.
Key Words: Chalk board, PowerPoint

Introduction

Lectures still remain the most common mode of instruction in higher education. Students learn from lectures by listening, observing, summarizing and note taking (Brown & Manogue, 2001). Sometimes understanding is achieved during a lecture and sometimes it emerges when students pour over their notes after a lecture. Lectures can be supplemented with audiovisual aids for better illustrations, clarity and learning (Brown & Manogue, 2001; Brill & Galloway, 2007; Bransford *et al.*, 2001; Lopresti, 2004). PowerPoint presentations were introduced about 10 years back in our institution. It was a novelty initially with very few takers. As teachers gained confidence with the new technology and facilities for such presentations became available for every classroom, regular use became a feature, and 99.9% of the teachers now use it regularly, leaving chalk boards and over heard projectors, a rarity inside classrooms. With PowerPoint, people feel that they can get away with practicing less, as they have words in front of them. It has thus, slowly and steadily become a method to dissipate large number of facts, interspersed with illustrations and animations, all packed in 45 minutes of lecture time. PowerPoint's design and expected use, adds to the didactic nature of classroom teaching where there is already too much of: teacher-centred (Michelle, 2003), pre planned, lockstep delivery of information, given primarily through words (Mason & Hlynka, 1998). Now the essential question is, 'Is it fulfilling its purpose?'.

Visual images are powerful in attracting attention. But is this attention sustained all through the lecture? What does the student think about the advantages of PowerPoint presentations over the traditional chalk board lectures? How does the student react to these continuous PowerPoint presentations, class after class? PowerPoint can be a powerful classroom tool, but is it coming in the way of learning? Therefore, this study was conducted to understand a student's perspective and their choice, as to whether they prefer PowerPoint presentations or chalk boards for their lecture classes.

Method

A questionnaire was prepared and distributed to all students of II MBBS

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course consisting of 72 students. Some questions were yes/no type and the others were to tick the preferred method of lecture presentations for each of the given attributes. The two methods of lecture presentations compared were, the traditional chalk board (CB) with the Power Point (PP).

Results

All students answered the questionnaire, though all questions were not answered by all students. None of the questions had a 100% affirmative response. Majority (92%) of the students felt that both PP and CB should be used in a single class and that if teachers were to choose between CB and PP, they should do so based on the topic of the lecture (98%), and not based on better technology. The potential to leave a large portion of the lecture content on the chalk board helps to correlate between facts and helps to give a better understanding of the lecture (67%). Attending a lecture helps to learn (91%) and to prepare for examinations (90%). Only a minority of students (29%) felt that PP uses advanced technology and therefore should be the method of choice for delivering lectures. Learning different concepts and how to present an answer in examinations are some of the reasons for attending lectures. 'There is no difference between PP and reading text books', 'too many slides are packed in a 60 minute class', 'PP should be used only for showing illustrations/original pictures' and 'CB for teaching theory' are some of the statements received when students were asked to give general comments about their classes. Only 40% of students regularly take down notes, and that too only the important points. The preferred choices between the two methods based on various attributes are given in Table 1.

Table 1. Preferred choices of CB/PP for various attributes

Attributes	Chalk board (CB) (%of responses)	PowerPoint (PP) (%of responses)
Flow of thought better	71	29
Stress on important points	44	56
Better Summarization	20	80
Better Explanations	80	20
Large number of facts can be given	16	84
Problem solving better	57	43
Clarity of words	27	73
Clarity of concepts	61	39
Note taking is easier	49	51
Copying diagrams easier	92	8

Discussion

Many topics in medicine rely heavily on illustrations and other visual aids for proper understanding. Therefore certain descriptive answers require presence of proper illustrations/diagrams for better grades. One of the biggest disadvantages of PP as observed in this survey is that students are not able to copy the diagrams/illustrations shown on the slides. On the other hand a CB lecture allows the student to follow the hands of the teacher and copy the diagrams and conceptualize the information. Structures and procedures that are linked through visualization are more likely to be retained in the long term memory (Brown & Manogue, 2001). Lecturers using PP for most of their lectures should take time to use CB for illustration/diagrams even though it is presented in the PP. Even the best of diagrams on PP cannot be copied. Whereas, any diagram/illustration on a CB can be copied, and it is this process that helps the student to learn as well as to give proper illustrations in their descriptive answers during examinations.

A teacher's pronunciation, loudness and accent may affect clarity of words. Most PP presentations have important parts of lectures on its script; probably that is why 73% of students said that clarity of words is better with PP. Other aspects where PP scored better were for its efficiency in summarizations and ability to dispense large number of facts. Only important points were noted down by most students during lectures. Research cited by Mckeachie (1986) shows that students who take down notes remember material better than the control group not taking notes, even though the note takers turned in their notes immediately after the class. Therefore it is the process of note taking that is most important. There was no perceptible difference in preferences as far as note taking was concerned.

Explaining is a key skill while lecturing and it entails creating connections between facts and concepts in the mind of the learner, which helps him to understand the problem at hand. A series of statements/processes that are understood in relation to each other is how an explanation unfolds and a teacher through a series of statements written/diagrams drawn, sequentially, tries to explain a process/procedure on a chalkboard (Brown & Manogue, 2001). The student perceives this unfolding in a sequential manner and thereby it impinges on his mind. All sections of the explanation can be seen on the chalkboard at the same time. This may not be the case with a PP presentation, where if the student didn't get a particular point when the slide was up, he is left foundering. This can be problematic if later points of the lecture depend on understanding earlier points (Tom, 1997). Probably that is why 80% students have opted for CB as the preferred method for understanding explanations. The ability to increase clarity, develop and sustain interest in the subject (Crook, 2002), show pictures / illustrations/animations as an explanatory device and to reinforce main points of lectures are some of the primary purposes of using visual aids (Brown & Manogue, 2001). Therefore PP should be used for only these purposes during a lecture. The effectiveness of a particular medium depends not so much upon the medium per se, but on how it is used. The media do not influence student achievement any more than the 'truck that delivers our groceries' causes changes in our nutrition (Clarke, 1993). Thus, though technology has been recognized as having a great potential to enhance student achievement, this purpose is achieved only if it is used appropriately (Bransford *et al*., 2001). Good teaching is time consuming, labour intensive and requires good planning (Ludmerer, 2004).

Students in majority feel that both PP and CB should be used in all classes. PP to be used, preferably, only for illustrations that are not possible on CB, for highlighting important points, special situations where large number of facts are to be given and for summarizations. Technology used simply for the sake of technology may be flashy, but it is most likely pedagogically less useful (Michelle, 2003). Use this technology to incorporate 'active learning, student centred learning, (buzz words in educational departments)', into your lectures (Michelle, 2003). CB teaching still finds enough takers among students and as teachers we should protect it from extinction. Students can and do learn from teachers who use nothing but a chalkboard or an over head projector in their classes (Michelle, 2003).

Conclusion

Lecturing using different methods are stable phenomena. In practice there are a rich variety of approaches within each method and within each method there is potential for both competent and incompetent teaching. Emphasize on student learning rather than on the quality of the presentation. Use PP to augment rather than to deliver your lecture. There need to be an appropriate and discrete mix of both PP and CB teaching in the classroom for optimum benefit to the students.

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