
SHORT COMMUNICATION

Perception and Preferences of Undergraduate Medical Students Regarding the Use of Contemporary Teaching Aids at Dow International Medical College, Karachi

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ABSTRACT

In this study, perception and preferences of the medical students' studying at Dow International Medical College have been described about the use of different teaching aids.

Methods: Cross sectional survey was conducted on a stratified random sample of 200 undergraduate medical students

during the month of October 2010 at Dow International Medical College, Karachi, Pakistan.

Results: 80% of the students responded to the questions asked. Over all 40% of the students chose PowerPoint presentations as a reliable mode of teaching and favoured it as interesting and interactive teaching aid over Problem Based Learning (28.8%), Audio visual Aid (18.6%) and White Board (12%). They believe that PowerPoint provides a better learning experience as compared to other teaching tools. Projectors as a teaching tool was rejected by the students.

Conclusion: This article serves as a source of valuable information for the faculty members. Students have chosen PowerPoint presentations as the best teaching aid and have preferred the integration of different teaching tools for better understanding. Teachers will be able to use this information to develop better understanding about the subject matter among students by considering their learning style preferences. It will also facilitate them in developing interest and active participation of students in the classroom.

INTRODUCTION

The primary mode of delivery has been shifted to more students centered approach to deliver the core knowledge with sound concepts of the subject.¹ The learning capabilities and learning styles of students vary which can be improved by providing contextual opportunities to the students. Different learning strategies can attract the active participation of the learners,² which enhance their understanding and learning of the subject.³ The faculty members must have thorough knowledge of the subject matter along with awareness of the learners' characteristics and learning styles preferences to be effective.⁴ Learning style describes the manner and

environment of information delivery, which enables the learner to perceive, process, store and recall the information efficiently and effectively.⁵ More than 70 different learning styles have been identified which emphasize the various characteristics of the learner's preference. It includes style of processing the information and cognitive personality style. Learning can be through cognitive, affective and psychomotor domains. Students have shown to grasp new knowledge by the help of visual, auditory and tactile sensory modalities.⁶ The study was designed to determine the perception and preferences of the undergraduate medical students' and about the use of contemporary teaching aids.

MATERIAL AND METHODS

In the present study, 200 undergraduate medical students were asked to fill a questionnaire which was designed carefully after literature review and some of the questions were adapted from similar studies.¹³ Statistical Package for the Social Sciences (SPSS version 17.0) was used to analyze the data using descriptive statistics. An informed consent was obtained from every student and confidentiality was assured.

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RESULTS AND DISCUSSION

A stratified random sample of 200 undergraduate medical students was taken out of which 100 were males and 100 were females. At the time of study, 25% students were studying in first year, 40% in second year and 35% in third year of their medical education. Twenty percent students were 19 years old, 25% were 20 years old, 20% were 21 years old whereas 35% were 22 years old.

Table 1 represents the perception and preferences of the undergraduate medical students' towards different teaching aids.

Thirty seven percent students favored PowerPoint presentations whereas 26% and 17% considered White Board (WB) and Case Based Learning (CBL) respectively as a reliable teaching tool. 42% students considered that PowerPoint presentations develop the ability to understand the topic better while 32% and 16% students think that Case Based Learning and audio visual aids respectively can help them develop the ability to understand better. 44% students agreed that PowerPoint presentations provides a better learning experience as compared to Case Based Learning 28% and audio visual aids 21% and white board teaching 11%. 33% students gave overall preference to Multimedia / PowerPoint presentations. 26% preferred PBL, 24% preferred audio visual aids and 16% students preferred white board teaching. Multimedia / PowerPoint presentations teaching were also preferred as an interesting, interactive type of teaching aid by 44% students. 32% students thought PBL to be more interesting and interactive while 24% opted for audio visual aids and 12 % for WB teaching. Students rejected the teaching by means of Overhead projector. Only one student considered OHP as the preferred mode of teaching and favored it as a reliable teaching aid that provides a better learning experience.

Students need to memorize number of facts but developing concepts is fundamental to the understanding of medical sciences. The process of understanding involves the ability to assimilate and recall the thoughts, ideas and knowledge about a particular subject matter. It also includes predicting the behavior of body systems and able to explain responses to specific stimuli.⁷ Students develop concepts and acquire facts through lectures and textbooks. Several different teaching methodologies can be employed; each has its advantages and disadvantages.⁸ Lecture is used to deliver information to larger masses but it is usually a one-way communication and involves minimal engagement of the students. It takes active involvement of the student with the subject matter to develop understanding that is mostly not achieved in the lecture halls.⁷

Chaudhary et al.,⁹ have mentioned in their study that students favored blackboard (BB) teaching as a better visual teaching aid instead of transparencies on OHP. The biggest disadvantage in BB teaching is that the complex diagrams are difficult to draw and time consuming and requires a lot of drawing skills on part of teacher. It is note worthy that while drawing a diagram; teacher's eye contact is also broken with students. Similar problems are encountered with the Whiteboard as well. In our study too, only few students favored WB teaching (12%) highlighting the same problems whereas OHP (0.6%) has not been accepted by the students as a tool for modern teaching.

Understanding the merits and demerits of using PowerPoint as a teaching aid is important academically as well as practically. Rocklin¹⁰ proposed that PowerPoint can facilitate teachers to "help their students learn". Over all 40% of the students chose PowerPoint presentations to be a reliable mode of teaching and is in agreement with the findings of Rocklin¹⁰ who favored it as interesting and interactive teaching aid over PBL (28.8%), Audio visual Aid (18.6%) and White Board (12%).

Table 1: Perception and preferences of the undergraduate medical students' towards different teaching aids

Questions asked	Frequency of responses obtained from the students				
	WB [*]	OHP [§]	PP [□]	AVA [▣]	PBL [▣]
Which tool is reliable?	34	2	74	38	52
Which mode develops the ability to understand the topic better?	20	0	84	32	64
Which mode provides better learning experience?	22	2	88	32	56
I prefer...	32	2	66	48	52
Which is more interesting and interactive teaching aid?	12	0	88	36	64

*White Board, § Over Head Projector, □ PowerPoint Presentations, ▣Audio Visual Aid, Problem Based Learning

Several studies have shown that students consider video based demonstrations as an effective learning tool¹¹ and the role of PBL in actively involving the students in learning process is identified in several studies as well.¹²⁻¹³ Studies show that students have achieved higher scores in undergraduate courses when teaching style was designed according to their learning style preferences.¹⁴ Teachers, thus, will be able to use this information to develop better understanding of the subject matter among students by considering their learning style preference.

REFERENCES

- 1 Barr RB, Tagg J. A new paradigm for undergraduate education. *Change* 1995; 27:13-25.
- 2 Rao S, DiCarlo S. Active learning of respiratory physiology improves performance on respiratory physiology examinations. *Adv Physiol Educ* 2001; 25:127-33.
- 3 Gudmundsdottir S, Shulman L. Pedagogical content knowledge in social studies. *Scand J Educ Res* 1987; 31:59-70.
- 4 Tennyson R. An instructional strategy planning model to improve learning and cognition. *Computers in Human Behaviour* 1988; 4:13-22.
- 5 James WB, Gardner DL. Learning styles; implication for distance learning. *New Dir Adult Contin Educ* 1995; 67:19-32.
- 6 Fleming ND. I'm different; not dumb. Modes of presentation (VARK) in the tertiary classroom. In Zelmer, A, (Ed) *Research and Development in Higher Education*, Proceedings of the 1995 Annual Conference of the Higher Education and Research Development Society of Australasia. HERDSA 1995; 18: pp308-313.
- 7 Shefton A. International workshop: modern approaches to teaching and learning physiology. *Advan Physiol Educ* 2001; 25:64-71.
- 8 McKeachie WJ. *Teaching tips: A guidebook for the beginning college teacher*. 7th ed. Lexington, MA, US: DC Heath 1978.
- 9 Chaudhary R, Dullo P, Gupta U. Attitude of 1st MBBS medical students about two different visual aids in physiology lectures. *Pak J Physiol* 2009; 5:16-9.
- 10 Rocklin T. PowerPoint is not Evil. The National Teaching and Learning Forum. [Cited] Available from URL <http://www.nhf.com/html/sf/motevilhtm>
- 11 Ivers K, Baron A. Teaching telecommunications: A comparison between video and computer based instruction. Educational Resource Information Center, (ERIC) ED 378 963 from the angle of assessment Review of Educational Research 1994; 75:27-61.
- 12 Ochoa T, Robinson J. Revisiting group consensus: Collaborative learning dynamics during a problem-based learning activity in education. *Teacher Education and Special Education* 2005; 28:10-20.
- 13 Gijbels D, Dochy F, Van den Bossche P, Segers M. Effects of problem-based learning: A meta-analysis from the angle of assessment. *Review of Educational Research* 2005; 75: pp27-61.
- 14 Mangino C, Griggs S. Learning styles in higher education. In: *Synthesis of the Dunn and Dunn Learning styles model Research: Who, What, When, Where and so what-the Dunn and Dunn Learning styles models and its Theoretical Corn stone*, edited by Dunn R, Griggs S New York, St John's University 2003; 185-8.

