

Use of Mixed Teaching Modality: Pakistani Medical Students Perspective

**Dr Mukhtar F
September 2014
Volume 7
Issue 1
Doctors Academy Publications**

A medical teacher needs to use a variety of teaching methods, which cater to the discrete learning styles of the students and ensure the efficient transfer of knowledge from the teacher to the learner. This study was conducted to determine the preferences of medical students for mixed teaching modality.





WJMER

World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy

Highlight: Abstracts from the 4th International Academic and Research Conference 2014, Manchester, UK



The Anatomy and Pathogenesis of
Tendinous Interconnection between Flexor
Tendons in the Musician's Hand

The First National Undergraduate
Conference for Clinical Anatomy (NUCCA)

Use of Mixed Teaching Modality: Pakistani
Medical Students Perspective

Wireless Sensor Networks in Health Care
Applications

Integrated Academic and Clinical Training
Programmes in the United Kingdom

Management of Paediatric Trauma in
Siblings with Pyknodysostosis: A Case
Report

Synchronous Colorectal Cancers: A Case
Report and Review of Literature.

Introduction

The World Journal of Medical Education and Research (WJMER) (ISSN 2052-1715) is an online publication of the Doctors Academy Group of Educational Establishments. Published on a quarterly basis, the aim of the journal is to promote academia and research amongst members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from around the world. The principal objective of this journal is to encourage the aforementioned, from developing countries in particular, to publish their work. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings. We envisage an incessant stream of information flowing along the channels that WJMER will create and that a surfeit of ideas will be gleaned from this process. We look forward to sharing these experiences with our readers in our editions. We are honoured to welcome you to WJMER.

Editorial Board

Executive Committee

Editor-in-Chief

Professor Stuart Enoch, PhD, MBBS, MRCSEd, PGCert (Med Sci), MRCS (Eng)

Editor

Ms. Karen Au-Yeung, BSc, MBBCh (Hons), MRCS

Associate Editors

Dr. Ahmed Hankir, MBChB

Ms. Laura Derbyshire, MBChB, MRCS

Advisory Board

Dr. Mohammed Hankir, BSc, MSc, PhD

Mr. Rajive Jose, MBBS, MS (Gen Surg), MCh (Plast Surg), DNB (Gen Surg), FRCSEd, Dip Hand Surgery (BSSH), FRCS (Plast Surg)

Dr. Suzanne Kumar, MBBCh (Hons), MRCP

Mr. Sri Thrumurthy, MBChB (Hons), MRCS

Dr. Jamil David, BDS, MSc, PhD

Dr. Bina Raju, BDS, MSc, PhD

Mr. Vaikunthan Rajaratnam, MBBS (Mal), AM (Mal), FRCS (Ed), FRCS (Glasg), FICS (USA), MBA, Dip Hand Surgery (Eur), PG Cert MedEd (Dundee), FHEA(UK)

Dr. Charlotte Li, MSc, MB ChB

Dr. Leslie Cheng, MSc, MB ChB

Dr. Mayura Damanhuri, MBChB (Hons)

ALL RIGHTS RESERVED

Volume 7, Issue % 2014, World Journal of Medical Education and Research (WJMER). An Official Publication of the Education and Research Division of Doctors Academy Group of Educational Establishments.

Electronic version

published at

Print version printed
and published at

ISBN

Designing and Setting

Cover page design and graphics

Type Setting

Contact

Doctors Academy, PO Box 4283,
Cardiff, CF14 8GN, United Kingdom

: Abbey Bookbinding and Print Co.,

: Unit 3, Gabalfa Workshops, Clos

: Menter, Cardiff CF14 3AY

: 978-93-80573-44-1

: Doctors Academy, DA House, Judges Paradise, Kaimanam,

: Trivandrum, 695018, Kerala, India

: Sreekanth S.S

: Lakshmi Sreekanth

: wjmer@doctorsacademy.org.uk

Copyright: This journal is copyrighted to the Doctors Academy Group of Educational Establishments. Users are not allowed to modify, edit or amend the contents of this journal. No part of this journal should be copied or reproduced, electronically or in hard version, or be used for electronic presentation or publication without prior explicit written permission of the editorial and executive board of WJMER. You may contact us at: wjmer@doctorsacademy.org.uk



Use of Mixed Teaching Modality: Pakistani Medical Students Perspective

Dr Mukhtar F

Institution

Department of Community
Medicine, Lahore Medical &
Dental College, Lahore,
Pakistan

**WJMER, Volume 7,
Issue 1, 2014**

Abstract

Background: A medical teacher needs to use a variety of teaching methods, which cater to the discrete learning styles of the students and ensure the efficient transfer of knowledge from the teacher to the learner. This study was conducted to determine the preferences of medical students for mixed teaching modality.

Methods: A mixed teaching method comprising of interactive lectures, class presentations and quiz was used to teach the topic of non-communicable diseases (NCD's) to the 4th year medical students at the Lahore Medical & Dental College, Lahore.

Result: Majority of students were satisfied with the mixed teaching modality (73%) and more than half the class reported that the course ensured participation of the majority of the class (87%) and it actively involved the students (71%).

Conclusion: Student preferences regarding other subjects and courses taught to undergraduate medical students in different years of their medical schooling needs to be evaluated. Future research needs to address the gender differences in student preferences, and the academic performance of students taught using this method.

Key Words

Mixed teaching modality, interactive lectures, quiz, teaching methods, students' perception

Corresponding Author:

Dr Mukhtar F, E-mail: fatimamukhtar@doctor.com

Introduction

A paradigm shift has been observed in the field of medical education from a teacher centered or didactic to a student centered or interactive form of teaching. The traditional blackboard teaching is being replaced by newer methods involving the use of power point, group discussions, skills laboratory and role playing.^{1,2} This transition from the behaviorist theory of learning to the cognitive and constructivist theories was required for the development of meaningful learning and takes into account strategies that help students in comprehension and attachment of meaning to the learning process.³ These strategies incorporate instructional methods that are interactive, student oriented and inculcate self-learning, critical thinking and problem solving skills in the learner. All these foster internal motivation in the learner, which is important for deep learning.^{4,5}

In addition, medical educators need to keep in view the learning styles of the students. Learning styles

has been defined as the "cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with and respond to the learning environment".⁶ Learning styles pertain to an individual's personality and environmental factors. An individual can have more than one type of learning style. Psychologists and educators have highlighted many learning styles in literature^{7,8} such as active, visual, intuitive, reflective, sensing and verbal learners. In order to be an effective and efficient medical teacher it is imperative to keep in perspective the various learning styles of the students and amend one's teaching and incorporate new teaching methods to ensure the efficient transfer of knowledge from the teacher to the student. However, in reality this is not so simple, as every student has his individual learning style; a teaching method that maybe beneficial for one student might not be for the other student.⁹ It is, therefore, important for courses to be designed to take into account the learning styles of the majority of medical students,

incorporating a range of teaching methods to create a better learning environment.¹⁰ This particular study was undertaken to determine the preferences of medical students for mixed teaching modality.

Methods

This descriptive cross-sectional study was conducted among the 4th year medical students of Lahore Medical & Dental College, Lahore, Pakistan in March 2013.

The medical curriculum prepared by the Pakistan Medical & Dental Council and the Higher Education Commission includes the subject of Community Medicine in the Third Professional Examination. The curriculum specifies the contents to be covered under the subject of Community Medicine. One of its modules "Epidemiology, control and prevention of non-infectious diseases of public health importance", commonly referred to as non-communicable diseases (NCD's) covers the diseases hypertension, coronary heart disease, cancers, injuries, diabetes mellitus, obesity, acute rheumatic fever and heart disease.

This study incorporated a mixed teaching modality to teach NCD's to the 4th year medical students. This teaching method was unique, as it hadn't been used previously. The same topic was taught the previous year using interactive lectures only. The teaching methods used were interactive lectures, class presentations and a quiz. The faculty member took the interactive lectures on the salient features of NCD's and the principles of their prevention and control. The 4th year students gave the class presentations. The simple random method was used to select eight students from the class, who were allocated different topics such as hypertension, heart disease, cancers to present to the rest of the class. The students used power-point slides or overhead projector as a mode of presentation based on their personal preference. At the end of the NCD course a class quiz was conducted in which the class was divided into two teams, team A and team B and the quiz questions prepared by the faculty member including multiple choice questions (MCQ's) and short answer questions were asked. The team, which won the quiz was rewarded by a treat which included a drink and a snack.

All the 4th year students were involved in the study. Data was collected using a pretested questionnaire, having both open and closed ended questions. The questions inquired about the students' satisfaction with the mixed teaching modality, their perceptions about the outcome of the course and their reasons for liking or disliking the teaching methodology used to teach NCD's. In the end students were asked to give their suggestions regarding this teaching modality.

The purpose of data collection was explained before obtaining informed consent from the students. Confidentiality and anonymity was ensured.

The data was entered into the statistical package for social sciences (SPSS) version 16.00 for analysis. Descriptive statistics were computed and presented in the form of tables and figures. The perceived outcome of the course by the students was analyzed using a 5 point Likert Scale, where 5= much more than most courses and 1= much less than most courses.

Results

The entire 4th year MBBS class of 103 students were involved in the study. The majority were females 65 (63%) and only 38 (37%) were males. The age range was from 18 to 25, with the bulk (69%) of students falling between the age category of 20-22. Apart from a single student falling below this age group, the remainder (30%) were above the age of 22. The student satisfaction rate with the mixed teaching modality was 75(73%) students, while 28 (27%) reported not being satisfied with this teaching method. (Figure 1)

The students' perceptions regarding the outcome of the NCD course taught using mixed teaching modality was analyzed on a 5-point Likert Scale, in which 5 = much more than most courses, 4= more than most courses, 3= about the same as other courses, 2= less than most courses, 1= much less than most courses and 0= not applicable. Eighty-nine students (87%) reported this teaching method ensured the participation of the majority of the

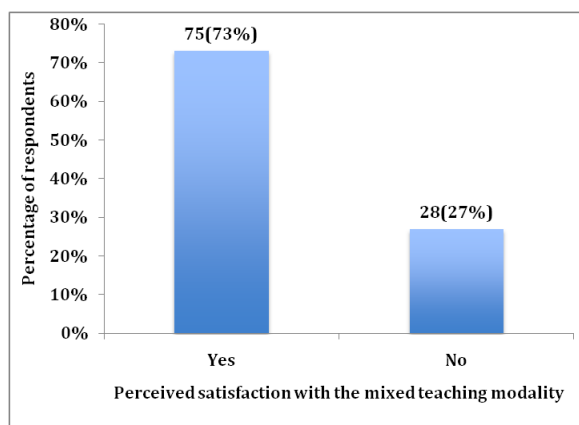


Figure 1: Perceived satisfaction of students with the mixed teaching modality

class, seventy-three students (71%) stated the course actively involved the students, and seventy-two students claimed the course helped to develop communication skills. Furthermore, sixty-seven students (65%) thought this teaching method made effective use of time (Table 1).

Perceptions regarding the course outcome	Much more than most courses 5	More than most courses 4	About the same as others 3	Less than most courses 2	Much less than most courses 1	Mean \pm SD
My learning increased in this course	10 (10%)	47 (46%)	39 (38%)	6 (6%)	1 (1%)	3.5 \pm 0.78
My interest in the subject area has increased	7 (7%)	50 (48%)	36 (35%)	9 (9%)	1 (1%)	3.5 \pm 0.79
This course helped me to think independently about the subject matter	7 (7%)	42 (41%)	50 (48%)	4 (4%)	0 (0%)	3.5 \pm 0.68
This course actively involved me in what I was learning	22 (21%)	51 (50%)	26 (25%)	3 (3%)	1 (1%)	3.8 \pm 0.81
This course made effective use of time	19 (18%)	48 (47%)	28 (27%)	6 (6%)	2 (2%)	3.7 \pm 0.89
This course helped teach difficult concepts	7 (7%)	37 (36%)	50 (48%)	6 (6%)	3 (3%)	3.3 \pm 0.81
This course ensured participation of the majority of the class	40 (39%)	49 (48%)	10 (10%)	1 (1%)	3 (3%)	4.1 \pm 0.87
This course helped develop communication skills	24 (23%)	48 (47%)	26 (25%)	5 (5%)	0 (0%)	3.8 \pm 0.82
This course will help us in achieving better grades	12 (12%)	46 (45%)	39 (38%)	5 (5%)	1 (1%)	3.6 \pm 0.79
This course helped develop group dynamics	14 (14%)	50 (49%)	34 (33%)	3 (3%)	2 (2%)	3.6 \pm 0.81
We studied and put effort into the course	9 (9%)	42 (41%)	46 (45%)	6 (6%)	0 (0%)	3.5 \pm 0.73
We came prepared for each class	8 (8%)	30 (30%)	49 (48%)	12 (12%)	4 (4%)	3.2 \pm 0.90
We were challenged by this course	12 (12%)	41 (40%)	39 (38%)	9 (9%)	2 (2%)	3.5 \pm 0.88
We found the course interesting	23 (22%)	38 (37%)	32 (31%)	9 (9%)	1 (1%)	3.7 \pm 0.94

Table 1: Students' perceptions regarding the NCD course outcome taught using mixed teaching modality

The students were asked to identify their reasons for liking and disliking the mixed teaching modality,

and the open-ended responses of the respondents are shown in table no. 2.

Reasons for liking the mixed teaching modality
"It ensured active participation of all the students"
"The combination of methodologies helped better understand the topic"
"Better use of time and clarification of concepts"
"Change is always good, a good change from conservative method of teaching"
"boosts confidence"
"Communication skills increased, all methods complement each other"
"developed interest, basic concepts taught by teacher, students put effort in class presentations"
"Equal chance for every student to participate"
"Everybody participated, improved communication skills and ensured active learning"
"Exciting, competitive and helped to understand the format of university questions"
"Interactive learning, active participation of all"
"Instead of sitting we were made to study effectively by this method"
"Involvement of whole class, not boring, exciting"
"It captured my interest, I found myself listening more attentively"
"Most interesting and beneficial way, it made us think, learn and prepare"
"Quiz was the best"
"Whole class was involved even the hesitant students"
"Topic was made interesting"
"Really very innovative and interesting as compared to boring lectures"
"Quiz helps in preparation of tests"
Reasons for disliking the mixed teaching modality
"A small number of students failed to participate"
"Class presentations didn't help, students were shy and just read off the slides"
"Only the students presenting had prepared the topic"
"Preparation of presentations is time consuming and difficult when we have tests"
"Some students didn't feel comfortable presenting"
"Some students are shy and reluctant to present"
"Teacher can deliver a topic better than students"
"Selection of students for presentations should be voluntary and not through lottery method"

Table 2: Students reasons for liking and disliking the mixed teaching modality.

Respondents were requested to give their suggestions regarding the mixed teaching method, and the following suggestions were drawn:

"All other topics should be taught this way "

"The number of quiz groups should be increased"

"I would want all departments to use this teaching methodology"

"Quiz should be regularly conducted, instead of tests"

"First time had a quiz, should be conducted for other topics aswell"

Discussion

The paradigm shift that is seen in medical education has introduced a myriad of ways in which medicine is taught and learnt.¹¹ Many researchers have tried to discern learning styles of students, as claims have been made that students are able to perform better if their learning styles matched the teaching style used to teach them.¹² This was expressed by Dunn and colleagues: "We can no longer afford to assume that all students will learn through whichever strategy the teacher prefer to use".¹³ However, it is difficult to cater to individual learning styles of medical students. In addition learning styles of students do not remain constant; they keep changing.

Thus a teaching modality employing various methods to teach one course of NCD's was used in this study. A predominant number of students were satisfied with the mixed teaching modality. According to our research, the majority of students preferred multimodal learning in contrast to unimodal learning, which emphasizes the use of multiple teaching methods by medical faculty.¹⁴ A greater number of first year medical students at the School of Medicine, Detroit preferred multiple modes of information presentation as compared to using one method only.¹⁵ The review of literature conducted by Cavanagh et al also shows that the use of multiple approaches for teaching purpose is promoted.¹⁶ However, conflicting views also exist and although the use of multiple teaching approaches taking account of individual learning preferences is prudent but it isn't found to be always beneficial.¹⁷

Researchers have conducted studies on students' preferences and attitudes for various teaching methods. Students of Lahore Medical & Dental College, Lahore preferred skills laboratory followed by interactive lectures for the teaching of both basic and clinical science subjects.² Shah et al have documented students favoring media sites (videotaped lectures, available online) as compared to live lectures.⁹ Studies have investigated students' views for individual teaching modalities, such as lectures, problem based learning, team based

learning and demonstrations but literature review was unable to identify a study conducted on students opinion regarding the use of a combination of teaching modalities to teach one course. The mixed modality used in the study was perceived by the students to increase their participation, involve them actively in the course and improve their communication skills.

The medical classroom consists of students having different learning styles, and in order to make the teaching and learning experience meaningful it is important to use a variety of teaching methods.¹⁸ All this can be achieved by being more aware of our students' preferences which will increase the likelihood of providing an effective learning experience and environment.¹⁹ Teaching students in their preferred method leads to increased level of satisfaction among them

Conclusion

The major limitation of this study is that its findings are generated from a single medical school and cannot be generalized to other medical schools. Similar studies performed across different medical schools across different subjects and different years of college should be the next step forward. Future research needs to address the gender differences in student preferences, and the academic performance of students taught using this method.

References

1. Yawar A, Shah SS. Faculty and Students Survey: "Methods of Imparting Knowledge suitable for undergraduate Medical students." Pakistan J. Med. Res 2003; 42(3):116-9.
2. Mukhtar F, Hashmi N, Rauf MA, Anzar A, Butt KI, Ahmed M, Abbas K. Teaching methodologies; what is the students' perspective? Professional Med J 2012;19:597-603.
3. Bruning RH, Schraw GJ, Norby MM, Ronning RR. Cognitive psychology and instruction. 4th ed. New Jersey: Merrill Prentice Hall;2004.
4. Kiguli S, Baingana R, Paina L, Mafigiri D, Groves S, Katende G et al. Situational analysis of teaching and learning of medicine and nursing students at Makerere University College of Health Sciences. BMC Int Health Hum Rights 20011; 11(1):S3(Epub ahead of print)
5. Irby DM, Wiilkerson L. Educational innovations in academic medicine and environmental trends. J Gen Intern Med. 2003;18:370-6
6. Reid JM. The learning style preferences of ESL Students. Tesol quarterly 1987; 21(1): 87-110.
7. Hazard LL, Nadeau JP. Foundations for learning: Claiming your education. 3rd ed; India: Pearson Education Inc. 2012
8. Santrock JW. Educational Psychology. 2nd ed.

- New Delhi: Tata McGraw Hill; 2006
9. Singh S, Singh S, Gautam S. Teaching styles and approaches: medical students perceptions of animation-based lectures as a pedagogical innovation. *Pak J Physiol* 2009;5(1):16-9.
 10. Hughes JM, Fallis DW, Peel JL, Murchison DF. Learning styles of orthodontic residents. *J Dent Educ* 2009; 73(3): 319-27.
 11. Shah S, Meisenberg G. Opinions about Teaching Modalities: A Comparison between Faculty and Students. *Educ Res Int* 2012; Article ID 604052:1-7
 12. Hughes JM, Fallis DW, Peel JL, Murchison DF. Learning styles of orthodontic residents. *J Dent Educ* 2009; 73(3): 319-27.
 13. Cristina Tulbure Investigating the relationships between the teaching strategies and learning styles in higher education *Acta Didactica Napocensia* Volume 5, Number 1, 2012. 65-74)
 14. Nuzhat A, Salem RO, Hamdan NA, Ashour N. Gender differences in learning styles and academic performance of medical students in Saudi Arabia. *Med Teach* 2013; 35(1): S78-S82.).
 15. Lujan HL, DiCarlo SE. First year medical students prefer multiple learning styles. *Adv Physiol Educ* 2006;30(1): 13-16
 16. Cavanagh SJ, Coffin DA. Matching instructional preference and teaching styles: a review of the literature. *Nurse Educ Today* 1994; 14(2): 106-10.
 17. Forrest S. Learning and teaching: the reciprocal link. *J Contin Educ Nurs* 2004; 35(2): 74-9.
 18. Heather E. Teaching anatomy with multiple techniques. *Teaching Innovation Projects* 2011; 1 (1):3. Available at: <http://ir.lib.uwo.ca/tips/vol1/iss1/3>
 19. Janing J. Linking teaching approaches and learning styles: how can it help students?. *Emerg Med Serv* 2001; 30(9): 77-80)

The World Journal of Medical Education & Research (WJMER) is the online publication of the Doctors Academy Group of Educational Establishments. It aims to promote academia and research amongst all members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from all parts of the world. The journal intends to encourage the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting-edge technology and those who need to innovate within their resource constraints. It is our hope that this interaction will help develop medical knowledge & enhance the possibility of providing optimal clinical care in different settings all over the world.



ISSN 2052-1715

WJMER

World Journal of Medical Education and Research
An Official Publication of the Education and Research Division of Doctors Academy

