

ORIGINAL ARTICLE

A COMPARISON OF TEACHERS' AND STUDENTS' PREFERRED METHOD OF LECTURE DELIVERY AND EXAMINATION SYSTEM IN MEDICAL EDUCATION

Muhammad Kashif¹, Marriyam Asghar¹, Iram Shehzadi¹, Rizwan Ahmed¹, Adiba Jaffar², Iqra Nadeem³

ABSTRACT

Introduction: In an effort to improve the quality of knowledge delivery, medical mentors are combining old and new methods of teaching and technology. Furthermore, various examination methods are used to assess the impact of the knowledge produced on the students. It was designed to gain a deeper understanding of teachers and students' preferences regarding lecture delivery methods and examination systems used in medical education.

Material & Methods: A cross-sectional survey was conducted at six educational institute located in Faisalabad from April 2019 to September 2019. A convenient sample of 3673 students between age 18 to 24 years and 88 faculty members. Data was collected through the use of structured questionnaire after taking informed consent. Data was analyzed using SPSS version 23.

Results: 1426(38.8%) students and 52(59.1%) teachers preferred interactive lecture the most, followed by formal lecture method preferred by 820(22.3%) students and 15(17.0%) teachers, and student presentation appeared as least preferred method by both populations. SEQs examination method was mostly preferred by students 2157(58.7%) as well as by teacher 37(42.0%) while, OSCE/OSPE appeared least preferred method by students 21(.6%) and teachers 0(0%). There was significant difference in perception of students and teachers on different lecture delivery methods ($p<.05$). Students were less agreed ($M=4.14$, $SD=0.90$) that the lectures are well organized as compare to teachers ($M=4.49$, $SD=0.97$). Students were less agreed ($M=3.98$, $SD=0.79$) that the lectures are clear and understandable as compare to teachers ($M=4.20$, $SD=0.82$).

Conclusion: Based on the current study, teachers and students have no different preferences regarding lecture delivery and assessment methods in medical education, suggesting that there is a paradigm shift from formal to interactive teaching.

Key Words: Examination methods, Lecture delivery, Medical Education, Students, Teachers

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Authors' Affiliation

¹Riphah College of Rehabilitation and Allied Health Sciences, Riphah International University, Islamabad, Pakistan

²Institute of Physical Therapy and Rehabilitation, Jinnah Sindh Medical University, Karachi, Pakistan

³Sargodha Medical College, University of Sargodha, Sargodha, Pakistan

Corresponding Author

Muhammad Kashif

Riphah International University, Islamabad, Pakistan

Email: kashif.shaffi@gmail.com

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INTRODUCTION

The word "Lecture" term comes from Latin which means is "to recites out loud". Lecture is a conversation or a series of conversation delivered to a group of learners or students. It is teaching method which is frequently used in educational institutes.¹ There are many types of lectures that are used in classroom including formal lectures: in which teacher addresses in front of class and gives material or summaries to the class, Interactive lectures: in which there is an interactive conversation between students and teacher, questions are asked by the students and answered while lecture, Student centered teaching: in which students are focused on the lectures and the instructor chooses to be directed by the students answers to the questions, Student presentation: in which students make presentation and deliver it to the class in presence of teacher at the same time teacher can make required modification in presentation and Group work: in which teacher makes a successions of mind exercises like cognitive brainstorming and debates or accomplishment of practical and laboratory work, the ultimate goal of which is to enable the students to gain experience by themselves. Paul Sender in 2000 conducted a study that shows that students favored interactive lectures and group-based activities for learning and students' presentations and formal lectures were ranked as least favored method for learning. The students in their study preferred to be assessed through short essay questions.² Medical mentors are continuously devising new methods and technologies to improve quality of knowledge delivery. Sunita Kalyanshetti completed a cross sectional study in 2016 on the perception of medical students toward teaching aids during physiology

lectures in which students preferred formal lecture delivery method using blackboard over PowerPoint.³

To assess the level up to which educational goals of a specific degree program or course are attained, variety of examination methods are used.⁴⁻⁶ Students often study according to examination necessities so that they manipulate knowledge in a contemptuous way.⁷ The most important link that ties the health care professionals is that they all have to follow highly specific educational courses. So it is very important thing to implement that our educational system and examination method must be based on best available evidence.⁸ To make curriculum of medical education in Pakistan compatible to the international standards Pakistan Medical and Dental council (PMDC) is implementing strategies to improve it. These strategies include changing and improving teaching and examination methods. So it is acknowledged that appraising lecturing and examination approaches on regular basis so that improvements can be implemented to enhance the quality of knowledge delivery at undergraduate level. Feedback method is mostly employed for this purpose.⁹ Students often study according to examination necessities so that they manipulate knowledge in a contemptuous way; they deal examination just like playing game. The examiner is also participant of this game. This procedure includes knowing what will happen in exam and in which way it will be marked. One can learn this procedure by attending lecturer's lecture and learn from his opinion gathered from the books.⁷ Derek Rowntree said that: If someone want to determine the accuracy of

educational system he must have to pay attention to examination system.¹⁰

There are numerous methods of examination available for student evaluation consisting of short essay questions (short-answer or finishing point test needs only one word as an answer, figure as an answer, or figure that answers the question completely or explains the statement). MCQ's (multiple-choice questions have more than two option that students can choose among to answer). Long Essay questions, on the other hand, are extended-essay-question-answers type that let the students a greater freedom to format a better structure and students find great room for their answers to questions.¹¹

In general it is admitted that examination and student evaluation methods plays an essential role in learning process as well as affect the emerging teaching strategies.¹² Students preparation for examination highly dependent on their perception about assessment methods as this can affect the learning process, both positively or negatively.¹³ A great difference exists between what is asked from the students, and what are the students' preferences or what are they supposed to be asked.¹⁴ Multiple choice questions are effective at assessing numerous learning results in the course of one test; on the other hand, they cannot exam the organization concepts or the application of thoughts. They also permit students to identify instead of remember information.¹⁵ This study is intended to compare preferences of teachers and students about lecture delivery method and examination system in medical education which provide a detail insight to improve examination and teaching system of medical colleges in Pakistan.

MATERIAL AND METHODS

From April 2019 to September 2019, a cross-sectional survey was conducted at Riphah College of Rehabilitation and Allied Health Sciences Faisalabad, Faisalabad Medical University, Independent Medical College, Government College University, Aziz Fatimah

Medical and Dental College Faisalabad, and Lyallpur Institutes of Advance Studies with approval from Riphah International University's Ethical Review Board. Participants from both genders aged between 18 to >60 years were selected as the subjects of the study. The designated undergraduate medical students who were absent during data collection procedure and teaching faculty and students who were not willing to participate were excluded from this study. A self-structured questionnaire based on previous studies was used to collect the data. There are 3 section in questionnaire including Demographics¹⁶, Questions about type of preferred lecture delivery method^{17,18} and questions about type of preferred examination system.^{9,16}

Informed consent was taken from the participants of the study. A sample of 3673 students and 88 faculty members relevant to the medical education was selected. Preferences of the teachers and students were attained regarding following lecture delivery methods including formal lecture, interactive lectures, student centered teaching, student presentation and group work and regarding examination systems including; Long Essay Questions, Short Essay Questions, MCQ based, Viva and OSCE/OSPE. Questionnaire distributed among students and filled in supervision to avoid any mistake so the overall students' response rate was 100%. And 200 questionnaires distributed among teachers but only 88 were returned filled so the overall response rate from teachers was 44%.

Statistical package for social sciences (SPSS) 23 version was used for statistical analysis of data. Microsoft office word 2013 was also used for interpretation and explanation of the results obtained from the SPSS. Mean \pm S.D was calculated for the quantitative variables while the frequency tables and bar charts were used in order to calculate the trends of quantitative variables. To see the association between the main variables chi-square test was

applied and p-value was interpreted accordingly. Independent samples t-tests was conducted to compare main variables.

RESULTS

Out of 3673 students and 88 teachers, 38.8% students and 59.1% teachers preferred interactive lecture the most, formal lecture method was preferred by 22.3% students and 17.0% teachers, group work was preferred by 20.9% students and 12.5% teachers, student centered teaching was preferred by 9.8% students and 11.4% teachers and student presentation appeared least preferred method of lecture delivery by students 8.2% as well as teacher 0%.

The examination preferences of students and teachers, according to the results SEQs examination method was mostly preferred by students 58.7% as well as by teacher 42.0%, 30.4% students and 39.8% teachers preferred MCQs, 7.9% students and 5.7% teachers preferred LEQs, 2.4% students and 12.5% teachers preferred viva and OSCE/OSPE appeared least preferred method by students .6% and teachers 0%. There was significant association between type of participants and examination method ($p < .001$). (Table 1)

Comparison of students and teachers' perception about preferred methods of lecture delivery (interactive lecture). Independent samples t-tests was conducted to compare students and teachers' perception about methods of teaching. There was significant difference in perception of students and teachers on different techniques of methods ($p < .05$). (Table 2)

The mean score of perception of students were higher than mean scores of teachers' perception. Students were less agreed ($M=4.14$, $SD=0.90$) that the lectures are well organized as compare to teachers ($M=4.49$, $SD=0.97$). Students were less agreed ($M=3.98$, $SD=0.79$) that the lectures are clear and understandable as compare to teachers ($M=4.20$, $SD=0.82$). (Table 3)

DISCUSSION

Individual preferences and learning styles play a role in the delivery of lectures and examinations in medical education. Educators should be aware of the different learning styles of their students in order to adjust the material accordingly. To ensure that all students have an equal opportunity to learn, assessment methods should also include a variety of approaches and consider individual preferences.

A majority of teachers and students preferred interactive lectures according to our study. Formal lectures were also preferred by teachers and students, as well as group work. Also, the similar results reported by Sander et al (2000) who concluded his study after conducting in three British universities on the university students' expectations of teaching, found that formal lectures and interactive lectures were expected to be the most frequent methods of teaching and learning. Among 273 participants, 69% ranked formal lectures highest, followed by interactive lectures with 53% (59) among 208 students.⁹

Current study showed the comparison of teacher and student perceptions about preferred method of lecture delivery indicated that students were less agreed that the lectures are well organized as compared to teachers about interactive method of lecture delivery, students were less agreed that the lecture are clear and understandable as compared to the teachers and teachers were less agreed that they are able to relax during lecture as compared to the students. Yvonne, Steiner conducted a systematic review of various studies on the topic Interactive lecturing: strategies for increasing participation in large group presentations in which they reported that the interactive lecture is beneficial because it causes the active participation of students and teachers keep the students attentive and motivated for learning and allows for instant feedback about the delivered lecture. Group discussion is helpful in sharing the concepts and ideas and enhances problem

solving and communication skills. Group discussion is not commonly practiced but once we practice, it will become more effective technique as compared to traditional methods.¹⁹ The goal of interactive lecture delivery methods is to engage students actively during the lecture, promoting their participation, critical thinking, and understanding of the subject matter. As a result of these methods, a dynamic learning environment is created that goes beyond passive listening. This encourages students to explore and think creatively, and enables them to gain a deeper understanding of the subject matter. This type of learning has been proven to be more effective over traditional lecture-style teaching.²⁰

According to the present study SEQs was mostly preferred by teachers as well as students for examination. Moreover, an interesting finding of our study was OSCE/OSPE examination was least preferred by teachers as well as students. Whereas according to the past study the results were different for OSCE/OSPE but similar results reported for SEQs, MCQs and viva as reported in our study. Based on the findings of Rafique et.al.'s study in 2003 on students' feedback on teaching and assessment at Nishtar Medical College, Multan, 209 (38.8%) students preferred short essay questions (SEQs), 176 (32.7%) preferred multiple choice questions (MCQs), and 28 (5%) preferred long essay questions. There were 274 (51%) who preferred OSCE/OSPE. They found that most participants preferred the OSCE/OSPE type of examination system because it allows clinical knowledge to be evaluated in a more appropriate environment than the viva voce examination, which students perceive as biased. However, the short time duration of OSCE/OSPE reported in their study is a drawback.⁹

Another study published by Aneela reported that 12(31.6%) of students preferred multiple choice questions, 11(28.9%) students preferred

short essay questions and 9(23.7%) preferred extended essay questions.²¹ Another study conducted by Manzar.B et al. to determine the level of satisfaction among medical students of a public sector medical university regarding their academic activities. According to their study 50% of the participants favored MCQs for the examination. However 50% of participants were also appreciated the OSCE/OSPE type of examination system.²²

The results of our research indicate that the majority of the students agree that they should be assessed frequently through short essay questions (SEQs), which is consistent with the response of the teachers, as 42.0% agreed. An important assessment tool in medical education is the short essay question. Through SEQs, students demonstrate their understanding, critical thinking abilities, and communication skills. Students develop essential medical competencies through short essay questions by engaging in thoughtful and concise writing, such as effective communication, critical analysis, and application of knowledge. SEQs allow the student to practice and refine their writing skills in a clinical setting and help them to prepare for higher level assessments. SEQs also help medical educators to identify students who need additional guidance and support.^{23, 24}

Response to question asked about which system of examination is more beneficial for students to gain better grades was also differing as most of the students 47.5% favored short essay questions whereas most of the teachers 45.5% favored multiple choice questions. Assessment methods widely used in medical education include multiple-choice questions (MCQs). A stem or a question is presented followed by a set of choices with only one correct answer. There are several benefits to using MCQs in medical education. MCQs are relatively easy to construct and can be used to test a wide range of knowledge. They are also efficient in terms of time,

allowing large amounts of content to be assessed quickly. Additionally, MCQs provide a standard of comparison between students.²⁵

CONCLUSION

Students and teachers are most likely to prefer interactive lecture delivery methods over formal lectures. While the short essay questions examination system is preferred by both teachers and students.

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Table 1. Lecture Delivery Methods Mostly Preferred for Learning/Teaching

Methods mostly preferred for Learning/Teaching	Students		Teachers		p-value
	F	%	f	%	
Formal Lecture	820	22.3	15	17.0	<.001
Interactive Lecture	1426	38.8	52	59.1	
Student-Centered Teaching	360	9.8	10	11.4	
Student Presentations	300	8.2	0	0	
Group Work	767	20.9	11	12.5	

Table 2. Examination Method Preferred by Students and Teachers

1. Examination method preferred by students and teachers	Students		Teachers		p
	f	%	f	%	
1. Multiple Choice Questions	1115	30.4	35	39.8	<.001
2. Short Essay Questions	2157	58.7	37	42.0	
3. Long Essay Questions	291	7.9	5	5.7	
4. Viva	89	2.4	11	12.5	
5. OSCE/OSPE	21	.6	0	0	

Table 3. Comparison of Students and Teachers' perception about the Interactive Lecture Delivery Method

1	The lectures are well organized	Students		Teachers		p
		M	SD	M	SD	
1	The lectures are well organized	4.14	0.90	4.49	0.97	<.001
2	The lectures are clear and understandable	3.98	0.79	4.20	0.82	0.009
3	Lectures stimulate student's interest	3.81	0.94	4.18	0.93	<.001

4	Lectures encourage student's participation	3.82	1.08	4.02	0.88	0.080
5	Lectures delivery method is interesting and engaging.	3.85	0.95	4.34	0.84	<.001
6	I am able to understand diagram completely	3.78	0.98	4.22	0.58	<.001
7	The students are able to make their notes/diagram.	3.95	0.96	4.28	0.95	0.002
8	I am able to relax more during lecture	3.72	0.97	2.40	1.21	<.001
9	I find learning flexibility in this method	3.69	0.89	3.92	1.23	0.019
10	In this method students are able to obtain better grades.	3.84	0.90	4.19	0.90	<.001

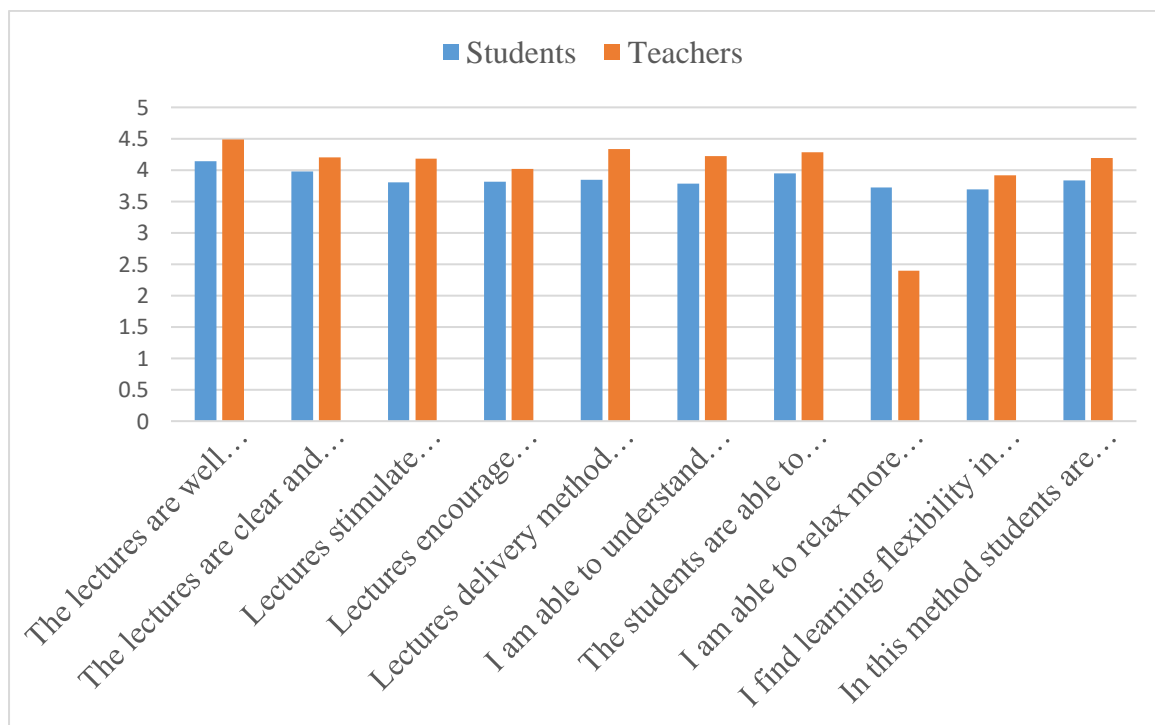


Figure I. Comparison of students and Teachers' perception about the Interactive Lecture Delivery Method