



## Effect of learning approaches on the academic profile of fourth year undergraduate students of a Private Medical College.

Naureen Omar<sup>1</sup>

1. MBBS, M.Phil, MHPE (Scholar)  
Assistant Professor Community Health  
Sciences  
FMH College of Medicine and  
Dentistry.

**Correspondence Address:**

Dr. Naureen Omar  
33-H Gulberg 3, Lahore, Pakistan.  
naureen\_omar@yahoo.com

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**ABSTRACT... Objective:** To identify the learning approaches and assess the effect of learning approaches on the academic profile of fourth year MBBS students of a private medical college of Lahore. **Study Design:** Descriptive study. **Setting:** Fatima Memorial College of Medicine, Lahore, Pakistan. **Period:** July to September 2019. **Material & Methods:** 97 fourth year medical students. R-SPQ-2F validated questionnaire was used to identify the learning approaches. Academic profile in the form of percentages of university third professional examination were taken in two categories (<65% and >65 %) while academic background of intermediate and A levels examination was inquired after fulfilling all ethical considerations. **Results:** A total of 97 fourth year MBBS students participated having a mean age  $22 \pm 0.889$  with female predominance. Majority 89 (91.8%) had done intermediate compared to 8 (8.2%) A levels. Preferred learning approach was surface 52 (53.6%) compared to 45 (46.4%) deep. Strategic approach was dominant, surface strategy 32 (33%), deep strategy 26 (26.8%), surface motive 20 (20.6%) and deep motive 19(19.6%) respectively. Significant relationship ( $p 0.037$ ) between learning approaches and academic profile was observed. Learning approaches were significantly related ( $p 0.002$ ) with academic profile especially in students securing more than 65% having a deep strategy approach. **Conclusion:** Majority students were surface and strategic learners. Students with better academic performance were deep learners.

**Key words:** Learning Approaches, Medical Students, Deep Learners, Surface Learners.

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### INTRODUCTION

Medicine is like a sea flooded with new knowledge, thus making its teaching and learning a unique experience. It is challenging to deliver such extensive knowledge within a limited time period and to effectively retain, analyze and interpret it. The paradigm shift to student centered interactive teaching from teacher centered lecture-based teaching is influenced by the learning styles and approaches of the graduates.<sup>1</sup>

The educational impact and outcome of a curriculum is dependent on many factors learning approach of students being one of them. Deep or surface approach whichever adopted is directly related to their academic performance.<sup>2</sup> Fear of failure, aim to cover the syllabus in limited time without conceptualizing, retaining information based on assessment strategies provokes the students to adopt a surface learning approach.

Deep learners on the other hand are analytical and critical thinkers, their knowledge is based on concepts, interlinking and analyzing all sources of information.<sup>3</sup>

Learning approach does have a significant impact on the academic performance of the learner as observed in a study that learners with deep approach consistently performed better with higher scores as compared to surface learners.<sup>4</sup> Impact of instructional strategies adopted is influenced by the learning approaches of the learner. Thus, it is imperative for all institutions to identify the baseline learning approach of their learners so as to implement strategies in accordance with these approaches to ensure the effectiveness and success of their curricula.<sup>5</sup>

The most pertinent and inherent goal of medical education is to produce effective and life-long

learners for which it is essential to study the approaches of students.<sup>6</sup> Learning environments providing opportunities of active learning and instructional strategies based on conceptual learning direct students to adopt a deep learning approach.<sup>7</sup> Academic performances of students can be directly linked to their approach towards learning and by identifying these it would be easier for the facilitators to design appropriate and acceptable strategies to facilitate the learners.<sup>4</sup>

Biggs's Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) is an ideal tool which classifies students according to motives and strategies. Motives implies to the reasons and strategies to the methods used by students.<sup>8</sup> In the current study this tool will be used to identify surface and deep learners in medical undergraduates.

Many studies have been conducted which support the fact that learning environment, teaching methodologies, assessment criteria collectively influence the student's approach towards learning. They also state that deep learning approach is desired, advocating the inculcation of deep approach and shifting of surface learning to deep learning. In medical schools as students stay for a tenure of 4- 5 years these steps must be taken for their transformation into deep learners.<sup>9</sup>

Medical education is in the stage of infancy in Pakistan and we need to enhance our researches so as to bring about the best changes required to produce the desired medical graduates. Local literature supports the deep learning approach, a study concluded that assessment can be considered responsible for the approach towards learning assessments based on concepts and analysis lead to deep approach.<sup>10</sup> Another Pakistani study concluded that students were in favor of a learning environment supporting deep learning approach. The study highlighted that by identifying the learning approaches of students, faculty would be able to devise strategies appropriate for the learners.<sup>11</sup>

The R-SPQ-2F questionnaire was applied on educational institutions in Pakistan, concluding

that Asian students were not rote memorizers and assessment driven learners, majority were deep learners. The author proposed studies need to be conducted on different student populations to assess the trend of learning approaches of students in Pakistan.<sup>12</sup>

The researcher feels the need to identify the gap and help develop strategies to inculcate deep learning approach within the students so as to produce self-regulated and life-long learners. The objective was to identify the learning approaches and assess the effect of learning approaches on the academic profile of fourth year undergraduate students of a private medical college of Lahore.

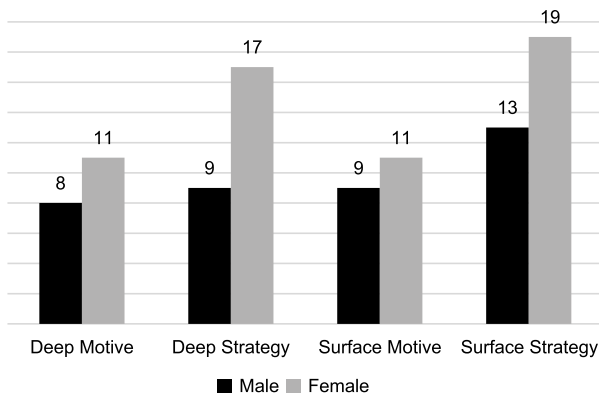
## **MATERIAL & METHODS**

A descriptive study was conducted on fourth year undergraduate students of Fatima Memorial College of Medicine within three months (July – September 2019). All students of fourth year MBBS were enrolled and after consent 97 students agreed to participate. Data was collected using the R-SPQ-2F validated questionnaire which is categorized into two major scales of deep and surface along with four subscales, deep motive, deep strategy, surface motive and surface strategy. Twenty items present in the R-SPQ-2F questionnaire with a 5-point Likert scale representing each subscale. Academic profile in the form of percentages of University third professional examination were taken comprising of two categories (<65% and >65 %) while background of intermediate/ F.Sc and A levels examination was inquired. Data was collected by the principal investigator consents were taken after explaining the purpose of the study. Academic profile was verified from the student affairs department.

SPSS v 20 was used to analyze data. Means, standard deviations, and frequencies were calculated. Chi square has been used for comparison and p value 0.05 at 95% confidence interval was considered significant. Approval from the Institutional Review Board of Fatima Memorial College of Medicine was taken.

### RESULTS

A total of 97 fourth year MBBS students of Fatima Memorial College of Medicine participated in the current study having a mean age of  $22 \pm 0.889$  comprising of 38 (39%) male and 59 (61%) female students. Majority 89 (91.8%) had done Intermediate/F.Sc compared to 8 (8.2%) having done A levels. Most common learning approach was surface 52 (53.6%) with 45 (46.4%) being deep learners. In the subscales of learning approaches surface strategy 32 (33%) was the commonest followed by deep strategy 26 (26.8%), surface motive 20 (20.6%) and deep motive 19 (19.6%) respectively. Mean values being, deep motive  $3.92 \pm 2.66$ , deep strategy  $5.36 \pm 3.13$ , surface motive  $4.78 \pm 2.62$  and surface strategy  $5.87 \pm 3.51$ .



**Figure-1. Gender and learning approaches of 4<sup>th</sup> year medical students**

Minimal difference between learning approaches and gender was observed, the preferred approach was surface.

Learning Approaches	Academic Profile		P-Value
	<65%	>65%	
Deep Learners	4	41	0.037
Surface Learners	13	39	
	Academic Background		
	F.Sc/ Intermediate	A Levels	
Deep Learners	42	3	0.721
Surface Learners	47	5	

**Table-I. Learning approaches and academic profile of 4<sup>th</sup> year medical students**

Academic profile based on the university professional examination results had a significant relationship ( $p 0.037$ ) with the learning approaches of students although majority being surface learners but in students securing  $>65\%$  deep learners were predominant. Academic background was not significantly related.

Academic Background	Learning Approaches				P-Value
	Deep Motive	Deep Strategy	Surface Motive	Surface Strategy	
Intermediate / F.Sc	18	24	18	29	0.947
A Levels	1	2	2	3	
Academic Profile					
Below 65%	0	4	1	12	0.002
Above 65%	19	22	19	20	

In the given table it is evident that learning approaches were significantly related ( $p 0.002$ ) with the academic profile especially in students securing more than 65% having a deep strategy approach.

### DISCUSSION

Medical curriculum is challenging aimed to develop analyzing, critical thinking, interpretative, diagnostic and treatment skills. To achieve these skills learning environment, learning styles and approaches of learners play a significant role.<sup>11,13</sup>

In our study female predominance was observed. Majority having done their intermediate concurrent to a study conducted in Karachi. In the current study there was a minimal difference in learning approaches with respect to gender corroborated by the study quoted above depicting most of the females being strategic learners.<sup>11</sup>

Majority literature endorses the fact that a minimal difference between learning approaches has been witnessed.<sup>14,15</sup> The current study follows the trend with surface learning being the most preferred choice within subscales surface strategy was the commonest followed by deep strategy, surface motive and deep motive respectively. Surface and strategic approach was the commonest compared to deep and motive approach in the

current study, contrasting to a study showing minimal difference in learning approaches with deep approach being used by majority medical students compared to students in general education.<sup>14</sup> Studies support the predominance of deep learning approach in students although the overall difference was very low.<sup>15,16,17</sup> Researchers have observed the adoption of deep approach by learners but these responses were dependent on the curriculum of the respondents thus it is recommended that research in different disciplines be conducted so as to get consistent results with a broader perspective.<sup>14,18</sup>

A study conducted in Pakistan narrates that students tend to use mixed approaches for learning with few actually perceiving their learning approaches based on their responses to the research tool. The result being no difference in the learning approaches adopted was observed.<sup>4</sup> Dental students also follow the given trend, in a study conducted on senior and junior cohorts no difference was observed within their learning approaches.<sup>19</sup>

Academic profile and background in addition to educational impact and outcome of curriculum are important factors related to learning styles and approaches of students.<sup>3,4</sup> In the current study students with better academic performance more than 65% in the summative assessment were adopting deep approach of learning with deep strategy being the preferred as supported by studies reporting majority medical and sciences students use strategic and surface approach to learn depending on the learning environment but to achieve academic excellence deep approach was being adopted.<sup>11,18</sup>

A significant relationship of learning approaches with academic profile ( $p=0.03$ ) was exhibited whereas there was a non-significant relationship ( $p = 0.721$ ) with academic background. Concurrent results were observed in a study conducted on medical students, results depicted weak significant relationship between academic achievements and approaches to learning.<sup>4</sup>

Many factors interplay in making students

decide their approach towards learning these being learning environment, assessment pattern, teaching methodologies and academic profile. Many researches quote that assessment methodology may play a major role in determining the learning approach of students.<sup>18,20,21</sup> Success of certain teaching methodologies like problem-based learning sessions maybe attributed to the learning approach of students especially if major contributors are deep learners.<sup>10</sup>

The current study highlights the importance of identification of learning approaches and their relationship with the academic profile and background. Certain limitations were encountered, conduction of study within one setting on a selected number of students which may be attributed to the fact that it was a self-funded study conducted by a single investigator.

## CONCLUSION

Majority students were surface and strategic learners with female predominance. Students with better academic profile were deep and strategic learners. Learning approaches and academic profile exhibited a significant relationship whereas there was a non-significant relationship between learning approaches and academic background.  
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### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Naureen Omar	Conceptualization, Questionnaire development Data collection, Analysis write up.	