

Exploring teaching style in an undergraduate medical college following traditional curriculum in Pakistan

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Abstract

Objectives: To find out the teaching style and its differences among teachers in a medical college setup.

Methods: The observational cross-sectional study was carried out from June to August 2011 at a private medical and dental college in Karachi, using traditional curriculum and comprising 77 faculty members. Self-assessment Staffordshire Evaluation of Teaching Styles questionnaire was used for data collection. SPSS version 15.0 was used for analysis of categorical variables and t-test and analysis of variance were used to compare data variables.

Results: Of the total, 28 (36.4%) teachers preferred all round flexible and adaptable style; 19 (24.7%) preferred student-centred, sensitive; 4 (5.2%) official curriculum; 5 (6.5%) straight facts no nonsense; 6 (7.8%) big conference; 1 (1.3%) one-off; and 14 (18.2%) mixed. Percentage of 'all round flexible and adaptable' was higher among females, senior faculty and clinical sciences when compared to males, junior faculty and basic sciences. However, females, junior faculty, and basic science teachers attained significantly higher in official curriculum scores compared to males, senior faculty, and clinical sciences respectively. Similarly, basic sciences teachers attained significantly higher in big conference teaching style score compared to clinical sciences teachers ($p < 0.05$).

Conclusion: Traditional curriculum does not support all round flexible and adaptable teaching style. Gender, curriculum, teaching strategies and faculty rank of the teacher influence the teaching style. To train teachers, effective faculty development should be done in medical colleges.

Keywords: Teaching, Undergraduate, Medical education, Teachers, Pakistan. (JPMA 63: 1409; 2013)

Introduction

One of the many purposes of medical education is improvement of healthcare by producing self-directed, life-long learners. However, current educational practices are responsible for promoting dependency than self-directed creativity.¹ Previous studies have suggested that undergraduate teaching does not sufficiently equip medical students with skills and competencies they require.^{2,3} In medical educational realm teaching has been a least preferred profession among medical graduates.^{4,5} Though those who are involved in teaching are frequently specialised in their respective fields, they are neither trained as teachers nor are aware of the adult learning principles. This may lead to students' dissatisfaction during their academic training years.^{6,7}

Educational environment not only depends on curriculum, physical factors and teaching quality, but also on individual teacher's role modelling, enthusiasm and teaching style (TS).⁸ According to a study, TS is defined as "An identifiable set of classroom behaviours associated with and carried out by the instructor".⁹ It includes

behaviours like presenting information, planning subject matter and conducting learning activities. However, intentionally or unintentionally every teacher feels comfortable in his own preferred TS.¹⁰ A study has described two categories of teachers; formal and informal. Formal teachers show a structured approach, adherence to rules, well-prepared lessons, clear in setting objectives and try to control the student outcomes. Informal teachers focus on self-expression, discovery and enthusiasm among learners. One of the keys of effective teaching is to demonstrate in both ways and transform into a flexible teacher.¹¹

Teaching can be categorised generally into a traditional or a constructivist pedagogical model.¹² Traditional pedagogy is teacher-centred or content-oriented in which teacher delivers knowledge whereas students receive passively. Constructivist pedagogy is student-centred or learning-oriented in which both teachers and students share responsibilities actively in the learning process. It has been observed that students struggle in varying their learning style (LS) and understanding concepts according to different teachers they encounter.¹³ This mismatch between teaching and learning leads to frustration, behavioural problems and drop-outs.⁷ However, students' improved attitudes, better work habits and higher test scores could be achieved

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when teaching instructions are matched with the students' LS preferences.¹⁴ To match all the students' LS, teaching should be done in a flexible TS by using a variety of teaching methods and styles.¹⁵ In this way, all learners will be encouraged to adapt multiple LS and lifelong learning.

Although there are numerous studies and models of TS in education, but only a few are related to medical education. Out of these researches, the Staffordshire TS model is much relevant as it is derived from theoretical aspects of TS and observed findings from healthcare teachers.¹¹ It identifies six discrete TS: All round flexible and adaptable teacher; the sensitive, student-centred teacher; official formal curriculum teacher; straight facts, no nonsense teacher; big conference teacher; and one-off teacher.

According to the originator, an all round flexible and adaptable teacher effectively uses different teaching activities, is comfortable teaching both peers and juniors, and is very aware of the way the whole environment affects both teachers and learners. The sensitive, student-centred teacher prefers teaching in small groups, with emotions to the fore using role-play and drama, and is not comfortable doing straight presentations. The official formal curriculum teacher is very well prepared as a teacher, likely to be accredited, is very aware of and teaches to the formal curriculum and follows external targets for teaching. The straight facts, no nonsense teacher likes to teach well-defined facts, with straight talking, concentrating on specific skills and much prefers not to be involved with multi-disciplinary teaching and learning. The big conference teacher likes to stand up in front of a big audience and does not like sitting in groups or one to one teaching. The one-off teacher likes to teach small self-contained bits of teaching, often adhoc and on a one-to-one basis, with no props to help and no follow-up. Those respondents who gained similar highest scores in two or more of the TS were categorised as mixed teaching style.

The rationale of this study was to provide practical example of using TS inventory to find out preferred TS among faculty members in a medical college setup and the effects of curriculum, gender, academic rank and faculty on teaching and learning. Promoting self-awareness among teachers regarding their TS, improvising it according to the needs, and provide administrative authorities to be better equipped to prepare effective teachers were few of the added utilities of the study. Moreover, literature search did not reveal such a study having been reported from Pakistan.

Subjects and Methods

The observational cross-sectional study was carried out to assess and compare TS in one of the private medical and dental colleges of Karachi, Pakistan, during June to August 2011. All basic and clinical faculty members were invited to participate through a circular explaining the objectives of the study. The researchers then approached all the 92 faculty members who initially volunteered for the study.

Staffordshire Evaluation of Teaching Styles (SETS) questionnaire, a self-assessment tool, was used to identify the preferred TS with high validity and reliability (Cronbach's $\alpha=0.901$).¹¹ It contained 24 items rated on 5-point Likert scale. Out of the total, four items related to each of the style can be summed up to determine a personal score for each preferred style.

The questionnaires were handed over to the respondents individually and they were informed about the purpose of the survey by plain language statement (PLS) attached with the questionnaire. The researchers further explained the questions whenever considered necessary. Written consent was taken from the respondents while confidentiality and anonymity were assured. For each individual, preferred TS was identified by adding up the numbers scored in four items related to each of the style, hence the TS that got the maximum marks was identified as the preferred TS of that individual.

The respondents were grouped and compared according to their gender, academic rank and faculty. Academic rank included junior and senior teachers. Lecturers, Registrars, and Resident Medical Officers (RMOs) were grouped as junior teachers, while Assistant Professors, Associate Professors and Professors were taken as senior teachers. The whole faculty was divided according to the basic and clinical subjects.

Data was sorted, entered and analysed into SPSS version 15. Means $\pm$ SD of quantitative variables (teaching scores), and frequency and percentage for qualitative variables (TS, gender, academic rank and designation) worked out. Chi-square/fisher exact tests were used to compare qualitative variables, and student t-test/analysis of variance (ANOVA) for quantitative variables. The research was approved by the institutional Ethics Research Committee.

Results

Out of the total 108 faculty members, 92 (85%) initially volunteered to take part in the study. However, 15 (16.3%) teachers submitted incomplete forms, refused to fill them, or did not return the questionnaire, and, hence, were not

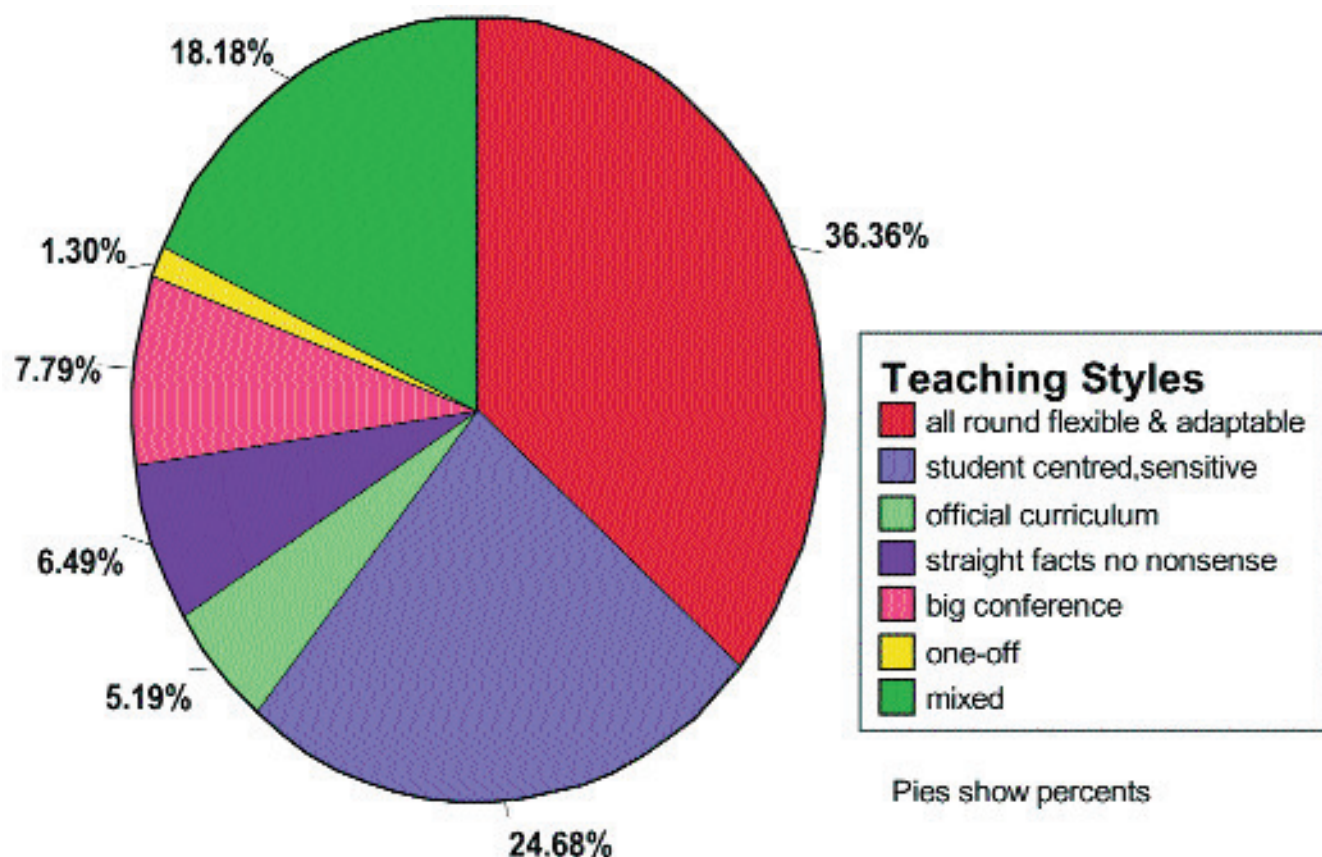


Figure-1: Teaching Style Preferences Among Medical Teachers.

included in the study. The response rate in terms of overall faculty, as such, 71%. Out of total 77 respondents, males and basic science teachers were 43 (55.8%), compared to female and clinical sciences faculty members 34 (44.2%). Faculty members included Professors, Associate and Assistant Professors 33 (42.9%), whereas 44 (57.1%) were junior faculty and included Lecturers, Registrars and RMOs.

After computing all scores for individual TS, all round flexible and adaptable TS was found to be the most preferred 28 (36.36%), while one-off was the least preferred 1 (1.30%) (Figure-1).

Different TS were compared with gender, academic rank, and faculty (Table-1). Number of teachers having all round flexible and adaptable TS were equal among gender, academic rank, and faculty, but higher proportions were found among females 14 (41.2%), senior faculty members 14 (42.4%), and among teachers of clinical sciences 14 (41.2%) when compared to males 14 (32.6%), junior faculty 14 (31.8%), and basic science

teachers 14 (32.6%). Similarly, proportion of teachers favouring Student-centred, sensitive TS were found to be more among males 12 (27.9%), senior faculty 9 (27.3%), and clinical sciences 11 (32.4%) compared to females 7 (20.6%), junior faculty 10 (22.7%), and basic sciences 8 (18.6%). As more teachers had more than one TS preference, a mixed style was evolved and was found to be considerable among males 8 (18.6%), junior faculty, 9 (20.5%), and basic sciences 10 (23.3%) compared to females 6 (17.6%), senior faculty 5 (15.2%), and clinical sciences 4 (11.8%). However, none of the comparisons were found to be statistically significant.

Mean of the sum of scores achieved in each TS by the respondents were also compared (Table-2). Teachers scored significantly higher in all round flexible and adaptable TS compared to official formal curriculum, straight facts-no nonsense, big conference, and one-off TS. One-off TS had significantly low scores compared to all other styles. Keeping in mind that the highest score achieved by the teachers was in all round flexible and adaptable TS (15.8 ± 2.9), statistically significant differences

Table-1: Comparison Among Different Groups of Teachers.

Teaching Style	Gender		Academic Rank		Faculty	
	Male n=43 (%)	Female n=34 (%)	Senior Faculty n=33 (%)	Junior faculty n=44 (%)	Basic science n=43 (%)	Clinical science n=34 (%)
All round flexible & adaptable	14 (32.6)	14 (41.2)	14 (42.4)	14 (31.8)	14 (32.6)	14 (41.2)
Student centred, sensitive	12 (27.9)	7 (20.6)	9 (27.3)	10 (22.7)	8 (18.6)	11 (32.4)
Official curriculum	2* (4.7)	2 (5.9)	2* (6.1)	2 (4.5)	3* (7.0)	1 (2.9)
Straight facts no nonsense	2* (4.7)	3 (8.8)	1* (3.0)	4 (9.1)	3* (7.0)	2 (5.9)
Big conference	4* (9.3)	2 (5.9)	2* (6.1)	4 (9.1)	5* (11.6)	1 (2.9)
One-off	1* (2.3)	0 (0.0)	0* (0.0)	1 (2.3)	0* (0.0)	1 (2.9)
Mixed	8 (18.6)	6 (17.6)	5 (15.2)	9 (20.5)	10* (23.3)	4 (11.8)

*Fisher Exact test used, other compared using chi-square test.

Table-2: Comparison of Sum of Scores of Individual Teaching Styles Among Different Groups of Teachers.

Teaching Style	Overall (n=77)	Gender		Academic Rank		Faculty	
	Mean $\pm$ S.D	Male Mean $\pm$ S.D	Female Mean $\pm$ S.D	Senior Faculty Mean $\pm$ S.D	Junior faculty Mean $\pm$ S.D	Basic science Mean $\pm$ S.D	Clinical science Mean $\pm$ S.D
All round flexible & adaptable	15.8 $\pm$ 2.90*	15.4 $\pm$ 3.02	16.2 $\pm$ 2.73	15.5 $\pm$ 3.25	16.0 $\pm$ 2.63	16.2 $\pm$ 2.67	15.2 $\pm$ 3.13
Student centred, sensitive	14.6 $\pm$ 2.73	14.7 $\pm$ 2.74	14.5 $\pm$ 2.74	14.5 $\pm$ 2.85	14.6 $\pm$ 2.66	14.3 $\pm$ 2.72	14.9 $\pm$ 2.74
Official curriculum	13.6 $\pm$ 2.25	12.9 $\pm$ 2.09	14.4** $\pm$ 2.25	12.9 $\pm$ 2.15	14.2* $\pm$ 2.19	14.1* $\pm$ 2.56	13.0 $\pm$ 1.64
Straight facts no nonsense	13.3 $\pm$ 2.97	12.8 $\pm$ 3.32	13.9 $\pm$ 2.37	12.7 $\pm$ 2.96	13.7 $\pm$ 2.95	13.6 $\pm$ 3.14	12.8 $\pm$ 2.74
Big conference	13.9 $\pm$ 2.52	13.8 $\pm$ 2.59	14.2 $\pm$ 2.43	13.7 $\pm$ 2.56	14.2 $\pm$ 2.50	14.8** $\pm$ 2.15	12.9 $\pm$ 2.60
One-off	9.4 $\pm$ 2.37*	9.8 $\pm$ 2.47	8.8 $\pm$ 2.17	9.3 $\pm$ 2.12	9.4 $\pm$ 2.58	9.3 $\pm$ 2.38	9.4 $\pm$ 2.41

Shaded cells are statistically significant at the 0.05 level or lower.

** p<0.01, * p<0.05.

were found in the scores of official curriculum and big conference TS. Females ($p<0.005$), junior faculty ($p<0.012$), and basic sciences ($p<0.043$) teachers attained significantly higher in official curriculum TS scores compared to males, senior faculty, and clinical science respectively. Similarly, basic science teachers attained statistically significant ($p=0.001$) scores in big conference TS compared to clinical sciences teachers.

Discussion

Challenges faced by medical teachers are diverse and tiresome compared to other higher education teachers. Some of the key challenges for medical teacher are lack of time, teaching in the middle of busy clinical workloads, conflict between patient's care and student's needs, keeping up to date with educational requirements and advances in teaching, learning and assessment, varying expectations from students and demands from the supervisory body.¹⁶

Exercising varied TS not only promotes adaptability and lifelong learning, but can also be very effective in dealing with learner's needs according to their varied LS and approaches.¹⁷ In the present study, only 36% teachers had

all round flexible and adaptable as their preferred TS. However, teachers overall gained significantly higher scores in all round flexible and adaptable TS against all the TS except sensitive, student-centred. This may be due to traditional curriculum, based more on didactic lectures that is practised at the set-up where data was collected. Traditional lectures or problem-based learning sessions both offer different challenges, setting apart the role of a teacher.¹⁸ Nevertheless, meta-skill of using varied TS according to the situation so as to create supportive educational environment for learners is the distinctive trait of a teacher who uses all round flexible and adaptable TS.¹⁹

Studies on gender differences among teachers of colleges and universities suggest that females are more likely to use interactive teaching techniques such as small-group discussions, while males use less personal approaches such as lectures.²⁰ Moreover, male teachers are more dominant and demanding compared to females who are more informal and open toward students and their ideas.²¹ In the present study, a higher proportion of females had all round flexible and adaptable as the preferred TS. This may be due to intrinsic quality of

females to stress higher order thinking skills and active learning in their teaching and use of varied educational practices more efficiently than males.²²

The present study showed that senior faculty had higher percentage of teachers having all round flexible and adaptable as a preferred TS than the junior faculty. A greater flexibility is shown among experienced teachers than the novices, which may be due to more efficient "top-down" and "bottom-up" information processing theory.²³ Earlier studies have also suggested that expert teachers' pedagogical knowledge is more elaborate, rich and integrated compared to the novices.^{23,24}

Novice teachers tend to gain similar scores for all the six Staffordshire TS.²⁵ In the same way, interrelated finding of our study was the presence of mixed TS in higher proportions among juniors compared to the senior faculty, validating the multiple preferences of TS by the novices. Few of the possible reasons could be that as novice teachers are yet to evolve their own specific style, they either try to use the approach of their own way of learning²⁶ or impersonate TS similar to those used by their own teachers.²⁷ Unlike novices, experienced teachers have rich, and integrated subject-specific knowledge, and they have large collection of teaching strategies which they use efficiently to teach specific concepts.²⁸ However, discovering, experimenting and taking up challenging tasks during the teaching career could be the means of gaining experience and maturity in the TS.²⁴

To study TS differences in a different way, and to see the fraction of each style among the respondents in more detail, sum of the scores by each respondent achieved in each TS were compared with each other and among the earlier mentioned factions. Significantly higher official formal curriculum scores were gained by females, junior faculty and basic sciences compared to males, senior faculty and clinical sciences teachers. This finding may signify that teachers focus more on the content of their respective fields than about instructional strategies. Students learn by incorporating or differentiating new concepts with the already existing ones while curriculum-centred teaching can narrow conceptual abilities of the students by stressing on straight facts rather than meaning.¹³

In addition, TS differences could be due to the nature of the course taught.²⁰ This was apparent in our study as basic sciences teachers gained significantly high scores in big conference TS compared to clinical teachers. Teaching large groups through lecturing is a major source of delivering knowledge to the students in a traditional curriculum, and is more common in basic sciences rather

than clinical sciences teaching which also includes bedside teaching. Although lectures provide basic concepts and ideas in a cost-effective way, they have a disadvantage of passive learning in which teachers talk and students listen. Furthermore, lectures do not support problem-solving, teamwork and communication skills when weighted against problem-based learning sessions.^{29,30} Cognitive studies have also supported other pedagogical techniques instead of lecturing that can address varied LS, but alternative strategies like questioning and discussion, short demonstration and ungraded exercise can be incorporated in the lecture to promote active learning, motivation and long-term retention of information.³¹

Medical education revolutionist Abraham Flexner³² once wrote, "though medicine can be learned, it cannot be taught", stressing the need of constructive and self-learning in medical education. This could only be achieved by transforming the role of a teacher from a scholar and expert to a facilitator and guide. Hence to become an effective medical teacher, one should endeavour to fulfil the diverse learners' needs by showing flexibility and adaptability in their teaching, knowing about their weaknesses, practising self-reflection, and spending sufficient time with the learners. Moreover, universities should devise faculty development programmes, making junior faculty more productive and to continue their career growth with the institution.³³ The results of our study warrant careful interpretation due to the limitations which include self-assessment questionnaire which is generally based on self-perception of medical teachers and data from one particular medical school which could be a source of bias.

Conclusion

The study may serve as the basis for improving traditional curriculum by incorporating new pedagogical strategies. Investigating TS in medical teachers and their influence on teaching and learning can also be explored.

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