

Teachers' Perspectives of Attributes of Effective Medical Teachers

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Abstract

A teacher's perspective about what makes an effective medical teacher is changing. Medical teachers are not data-banks of facts and experience, imparting knowledge passively. It was decided to see what our faculty (Malaysian and non-Malaysian) thought were attributes of an effective medical teacher.

Methodology:

This was a cross-sectional study in a private medical school in Malaysia. We obtained Ethics' Committee approval. The estimated sample size was 73. Faculty willing to participate after verbal informed consent were included. Thirty attributes were rated on a 5-point Likert scale. Attributes were grouped into four categories: "teaching-related", "personal traits", "interaction with students", and "teacher as a doctor".

Results:

One hundred and four faculty completed the questionnaire (63.5% male, 36.5% female, 20.2% preclinical, 25% surgical, 25% medical, 10.6% public health-family medicine and 19.2% general studies lecturers).

Top ranking attributes selected from the percentage of faculty who rated each strongly were "enabled to understand basic principles and enthusiastic" (77.9%), "made subject meaningful to practice", and "encouraged students to participate" (76%), "ethical" (73.1%), "presented logically" (69.2%), "motivated students" (68.3%), "spoke loudly and clearly" (67.3%), "passionate" (65.4%), "showed concern for students" (64.4%), "no bias" (63.5%), "punctual" and "gave feedback" (61.5%).

Overall ranking for grouped attributes in descending order was "personal traits", "teaching-related", "interaction with students" and "teacher as a doctor".

Conclusions and take home message:

Teachers in this study, did not rank knowledge among the top 10 attributes overall. Awareness of perspectives of teachers will help administrators to organize appropriate staff development activities.

Key words:

medical teacher, attributes

Introduction

All doctors have a professional obligation to educate and train doctors, students and non-medical personnel. [1] Twelve roles of a teacher grouped into six areas have been identified: information provider, role model, mentor, assessor, planner, resources developer. [2]

Innovative teaching methods (integrated learning activity, electives, special study module for research, student-led tutorials, small group teaching) are practiced in our college. Our teachers hail from different backgrounds; a quarter are non-Malaysian. Not all have had training in medical education. We decided to study what our teachers thought were attributes of effective medical teachers; this would help in planning staff development activities.

Methodology

This was a cross-sectional study including preclinical, clinical and general studies lecturers in the faculty of medicine in a private medical school in 2014. The objectives of our study were explained to them and willingness to complete the questionnaire was taken as consent. Ethical clearance was obtained from the institutional ethics committee.

A new questionnaire based on literature review [2, 3, 4, 5, 6] and consultation with experts in medical education was used. It included demographic data such as age, gender, race, experience in the profession and teaching, subjects taught, medical education training received, whether full time or part-time and the 30 attributes on a 5-point Likert scale from “Strongly agree” (5) to “Strongly disagree” (1).

Sample size estimated using EpiInfo software with an expected frequency of agreement with the selected attributes as 80% and the worst acceptable agreement as 70%, for 95% confidence interval, was 61

with an additional 20%, taking incomplete responders into consideration.

The data was tabulated and analysed using SPSS 17. The proportion of lecturers who chose “Strongly agree” for each attribute was analysed and the top ten attributes were identified. For those tables with any cells having an expected frequency less than 5, Fischer Exact test was used and for others, Pearson Chi Square was used to test statistical significance.

The attributes were grouped into four categories: “interaction with students”, “personal traits”, “teacher as a doctor” and “teaching-related”. As normality tests showed skewed distribution, nonparametric tests were used. The median and interquartile range were used to identify the grouped attributes in descending order.

Results

Out of 104 lecturers who completed the questionnaire, 63.5% were male, 36.5% were female, 20.2% preclinical, 25% surgery-based, 25% medicine-based, 10.6% public health-family medicine and 19.2% general studies lecturers. There were 32.7% Malays, 15.4% Malaysian Chinese, 25% Malaysian Indian, 1% other Malaysian and 26% expatriate Asians. Almost 40% had medical education training and 35.6% had partial training. Tables 1 and 2 give details about the distribution according to age groups and experience.

Overall, the top ranking attributes selected from the percentage of faculty who rated each of them strongly were:

1. “enabled to understand basic principles” and “was enthusiastic” (77.9%)
2. “made subject meaningful to practice”, and “encouraged students to participate” (76%)
3. “was ethical” (73.1%),

4. “presented material logically and clearly” (69.2%)
5. “motivated students to read” (68.3%)
6. “spoke loudly and clearly” (67.3%)
7. “was passionate” (65.4%),
8. “showed concern for students” (64.4%)
9. “had no bias” (63.5%)
10. “was punctual” and “provided feedback” (61.5%).

The ranking for grouped attributes in descending order was “personal traits”, “teaching-related”, “interaction with students” and “teacher as a doctor”. The median values and interquartile range for grouped attributes, ranking overall and according to gender is given in Table 3. There were no statistically significant difference in the mean scores of the grouped attributes in different demographic categories. Table 4 gives the ranking overall and according to gender. Table 5 gives the statistically significant differences in attributes in different demographic categories (p value < 0.05)

Discussion

Being a teacher requires time and effort. [7] In medical education, attention must be directed towards the teaching process as well as the content. [3] Majority of medical teachers have had no formal training to teach and are sceptical about learning theory. [3] Teachers are not data banks of facts and experience, imparting knowledge passively. [3]

Teachers in the study by Singh et al selected “knowledge” as the most desired attribute. [8] Jahan, et al reported that their teachers ranked “knowledge”, “clinical competency” and “interest in teaching” as the most desired attributes. [9] However, our teachers did not rank “knowledge” as one of the top 10 desired attributes overall. It was ranked 14 probably because teachers are currently viewed more as facilitators than just information providers. This is especially so

in schools with innovative curricula.

Personal attributes are considered more important to be an effective teacher. [5]

Female lecturers ranked knowledge at 7. However the difference in preference for “knowledge” by female lecturers was not statistically significant.

Overall, 13 attributes were ranked as the top 10 desired attributes. Males ranked 17 and females 20 as the top 10 desired attributes ranking more than one attribute at a similar level. Among the grouped attributes, personal traits were ranked high in this study. Attributes related to interaction with students was ranked 2 by female and ranked 3 by male lecturers. Teaching-related attributes were ranked 2 by male and 3 by female lecturers (Table 3). However, there was no statistically significant differences in the demographic groups in these rankings. Online teaching methods were ranked high only by about 27.9% of the faculty probably because of the lack of seamless internet connectivity. However, use of online teaching methods was ranked significantly higher by full-time than part-time lecturers though the overall ranking was 19 out of 24. Younger faculty below 30 years of age ranked the attribute “informal” quite low. Distribution of hand-outs was least preferred by surgeons followed by physicians. The attribute “only teaching” was ranked 29th. Significantly higher number of faculty above 51 years selected this probably because they were nearing retirement or were already retired. “Teaching and clinical / lab work” was ranked 23rd overall and lecturers with more than 10 years’ professional experience ranked it significantly higher than those with less experience. Providing feedback which started finding a place in literature after 1970, [5] was included as one of the top 10 attributes by our teachers.

The disadvantages of this study are that it was done in a single medical school and the

results therefore, cannot be generalised. As a new questionnaire was used, it needs to be evaluated by further studies. The advantage was that adequate number of faculty members in all demographic categories responded and the results could form the basis for a faculty development programme suitable to our needs.

Conclusions and take-home message

In our medical school, we should focus on having more teachers working in the clinical setting where possible, to serve as clinical role models. The reasons for poor ranking for online teaching needs to be explored further and staff training may be required to improve the awareness and skill in this area,

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Table 1: Age distribution of lecturers

Experience in years	Number	Percentage
30 years or less	6	5.8%
31-50 years	52	50%
51-70 years	43	41.3%
70 years or more	3	2.9%
Total	104	100%

apart from improving the internet connectivity.

Majority of staff development programmes focus on teaching improvement and less attention is paid to personal development.

[10] Excellent teaching is characterised by inspiring, supporting, actively involving and communicating with students. [5] Many of the behaviours of students are similar to those of a child following a parent. [5]

Knowledge alone is unlikely to make teaching effective. Personal traits of medical teachers are equally important for effective teaching.

Table 2: Professional and teaching experience – percentage of total

Experience in years	Professional	Teaching
5 years or less	7.7%	25%
6-10 years	18.3%	33.7%
11-20 years	23.1%	25%
21 years or more	51%	16.3%
Total	100%	100%

Table 3: Ranking of grouped attributes overall and according to gender

Grouped attributes	Gender	No.	Ranking	Median score	Interquartile range
Personal traits - 6 ("loud and clear", "no bias", "punctual", "patient", "hard- working", "not intimidating")	Male	66	1	4.67	0.67
	Female	38	1	4.5	0.83
	Overall	104	1	4.67	0.79
Teaching-related - 10 ("understand basic principles", "makes subject meaning-ful", "presents logically", "clearly", "enthusiastic", "recommends references", "good pace", "used audio-visual aids", "material not in books", "used white board", "used online methods")	Male	66	2	4.4	0.6
	Female	38	3	4.4	0.63
	Overall	104	2	4.4	0.6
Interaction with students – 9 ("Treated students with respect", "concern for students", "accessible", "motivates", "hand-outs", "encouraged student participation", "feedback", "informal", "firm")	Male	66	3	4.33	0.58
	Female	38	2	4.44	0.67
	Overall	104	3	4.33	0.67
Teacher as a doctor – 5 ("expert knowledge", "ethical", "passionate", "teach and work", "only teach")	Male	66	4	4.2	0.6
	Female	38	4	4	0.8
	Overall	104	4	4.2	0.8

Table 4: Attribute ranking overall and according to gender

No .	Attributes (Attribute groups in brackets)	*Percentage and Ranking					
		Over all %	Ranki ng	Male s %	Ranki ng	Femal es %	Ranki ng
1	Enables students to understand the basic principles of the topic (T)	77.9	1	81.8	1	71.1	3
2	Enthusiastic about teaching (T)	77.9	1	80.3	2	73.7	2
3	Makes the subject meaningful to clinical practice (T)	76	2	81.8	1	65.8	5
4	Encourages students to participate in class (IS)	76	2	77.3	3	73.7	2
5	Ethical (TD)	73.1	3	77.3	3	65.8	5
6	Presents the material logically and clearly in an organised way (T)	69.2	4	74.2	4	60.5	6
7	Motivates students to read (IS)	68.3	5	63.6	8	76.3	1
8	Speaks loudly and clearly (P)	67.3	6	66.7	6	68.4	4
9	Passionate about own work (TD)	65.4	7	62.1	9	71.1	3
10	Shows concern for the students (IS)	64.4	8	68.2	5	57.9	7
11	Has no bias (P)	63.5	9	60.6	10	68.4	4
12	Punctual (P)	61.5	10	65.2	7	55.3	8
13	Provides constructive criticism / feedback (IS)	61.5	10	62.1	9	60.5	6
14	Accessible to students seeking advice (IS)	59.6	11	63.6	8	52.6	9
15	Treats students as equals and with respect (IS)	59.6	11	62.1	9	55.3	8
16	Hard working (P)	58.7	12	60.6	10	55.3	8
17	Recommends appropriate references for reading (T)	57.7	13	50	14	71.1	3
18	Shows an expert knowledge of the subject (TD)	53.8	14	51.5	13	57.9	7
19	Patient (P)	53.8	14	53	12	55.3	8
20	Uses audio visual aids effectively (T)	52.9	15	57.6	11	44.7	10
21	Adopts an appropriate pace (T)	43.3	16	43.9	16	42.1	11
22	Not intimidating (P)	43.3	16	45.5	15	39.5	12
23	Teaches and also does his/her clinical / lab duties (TD)	39.4	17	39.4	17	39.5	12
24	Includes material not readily accessible in books (T)	36.5	18	39.4	17	31.6	13
25	Uses Online learning methods LMS (T)	27.9	19	28.8	18	26.3	15
26	Firm with students (IS) ($p < 0.05$)	26	20	24.2	19	28.9	14
27	Gives hand outs (notes) (IS)	19.2	21	16.7	21	23.7	16
28	Informal with students (IS)	18.3	22	19.7	20	15.8	17
29	Committed only to teaching, even if he/she were a clinician / lab person (TD)	16.3	23	16.7	21	15.8	17
30	Prefers the white board (T)	11.5	24	12.1	22	10.5	18

Note: * Percentage of teachers who strongly recommended the attribute No.: Number **Attribute groups in brackets:** IS: interaction with students; P: personal; T: teaching related; TD: teacher as a doctor

Table 5: Statistically significant differences in attributes in different demographic categories (p value < 0.05)

Demographic characteristics	Statistically significant differences
Age	The attribute “only teaching” was ranked significantly higher by lecturers in the age group 51 – 70 years than other age groups. The attribute “informal” was ranked significantly higher by lecturers older than 50 years compared to younger age groups.
Gender	The attribute “firm” was ranked significantly higher by female than male lecturers.
Discipline	The attribute “making the subject meaningful to practice” was ranked significantly lower by lecturers from general studies compared to those from other categories. Distributing hand-outs was ranked significantly lower by lecturers from the clinical side compared to those teaching other subjects.
Race	The attribute “accessibility to students” was ranked significantly lower by Malaysian Chinese compared to lecturers from other races.
Professional experience	Ranking by lecturers with more than 10 years’ professional experience for the attribute “clinical / lab work with teaching” was significantly higher compared to other experience categories.
Full / Part-time	Use of online teaching methods was ranked significantly higher by full-time than part-time lecturers. However, it received an overall ranking of 19 of 24 only.

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