

# Dental students' perceptions on the contribution and impact role of a clinical teacher

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## Abstract

**Objectives:** This study was conducted in University of Malaya to evaluate student perceptions on the contribution and role of an effective clinical teacher based on the cognitive apprenticeship model in clinical practice.

**Methods:** Self-administered questionnaires were distributed to 233 undergraduate dental students involved with clinical teaching. This modified and validated questionnaire focusing on students' learning environment was used in order to gain relevant information related to dental clinical teaching. Six domains with different criteria applicable to clinical teaching in dentistry were selected consisting of modelling (four criteria), coaching (four criteria), scaffolding (four criteria), articulation (four criteria), reflection (two criteria) and general learning environment (six criteria). Data analyses were performed using IBM SPSS Statistics 20.

**Results:** Majority of the students expressed positive perceptions on their clinical learning experience towards the clinical teachers in the Faculty of Dentistry, University of Malaya, in all criteria of the domains. Few negative feedbacks concerning the general learning environment were reported.

**Conclusion:** Further improvement in the delivery of clinical teaching preferably by using wide variety of teaching-learning activities can be taken into account through students' feedback on their learning experience.

## KEYWORDS

dental education, dental students, effectiveness, learning environment

## 1 | INTRODUCTION

Global change in dental treatment needs has affected dental education in many ways. Teaching and learning in a clinical setting over 3-4 years prepare a dental student to become a clinically competent dentist. This process is a challenge not only for the student but also for the clinical teacher.<sup>1</sup> In general, dental clinical settings provide most appropriate learning environment to enable students integrating their knowledge of basic dental science and operative dental technique skills.<sup>2</sup>

Learning process of dental students' is greatly influenced by the environment of their clinical practice such as the experience of carrying out various clinical procedures and their interactions with people which include patients, clinical teachers, clinical support staff and fellow peers.

In order to deliver safe and effective teaching in a clinical setting, a good level of supervision and communication should be present.<sup>3</sup> Effective teacher is defined as "someone who can impart his/her knowledge and skills successfully and able to bring about appropriate changes in knowledge, skills, attitudes and behaviours in the

learners.<sup>4</sup> Clinical teaching can be a “formidable” task for professional clinicians, since clinical teachers are expected to educate their clinical students with diverse level of knowledge and instruction in such a manner which promotes proper clinical practices.

Effective clinical teachers should be skilful in guiding clinical students, bridging teaching and learning as well as initiating appropriate changes in knowledge, communication, technical skills, attitudes and behaviours in daily practice for the benefit of patients and communities.<sup>1</sup> It is clinical supervisors' *role to create* a good environment for clinical students to try new things and at the same time promote a “learning community” environment in order to achieve effective clinical teaching.<sup>5</sup>

Lack of proper models addressing the teaching approach taken by clinical teachers was highlighted by Graffam.<sup>6</sup> Authors also suggested that a sufficient specific teaching model would be able to guide clinical teachers to fulfil their role. The main idea of original cognitive apprenticeship model is to “*bring the thinking to the surface, to make it visible*” through “experts' internal cognitive processes.” This approach may facilitate students in observing, performing and practicing clinical procedures under supervision.<sup>7</sup> The six proposed teaching methods: modelling, coaching, scaffolding, articulation, reflection and exploration of the cognitive apprenticeship, are designed to help students to obtain both cognitive and meta-cognitive skills.<sup>7</sup> This model is recommended as a useful instrument for the use of studies focusing on evaluation, feedback, self-assessment and faculty development in clinical teaching.<sup>8</sup> It assesses how the students relate their knowledge to their clinical skills through modelling, coaching, scaffolding, articulating, reflecting and exploration domains.

The aim of this study was to evaluate students' perceptions on the contribution and role of an effective clinical teacher based on the cognitive apprenticeship model.

## 2 | METHODOLOGY

Ethical approval from the Medical Ethics Committee, Faculty of Dentistry, University of Malaya, was obtained prior to the commencement of this study (DF CD1213/0065(U)).

### 2.1 | Study population

This study was conducted in University of Malaya using purposive sampling which involved 233 students. The samples consisted of undergraduate dental students in year three (n=70), year four (n=82) and year five (n=81). These students treated patients under the supervision of experienced clinical teachers. The year three students were exposed to basic dental clinical procedures, for example examination, diagnosis and treatment planning, uncomplicated restorative procedures and simple restorations. Later in year four, more complex procedures were introduced such as single-rooted root canal treatment, scaling and root planing and management of deep carious lesions. The final year students were then expected to carry out more complicated restorative procedures such as molar root canal treatment,

fixed prosthodontics and minor oral surgery. The first and second year dental students were excluded from participating in this study as they do not treat patients in clinics.

### 2.2 | Questionnaire

The questionnaire was adopted from the cognitive apprenticeship model in clinical practice by Stalmeijer and co-workers.<sup>8</sup> The questionnaire was modified based on the feedback from the pretest of the representative students (clinical years) following which the modified content was agreed on consensus by a small group of selected clinical teachers and validated for use in this study. The modified questionnaire focused on the students' learning environment in order to gain relevant information related to dental clinical teaching. The selected six domains relevant to clinical teaching in dentistry consist of modelling (four criteria), coaching (four criteria), scaffolding (four criteria), articulation (four criteria), reflection (two criteria) and general learning environment (six criteria). The descriptor for each domain is shown in Table 1. Students were also asked to express their thoughts regarding effective clinical teaching in open-ended questions. The responses were categorised in two main themes after thorough deliberation by the authors: quality related and time related.

Questionnaires were administered separately amongst the three clinical years in a lecture hall where brief explanations were given. The participations of students were on voluntary basis and all data were kept anonymous. Instructions were given to rate each item by expressing their agreement using a 5-point Likert scale (1-2=disagree, 3=neutral, 4-5=agree).

### 2.3 | Data processing and analysis

All analyses were performed using IBM SPSS Statistics 20. The descriptive statistics (means and SDs) and cross-tabulation (in percentage) were used to summarise the scores of each levels of study for each question. Pearson chi-square test was used to check the dependence between scores and levels of study and to compare the difference in pattern of scores between any two levels of study.

**TABLE 1** Descriptors for the domains

Domain	Descriptor
Modelling	Act of supervisor demonstrating, and at the same time explaining their judgement and reasoning to the students
Coaching	Act of supervisor observing students performing a task, in which feedback is given during the process
Scaffolding	Act of supervisor providing support according to students' skill and knowledge levels
Articulation	Act of supervisor asking students and stimulating them to articulate their knowledge and reasoning
Reflection	Act of supervisor stimulating students to consider their strengths and weaknesses and how to improvise

Cramer's V correlation coefficient was used to measure the strength of association between categorical variables.

### 3 | RESULTS

Out of 233 clinical students in the dental faculty of University of Malaya, 214 students consented to participate in this survey amongst which 160 are female students and 54 male students, mean age 23.13 with age ranged from 20 to 26 years old. The number of respondents for year three, four and five was 69, 67 and 75, respectively, with 92 per cent respond rate.

Table 2 showed results for all items in modified instrument for evaluating clinical teachers based on the apprenticeship cognitive model.

#### 3.1 | Modelling domain

Majority of the students agreed that the clinical teacher demonstrated *how different skills should be performed* with "agree" score of 73.9%, 65.6% and 70.7% for year three, four and five students, respectively.

Most of the students agreed that *the clinical teacher created sufficient opportunities for the student to observe him/her* with percentage ranged from 52.2% to 69.6% across level of study. However, 12% of year five students disagreed with the criterion.

More than 58% of year three, four and five students agreed with the criterion *clinical teacher was a role model for me* with highest score recorded by year five students at 78.4%. Less than 7% of the students in each year disagreed with this criterion.

#### 3.2 | Coaching domain

For the criterion *observed me while I was performing the task*, 26.9% of the year four agreed with this criterion whilst 55.2% gave a "neutral" score. Similarly, 42% and 40% of year three and year five students gave a "neutral" score for this criterion, respectively.

However, students in all three clinical years agreed with criterion *was willing to teach rather than doing it for you/leaving you alone to do it independently* in which the "agree" score for year three, four and five were 68.1%, 59.7% and 69.4% for the ascending clinical years, respectively.

A similar trend was observed for the criterion *provided me better insight in areas of my performance that need to be improved* with more than 68% of students in all three clinical years agreeing to the criterion.

#### 3.3 | Scaffolding domain

More than 55% of the students (year three, four and five) agreed with all four criteria with criterion *allowed me to perform tasks independently* having the highest score. None of the year four students gave a "disagree" score for this criterion.

In total, 7.2% of the year three students disagreed with the criterion *was supportive when I experienced difficulties with a task*, whilst the year five students gave a disagree score of 5.3%. However, only 3% of year four students disagreed with this criterion.

#### 3.4 | Articulation domain

All the year three students gave a "neutral" or "agree" score for the criterion *asked questions to increase my knowledge and understanding* and 5.6% of year five students disagreed with this criterion.

In total, 75% of the year five students agreed that the clinical supervisor stimulated them to ask question to increase their knowledge and understanding followed by 62.3% and 56.7% of year three and year four students, respectively.

#### 3.5 | Reflection domain

A total of 95.4% of the year four students agreed with the criterion *stimulated me to think about my own strengths and weaknesses*. Only 1.4% of year three and year five students disagreed with the criterion.

As for the second criterion in the same domain, 73.6% and 72.5% of year five and year three students, respectively, agreed that the clinical teacher stimulated them to think about how to improve their strengths and weaknesses. In total, 3.0% of year four students disagreed with the criterion whilst 28.8% of the cohort gave a "neutral" score.

#### 3.6 | General learning environment domain

Some 14.9% of year four students disagreed that the clinical teacher established an environment where he/she felt free to ask questions or make comments. Less than 50% (47.7%) of year four students agreed with this criterion. Only 38.9% of year four students agreed that the clinical teacher took enough time to supervise them, majority giving a "neutral" score (44.8%). The highest percentage of "disagree" for this criterion was given by the year five students (22.2%). Only 37.3-50.0% of the students agreed that the clinical teacher was constantly available in the clinic.

Apart from that, only 32.8% to 54.5% of students at different level of study agreed that the clinical teacher is punctual for clinical session whilst others either gave neutral score or disagree to the criterion.

The results of the students' responses for clinical performance/progress domain by year of study are presented in Table 3. Under the operator heading, a high percentage of year five students (42.3%) agreed to criterion *my progress regarding the clinical schedule/requirements is very slow* in contrast to year three (7.2%) and year four (6.0%) students. Similar patterns of responses were observed in all three levels of study for criteria *patient failed to attend on the day of the appointment*, *poor time management* and *did not prepare for the clinics* where the majority disagreed to the first two criteria and majority agreed to the last item. Most of the students across the three levels of study ranging from 40.0% to 56.5% were not satisfied with the performance of their assistant in the clinics. Only 8.7% to 27.2% of the students believed that their assistants are competent and reliable. The majority of year three students (52.2%) agreed to the item *lack of materials/instruments needed for treatment*, whereas only 26.9% and 19.1% of year four and year five, respectively, did.

**TABLE 2** Students' responses to all items that represent modelling, coaching, scaffolding, articulation, reflection and general learning climate domains by year of study

	Year	N	Disagree	Neutral	Agree
<i>Modelling. The clinical teacher...</i>					
demonstrated how different skills should be performed	3	69	4.3	21.7	73.9
	4	67	3	31.3	65.6
	5	75	5.7	25.3	70.7
explained while performing a task, which aspects were important and why	3	69	4.3	8.7	87.0
	4	67	1.5	28.4	70.1
	5	75	4.0	20	76.0
created sufficient opportunities for me to observe him or her	3	69	5.7	24.6	69.6
	4	67	4.5	43.3	52.2
	5	75	12.0	25.3	62.7
was a role model for me	3	69	5.7	27.5	66.6
	4	67	1.5	40.3	58.2
	5	75	6.8	14.9	78.4
<i>Coaching. The clinical teacher...</i>					
observed me while I was performing a task	3	69	14.4	42	43.5
	4	67	17.9	55.2	26.9
	5	75	18.7	40	41.4
provided me with constructive and concrete feedback during direct observation	3	69	4.3	31.9	63.8
	4	67	3.0	35.8	61.1
	5	75	8.0	22.7	69.4
was willing to teach rather than doing it for you/leaving you alone to do it independently	3	69	11.6	20.3	68.1
	4	67	10.4	29.9	59.7
	5	75	10.7	20	69.4
provided me better insight in areas of my performance that need to be improved	3	69	5.9	14.7	79.4
	4	67	1.5	29.9	68.6
	5	75	8.0	17.3	74.6
<i>Scaffolding. The clinical teacher...</i>					
adjusted his/her teaching activities to my level of experience and competence	3	69	11.5	33.3	55.1
	4	67	10.4	31.3	58.2
	5	75	8.0	30.7	61.4
allowed me to perform tasks independently	3	69	2.9	24.6	72.4
	4	67	0	28.4	71.7
	5	75	2.6	22.7	74.7
was supportive when I experienced difficulties with a task	3	69	7.2	29.0	63.7
	4	67	3.0	28.4	68.7
	5	75	5.3	22.7	72.0
gradually decreased the amount of guidance in order to bolster my independence	3	69	8.7	31.9	59.4
	4	67	1.5	41.8	56.7
	5	75	5.3	26.7	68.0
<i>Articulation. The clinical teacher...</i>					
asked me to explain my reasoning and actions	3	69	2.9	24.6	72.5
	4	67	3.0	31.3	65.7
	5	75	5.6	25	69.4
alerted me to gaps in my knowledge and skills	3	69	1.4	20.3	78.2
	4	67	1.5	25.4	73.2
	5	75	4.2	20.8	75.0

(Continues)

**TABLE 2** (Continued)

	Year	N	Disagree	Neutral	Agree
asked questions to increase my knowledge and understanding	3	69	0	24.6	75.4
	4	67	3.0	25.4	71.7
	5	75	5.6	15.3	79.1
stimulated me to ask questions to increase my knowledge and understanding	3	69	4.3	33.3	62.3
	4	67	7.5	35.8	56.7
	5	75	6.9	18.1	75.0
<i>Reflection. The clinical teacher...</i>					
stimulated me to think about my own strengths and weaknesses	3	69	1.4	4.3	78.2
	4	67	0	3.0	95.4
	5	75	1.4	2.8	80.5
stimulated me to think about how to improve my own strengths and weaknesses	3	69	4.3	23.2	72.5
	4	67	3.0	28.8	68.3
	5	75	4.2	22.2	73.6
<i>General Learning Environment. The clinical teacher...</i>					
established an environment where I felt free to ask questions or make comments	3	69	11.5	23.2	65.2
	4	67	14.9	37.3	47.7
	5	75	12.5	30.6	57.0
took enough time to supervise me	3	69	15.9	33.3	50.7
	4	67	16.4	44.8	38.9
	5	75	22.2	27.8	50.0
showed an interest in me as a student	3	69	10.1	29.0	60.8
	4	67	6.0	50.7	43.3
	5	75	13.9	31.9	54.2
treated me and my patient with respect	3	69	4.3	17.4	78.2
	4	67	0	35.8	64.1
	5	75	9.7	22.2	68.1
is constantly available in the clinic	3	69	24.6	29.0	46.4
	4	67	19.4	43.3	37.3
	5	75	23.6	26.4	50.0
is punctual for clinical session	3	69	26.0	33.3	40.6
	4	67	29.4	35.8	32.8
	5	75	29.2	26.4	54.5

N=number of respondents.

The strength of correlation between level of study and the responses for selected criteria is presented in Table 4. There was a significant correlation between criteria "asked questions to increase my knowledge and understanding," "stimulated me to think about my own strengths and weaknesses" and "stimulated me to think about how to improve my own strengths and weaknesses" with disagree responses across levels of study (Table 4). A correlation was also observed for criteria "stimulated me to think about my own strengths and weaknesses," "my progress regarding the clinical schedule/requirement is very slow" and "lack of materials/instruments that are needed for treatment" with agree responses across level of study, but this did not reach significance level. Criterion "stimulated me to think about my own strengths and weaknesses" showed almost moderate correlation with agree responses across level of study ( $V=.299$ ,  $P=.669$ ).

It was apparent that majority (82.4%) of the students perceived that a minimum clinical teacher: student ratio of 1:4 (40.2%) or less will improve the effectiveness of clinical teaching.

Out of the 58% of students who gave a reasoning or justification to their preferred ratio, 33% stated that the noted improvement in effectiveness is related to the quality of clinical teaching, whilst the remaining 25% stated that it is related to better time management of a clinical session (Table 5).

## 4 | DISCUSSIONS

The aim of this study was to examine the perceptions of dental undergraduate students on their clinical learning experience using the

**TABLE 3** Students' responses for clinical performance/progress domain by year of study

Items	Disagree (%)			Neutral (%)			Agree (%)		
	Year 3	Year 4	Year 5	Year 3	Year 4	Year 5	Year 3	Year 4	Year 5
<b>Operator</b>									
My progress regarding the clinical schedule/requirements is very slow	43.5	44.7	19.7	49.3	49.3	38	7.2	6.0	42.3
Patient failed to attend on the day of the appointment	63.2	71.3	80.0	25	19.7	14.3	11.8	9.1	5.7
Poor time management	46.3	38.8	31.0	36.2	43.3	36.6	17.4	17.9	32.4
Unconfident with my own clinical skills	37.7	29.9	22.5	39.1	43.3	36.6	23.2	26.9	40.9
Did not prepare for the clinics	26.5	16.4	17.1	36.8	37.3	27.1	36.8	46.2	55.7
<b>Assistant</b>									
Incompetent	8.7	10.6	22.8	34.8	39.4	35.7	56.5	50.0	41.4
Unwilling to assist/slow	11.5	16.4	24.3	31.9	31.3	27.1	56.5	52.2	48.6
Not well prepared	8.7	17.9	27.2	37.7	34.3	32.9	53.6	48.2	40.0
<b>Materials</b>									
Lack of materials	13.0	34.4	45.6	34.8	38.8	35.3	52.2	26.9	19.1

**TABLE 4** The strength of correlation between level of study and the responses

Items	Agree		Neutral		Disagree	
	V	P-value	V	P-value	V	P-value
Asked questions to increase my knowledge and understanding	-	-	-	-	.237	.012
Stimulated me to ask questions to increase my knowledge and understanding	-	-	-	-	.229	.029
Stimulated me to think about my own strengths and weaknesses	.299	.669	-	-	.244	.015
Stimulated me to think about how to improve my own strength and weaknesses	-	-	-	-	.251	.009
My progress regarding the clinical schedule/requirements is very slow	.101	.819	-	-	.155	.413
Lack of material that is needed for treatment	.183	.324	-	-	.203	.271

V: Cramer's correlation coefficient.

Note: The strength of association: >0.5, high; 0.3-0.5, moderate; 0.1-0.3, low associations. The scores of year 3, 4 and 5 were not statistically different for other questionnaire items (not shown in Table).

instrument that was based on cognitive apprenticeship model by Stalmeijer and co-workers.<sup>8</sup> In the Faculty of Dentistry, University of Malaya, the line of clinical teachers is mainly from resident academic staff, followed by private dental practitioners and specialist.

In total, 69 resident academic staff were involved in clinical teaching, of whom 36.7% of them have completed clinical specialist training in their field of choice as well as a doctorate degree. A further 20.3% of these academic staff is equipped with specialist training and those who have accredited membership in dental practice make up 2.5% of this pool.

Similarly, all part-time clinical teachers who were employed by the faculty had completed specialist training in their field of choice and must have at least 3 years of experience in clinical teaching.

According to Stalmeijer and co-workers,<sup>8</sup> suitable teaching instruments are needed to facilitate clinical teachers in choosing and forming the most effective methods for coaching students in creating an effective learning situation from the teachers' perspectives.

It would be more meaningful if students' perspectives are evaluated since teaching and learning activities are meant for them to acquire appropriate clinical skills at the end of their training. This in turn will provide constructive feedback to the clinical teachers for improving teaching delivery. As for this study, the data and responses which were acquired can be presented to members of the faculty and a guideline can be worked on for future use in enhancing the effectiveness of clinical teaching. Dissemination of such valuable input within the group of clinical teachers can be the way forward in integrating the students' need with the act of clinical teaching.

In this study, the dental students perceived clinical learning environment in the Faculty of Dentistry, University of Malaya, as positive with the majority expressing positive feedback in all criteria of the domains. However, we noticed that the magnitude of agreement was low, less than 50%. The highest score for disagreement was 29.4% and when the score for agreement was less than 50%, greater magnitude of the percentage was seen in the neutral category. These findings

**TABLE 5** Students' responses to effective clinical teacher: student ratio in clinical setting

Percentage		
In your opinion what clinical teacher: student ratio is effective for your clinical settings?		
1:2	16.6%	} 82.4%
1:3	25.6%	
1:4	40.2%	
1:5	8.1%	} 17.6%
1:6	9.5%	
Others	0%	
What was/were the reasons?		
Quality-related factors	33%	
Time-related factors	25%	
No response provided	42%	

Note: Reasons were grouped by factors.

may be explained by the fact that there might be a tendency for these students to show reservation in expressing their opinions which may be influenced by their cultural background. It has been shown that East Asian descents are often described as complacent, polite and quiet despite being educated.<sup>9</sup> This pattern of behaviour might be responsible for these actions of not revealing their true opinion, especially concerning somebody they highly respect. Another study had also suggested that Asian students were less ready to speak up, ask questions and challenge.<sup>10</sup>

Even though majority of the students disagree with the criteria "observe me while I am performing my task," it is inevitable due to the nature of dental treatment performed by the students. It is impossible to provide adequate one-to-one observation when a clinical teacher is supervising a group of paired 12 students in each clinical session. In addition, each pair works simultaneously. To the best of our knowledge, the widely practiced teacher: student ratio for clinical teaching is 1:6.<sup>3</sup> However; there is limited evidence to conclude that 1:6 is the ideal ratio for this type of teaching and learning activity.

In this study, all students felt that a lower teacher: student ratio would contribute to a more effective delivery of clinical teaching. It showed that despite having knowledgeable clinical teachers with superior clinical skills, dental students perceived that a lower ratio may be the one key factor which can determine the outcome of effective clinical teaching.

Following are some of the statements that reflect the students' opinion on the teacher: student ratio. For the *quality-related theme*: statements such as "...that lecturer has more time to supervise every student," "Student will get more knowledge," "...students can learn more, lecturer not tired and exhausted..." "Lecturer always wanted to teach more..." indicated that teaching can be enhanced if more attention provided to the students by the attending supervisor. As for the *time-related theme*: statement such as "...so that students' patients don't have to wait..." "less time waiting for supervision..." and "reduced the time of student waiting for supervisors to check the

students work" reflected that students planned to do more, but the process might be halted by the long waiting time contributed by current teacher: student ratio.

These responses reflected the students' need for guided clinical supervision and how best to integrate both theoretical and practical skills in patient management in preparation for their future clinical practice.

The support of a clinical assistant is amongst several factors that greatly influence students' clinical learning experience, especially the clinician/operator. Our findings revealed that the majority of students were not satisfied with their assistants' performance in the clinic. To overcome this issue, Abu Kassim and colleagues<sup>11</sup> recommended that an assessment should be incorporated when assigning operator-student pairs in clinics to encourage positive behaviours of the assistants and improve the students' learning experience overall. It has been suggested that soft skills development is important to prevent the students from being stereotype<sup>2</sup> in their clinical management.

This study indicated that majority of the year five students agreed to the statement "My progress is very slow" and took full responsibility of the outcome with reasons such as poor time management, lack of confidence with their own clinical skills and attending clinical sessions unprepared. At this stage, these students were required to perform advanced restorative procedures such as molar endodontics and fixed prosthodontics. These treatments demand long clinical hours due to the complexity of the procedures involved unlike other restorative dental procedures. Chambers<sup>12</sup> suggested that ideally students should enter dental clinic with acceptable skill levels. Clinical environment should provide good learning environment for both clinical procedures and performance settings.<sup>12</sup> Based on the finding of this study; whether the students had adequate training for the complex treatments they were required to do warrants further investigation.

The general learning environment showed a mix of positive and negative responses from the students. They did not feel that their clinical teachers showed interest with their clinical work, nor took enough time to supervise as the clinical teachers were constantly not available. This finding is somewhat similar to that reported by Polyzois and co-workers,<sup>13</sup> which indicated that teachers missing from clinic when they are supposed to be available at all times was a common problem in most dental schools. This information suggests that the faculty should address this problem accordingly, in order to create a better learning environment for the students.

Previous studies concluded that effective clinical teachers should be able to provide specific feedback regarding students' performance in clinic, know how to translate didactic information into the patient care situation, be able to justify difficult concepts, demonstrate clinical teaching interestingly and simultaneously motivate students with positive manner.<sup>12,14</sup> The proposed good values required in clinical teachers are covered in the six domains evaluated in this study. The majority of the students agreed that their teacher embraced good quality of a clinical teacher and teaching style.

Comments from this study regarding strengths of effective clinical teachers are in accordance with the studies of Conigliaro and Stratton<sup>15</sup> and Duvivier et al.,<sup>16</sup> which included thoughtfulness and commitment to teach as qualities of effective teachers. It is essential

for a good clinical supervisor to be a role model to the students.<sup>16,17</sup> It may be difficult for everyone to have a fair chance to observe a demonstration due to the student: lecturer ratio. However, students themselves should be proactive in taking their own initiative of finding a chance to observe their clinical teachers, instead of expecting to be “spoon-fed.”

Studies<sup>17,18</sup> also reported that students commented on teaching staffs' enthusiasm as a quality of effective teaching. Improvements required in clinical teaching were parallel to the findings by Fugill (2005),<sup>19</sup> who suggested clinical teachers' punctuality, consistency, availability, understanding and respect were important. Punctuality and availability are important so that students do not need to wait for clinical teachers to assess their work before proceeding with the next step of a treatment. This can directly influence the quantity of work that can be done in one clinical session.

Findings from Chambers et al. (2004) demonstrated that characteristics of effective clinical teachers include motivated, enthusiastic, compassionate, showing interest, caring and proactive towards their students. In an ideal clinical teaching environment, students are usually motivated by its relevance and through active participation; therefore, development of students' professional thinking, behaviour, and attitudes is mostly influenced by their clinical teachers.<sup>20</sup>

It is important to achieve balanced relations between students and clinical teaching staff. Significance of creating a positive learning environment, evaluating learners, giving feedback and promoting self-assessment had been emphasised by Irby and Bowen (2004).<sup>21</sup>

## 5 | LIMITATION

The findings from this study should be interpreted with caution as it only provides view of undergraduate dental students in the University of Malaya. Therefore, the results derived here cannot be generalised across all dental schools in Malaysia. To date, there are six public dental schools and seven private dental schools in Malaysia. Future study on how clinical teachers perceive the effectiveness of their clinical teaching should be carried out in order to get a better synchronisation between their views and that of students.

## 6 | CONCLUSION

In general, students expressed positive perceptions towards the clinical teachers on their clinical learning experience in the Faculty of Dentistry, University of Malaya. There were only a few negative feedbacks reported concerning the general learning environment. Students' feedback on their learning experience should be taken seriously for further improvement in the delivery of clinical teaching preferably by using variety of teaching approaches to stimulate, facilitate and progressively guide the learning process of dental students.<sup>22</sup> Students perceived that the lower clinical teacher: student ratio might enhanced the effectiveness of clinical teaching.

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## CONFLICT OF INTEREST

All authors have no conflict of interests in the authorship or publication of this contribution.

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