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RESEARCH ARTICLE

Developing the Teaching Skills of Part-Time Dental Educators

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ABSTRACT

Background: Well-conducted peer observation of teaching (POT) can be an effective tool in enhancing teaching quality and educator development in healthcare teaching including dentistry. Experience suggests that its effectiveness depends on the environment in which it is undertaken. A previous study investigated engagement with POT by a dental school faculty in the UK and identified barriers to its routine use for educator development. These barriers are particularly problematic for part-time educators who play an increasingly significant, but frequently underestimated role, in undergraduate dental teaching, complementing the teaching of full-time clinical academics. Owing to the part-time nature of their roles, opportunities for their teaching development are limited. This can lead to dissatisfaction and a lack of fulfillment, and ultimately their loss from teaching faculty.

Aims: This study explores POT's utility for the development of part-time dental educators' (PTDEs). Specifically it (i) audited their engagement with POT, (ii) reviewed the design(s) employed, (iii) assessed participant's perceived value of it and (iv) explored methods to maximize its utility for their teaching development.

Method: Teaching roles and experience, current engagement and experience of POT of part-time educators employed in a UK dental school were explored using a mixed methodology survey. Free-text responses were subjected to thematic analysis and emerging themes were subsequently explored iteratively by undertaking observations of seven part-time educators in various dental teaching environments. A developmental POT approach was used to assess utility.

Results: Of 44 surveys distributed, 27 (61%) completed surveys were returned. 24 (89%) respondents reported that POT was of some or high value and resulted in enhanced teaching quality. Respondents experienced difficulties undertaking POT annually with only 14 (52%) achieving this. Observer choice emerged as fundamental to its utility. Additionally, the study identified a number of barriers to its effective use.

Conclusions: Well-conducted POT is an effective tool for PTDE teaching and learning development through feedback and self-reflection. It is essential that this takes place in a supportive and non-judgemental environment and choice of 'observer' is fundamental to its success. Tailored, high quality, pragmatic peer observation of teaching should form the backbone of any part-time educator developmental programme.

Introduction

Clinical teaching in United Kingdom (UK) dental schools is increasingly dependent on part-time dental educators (PTDEs).[1] This mirrors the situation in other healthcare professions and other parts of the world including the USA.[2, 3] PTDEs are predominantly involved in teaching undergraduate (UG) students in the UK. Their involvement in clinical teaching is recognised to be educationally advantageous since following qualification, all dental graduates will enter general dental practice (GDP) for dental foundation training and many remain in primary dental care for their entire practicing career. PTDEs working in GDP settings share relevant clinical expertise and knowledge of current National Health Service (NHS) regulations with their UG learners.[1] Their pragmatic, practice-grounded experience complements the knowledge and skills of full-time (FT) specialist clinical academics. Educationally, PTDEs' involvement maintains curriculum 'authenticity' and 'currency', [1] keeping it 'focused' and 'relevant' and, as a result, enhances learning effectiveness.[4]

Additionally, PTDE involvement in UG teaching bolsters the dental faculty workforce. In both the UK and the USA there have been concerns about difficulties in recruiting full time clinical academics to teach dental students as well as a reduction in the number of clinical academics. [1, 3] This is a particular concern considering the age profile of the existing faculty.[5]

Bearing in mind the need to train dentists who provide high quality patient care, the high levels of student expectations and the increasingly onerous student tuition fees, it is essential that the teaching skills of PTDEs are of the highest quality.[1] Part-time staff should be fully embedded in the dental teaching faculty with opportunities for development and career progression. Opportunistic verbal feedback collected from PTDEs during a recent study which assessed dental faculty engagement with peer observation of teaching (POT) [6] suggested frustration and disenfranchisement associated with difficulties in accessing dental faculty teaching development activities as well as a lack of recognition of their contribution to the education and training of UG students. Time constraints, clinical commitments and a perceived lack of institutional, organisational and educational support emerged as causative factors.

Historically, many PTDEs received little or no formal instruction relating to teaching and learning. [3] Time constraints may also limit PTDE's opportunities to access high quality face-to-face or on-line teaching, learning opportunities and to discuss and reflect on their teaching experiences with their colleagues. Not only may this impact on PTDE retention and fulfilment, but this is a significant omission in view of concerns raised in the literature about the quality of teaching provided by sessional or part-time clinical teaching staff ('the invisible faculty') and the lack of tailored teaching and learning training programmes for them.[2] Despite their significant contribution to clinical undergraduate teaching, there has been relatively little research concerning how to provide effective training in teaching and learning for part-time clinical teachers. [3]

Peer observation of teaching (POT), a form of peer review of teaching (PRT), [7] is a well-established technique involving mutual formative observation of teaching episodes by two similarly experienced educators.[8] In higher education it is recognised to be a potentially supportive and effective way in which to improve the quality of education. [9] This is achieved through the provision of a platform for teaching reflection and dissemination of good teaching practice to the community of teachers in a faculty. [8, 9, 10] Three models of POT have been described in the literature[6, 8] : (i) a formative developmental model involving an educational expert or suitably educationally-trained observer with the aim of enhancing the observee's teaching practice, (ii) a summative evaluation model involving observation by a senior staff member with the outcome being used for quality assurance, appraisal and promotion, and (iii) a collaborative peer-review model, as epitomized by Dahlgren et al's 'Critical Friend' model.[11] The latter involves two colleagues of similar experience reviewing each other's teaching and providing reciprocal, formative feedback which encourages reflection. The 'Critical Friend' model is perceived as being potentially advantageous since it may lead to the development of a nurturing reciprocal learning partnership between the observer and observee. In this way potential perils which are integral to evaluative POT (such as intimidation and undermining) and stem from the unequal relationship based on the 'subordinate' role of the observee and the 'dominant' role of the observer are avoided. Clearly, of the three described models, only the last truly represents POT owing to the inequality in 'peer' seniority in the first two models. [12] There may be a role for each model at different stages of a teacher's development but at all stages a summative evaluative model runs the risk of having a negative impact on the observee's teaching development particularly when the observer adopts a dominant, non-supportive or insensitive role. [8, 12]

It follows that well-conducted, collegiate, supportive POT [13] could offer the potential for PTDEs to develop their teaching skills in an effective manner and might form the backbone of an effective PTDE

teaching development programme. In dental education, POT has largely been firmly but, perhaps, non-critically embraced [7, 14] whilst in some areas of higher education in the UK it has been criticised and its effectiveness has been questioned.[12] Recently, in dental education a more nuanced view of POT has begun to emerge. A recent POT evaluation study [6] whilst largely confirming the teaching faculty's appreciation of the effectiveness and value of well-conducted POT did identify numerous organisational and timing issues which acted as barriers to engagement and potentially reduced its utility particularly for time-poor PTDEs. Well-conducted, traditional POT is time-consuming and one group of researchers has estimated that between 4-8 hours is required for the complete process. [15]

Despite these time constraints, the authors hypothesized that well-conducted, tailored POT could offer an efficient and flexible intervention to remedy the lack of opportunities for PTDEs to develop their teaching skills. The reported study was, therefore, undertaken with a view to (i) auditing PTDE's current engagement with POT, (ii) reviewing the design(s) of POT in use, (iii) assessing participant's perceived value of POT and (iv) exploring ways that POT could be developed to maximize its utility for PTDEs making it a time efficient and effective tool to develop their teaching skills.

Materials and methods

The study methodology incorporated an initial survey approach targeting all PTDEs within the Institute of Dentistry (IoD) of the Faculty of Medicine and Dentistry (FMD) of Queen Mary University of London (QMUL). This was followed by an action research component [16, 17] in which one trained researcher (JAGB) undertook POT episodes with recruited PTDEs to assess the educational utility of POT for this group of clinical educators. POT episodes were designed to include elements identified from the study survey and literature review which facilitate high quality learning experiences for the observee. [6, 10, 15, 18]

Survey

A mixed methodology written survey (see complimentary information) was designed to generate both quantitative and qualitative data exploring the respondent's roles in clinical teaching (Section A), their development as a clinical teacher (Section B) and their previous experiences of POT (Section C). Existing literature concerning PTDEs, [1, 14] POT programmes [10, 15] and a preceding evaluative study of POT [6] influenced survey design.

Ethical approval for this project was requested and exemption granted by University College London Research Ethics Committee. Its advice was incorporated into the participant information sheet and consent form. Ethical approval from the NHS Research Ethics Committee was not deemed necessary since patients were not directly involved in the research.

PTDEs and their e-mail addresses were identified through the IoD Administrative Office. The target group included hard-to-reach PTDEs predominantly based in outreach settings who worked for less than two days a week (13 [30%] of PTDEs) and whose recruitment was anticipated to be logistically challenging. Strategies to enhance survey participation included preparatory e-mailing of identified PTDEs to alert them to the survey, outline the study's aims, and emphasise its confidentiality. A follow-up e-mail was sent two weeks prior to survey closure. The Lead Clinician for Outreach Dental UG Teaching additionally kindly assisted with recruitment.

The survey was piloted with three PTDEs and then refined in light of their feedback. [19] Revised questionnaires were distributed opportunistically to PTDEs by hand and electronically. Completed surveys were returned anonymously to a named academic secretary (LL).

Data from the free-text responses was transcribed manually and analysed by a single reflexive researcher (JAGB) who identified emerging themes. 'Grounded theory' was achieved using an inductive, data-driven 'Open Coding' approach.[20] Repeated active reading of the data was undertaken before initial coding was undertaken. [21] Emerging themes were then iteratively identified, reviewed and refined.

POT observations

An 'action research' methodology [16, 17] was adopted: A single trained researcher (JAGB) not only observed and worked with the participating PTDEs but also assessed POT utility as a tool for PTDE teaching development and empowerment. It was hoped that through active participation in this research project, PTDEs would recognise POT's worth, actively engage with POT and subsequently embed it into their continuing professional development. Through their example, it was anticipated that faculty colleagues would engage with POT with resultant sustainable quality improvement in teaching and transformative change [9,10, 22] to the IoD's POT programme. The structure of well-designed POT episodes which includes pre-observation scoping and post-observation feedback sessions [15, 18] should lead naturally to the critical reflection which is fundamental to unlocking

the transformative potential of action research. [16, 17]

Seven PTDEs were opportunistically recruited to undertake POT within the study. Recruitment was incentivised by the opportunity for participants to receive formative feedback on their teaching skills, the offer of verifiable continuing professional development and to comply with the IoD's teaching standard of undergoing POT once in each academic session. Informed consent was obtained.

A developmental, nonreciprocal POT model [8] was adopted to incorporate the formative advantages of this type of POT for the observees. This had the disadvantage of not being able to fully assess the collaborative aspects of a POT model which is one of the key components of Dahlgren et al's 'Critical Friend' approach to POT.[11] This approach also facilitated first-hand identification of potential associated physical and logistical barriers to successful POT. The audit-style FMD POT template was employed with a view to assessing its effectiveness.

Prior to commencing the research, JAGB underwent POT observer training with a medical educationalist with a special interest in POT. Components of best practice for high quality POT as identified from the existing literature, were incorporated. [6, 13, 18] A variety of teaching session types involving different dental specialties were opportunistically observed in order to gauge the adaptability of POT. The role of the observer was explained to the learners being taught prior to POT commencement. Following accepted practice, [18] the observer undertook a purely passive role in each episode so avoiding any influence on the session. Learners were asked to complete a feedback form to provide triangulation. Duration of observation was session dependent and ranged from 35 to 210 minutes. Each teaching session was observed in its entirety. Ground rules regarding confidentiality were agreed between the observee and the observer prior to each POT episode.

The majority of post-observation meetings were undertaken face-to-face, as close as possible to the observation and audio-recorded. Delays were associated with holidays and clinical schedules. Recordings were stored electronically and following transcription deleted. Feedback sessions followed Pendleton's guidance on feedback.[23] Observees were e-mailed structured questions following the feedback session to stimulate reflection. Thematic analysis of transcribed post-observation meeting recordings and email responses followed as above.

Results

A. Survey

44 PTDEs were identified within the IoD. 27 (61%) returned completed questionnaires. Table 1 summarises respondent cohort's working patterns, speciality, clinical and teaching experience. Of note: no respondent taught exclusively in Outreach settings. 12 (44%) taught in both the IoD and Outreach. 15 (56%) taught exclusively in the IoD. Respondents started teaching a mean of 10 years post-qualification with a mode of 5 years and range of 1-35 years. 11 (41%) PTDEs reported undertaking postgraduate studies in education. 15 (56%) reported no formal training in teaching and learning.

Table 2 summarizes PTDEs experience of POT over their entire teaching career. All respondents felt that PTDEs require formal training in education and 18 (67%) of respondents highlighted barriers to their professional development as a teacher.

Table 3 summarises the POT design employed, the status of the observers involved and the respondents' perceived value of POT on their teaching development. Within the Adult Oral Health and Imaging groups some respondents recognised that their POT observers had multiple relationships to them. Three respondents from the Adult Oral Health group had not previously undertaken POT. Thus, whilst 14 respondents from Adult Oral Health returned surveys, in this group only 11 had experienced POT. This is reflected in Tables 2 and 3.

TABLE 1: Summary of part-time dental educators' cohort session plans, specialty and clinical and teaching experience

	DENTAL SPECIALTY					
	Adult Oral Health	**Imaging**	**Oral Surgery**	**Orthodontics**	**Paediatric Dentistry**	**ALL**
Number of respondents	**14**	**2**	**3**	**4**	**4**	**27**
Number of sessions worked in IoD each week – range and (mean)	**2 – 8** **(4.6)**	**4 - 5** **(4.5)**	**2 – 3** **(2.33)**	**7-7.25** **(7.125)**	**4-6** **(5.5)**	**2 – 8**
Years since qualification -range and (mean)	**7-36** **(18.7)**	**24-44** **(34)**	**15-41** **(30)**	**11-28** **(18)**	**17-32** **(21.5)**	**7-44**
Years involved in clinical teaching – range and (mean)	**0.6-20 (9.5)**	**20-40 (30)**	**5-15 (9.7)**	**3-20 (11.25)**	**5-19 (12.75)**	**0.6-40 (11.8) Mode: 5**

TABLE 2: Part-time dental educators' self-reported peer observation of teaching experience

SPECIALTY	**Number undergone POT during teaching career**	**Number undergone POT within last 12 months**	**Number undergone POT within last 12-24 months**	**Number undergone POT within last 24-36 months**	**Number undergone POT undertaken >36 months**	**No experience of POT**
Adult Oral Health	11	7	1	2	1	3
Imaging	2	0	1	1	0	0
Oral Surgery	3	0	3	0	0	0
Orthodontics	4	4	0	0	0	0
Paediatric dentistry	4	3	0	0	1	0
TOTAL ALL PTDEs	24 (89%)	14 (52%)	5 (19%)	3 (11%)	2 (7%)	3 (11%)

TABLE 3: Peer observation of teaching design, status of observer and respondents' perceived value of POT on their teaching development

DEPARTMENT	Respondents role in POT episode OE-OR-B-N	Status of observer* F-TC-SC-E-O	Observer in own specialty	Perceived value of POT (%) - Mean rating and range
Adult Oral Health	**2-0-9-3+**	**0-6-7-5-0**	**8/3**	**70** (49-100)
Imaging	**0-0-2-0**	**0-1-2-0-0**	**2/0**	**62**(50-74)
Oral Surgery	**0-1-2-0**	**0-2-1-0-0**	**3/0**	**63.7**(50-80)
Orthodontics	**0-0-4-0**	**0-1-3-0-0**	**4/0**	**45.8**(33-50)
Paediatric dentistry	**1-1-2-0**	**0-0-3-1-0**	**3/1**	**65.8**(50-100)
ALL PTDEs	**3-2-19-3**	**0-10-16-6-0**	**20/4**	**61.8**(33-100)

KEY TO TABLE 3		
	Status of observer *	F-Friend, TC-Trusted Colleague, SC- Senior Colleague, E-Educationalist, O-Other
	Respondents' role in POT episode	OE - Observee, Observer- OR, B-Both, N-None+

*Some respondents recognised that their POT observers had multiple relationships to them
+ In the Adult Oral Health group, three respondents had not undertaken POT

B. Qualitative survey findings:

A number of themes emerged on interrogation of the survey responses:

(i) Motivation to become and continue to be involved in clinical teaching

Many respondents described a vocational calling to clinical teaching and pride in shaping the dental workforce of the future. Respondents cited the rewards of clinical teaching and reporting feelings of job satisfaction, mental stimulation and enjoyment:

'*I enjoy the stimulation of teaching and seeing the students evolve and develop over time. My main motivation is that they will continue to be better both clinically and with regard to understanding* '

Many also identified with the opportunity for personal development allowing them to remain fresh and motivated:

'*Teaching helps (me) continue to develop and improve my knowledge and helps me to pass this onto the students.*'

Some also recognised that their teaching role allowed diversification of their working week.

(ii) Perceived barriers to professional development of part-time dental educators as teachers

Significant barriers to PTDEs developing their teaching skills were reported. These ranged from expected organisational issues:

'*sometimes (faculty teaching and learning) study and developmental sessions fall on a day when I'm not in.* '

To multiple, competing demands on their limited available time:

'*Balancing time, outside job role and teaching role and study for PGCAP.*'

A further emergent theme related to the respondents' negative perceptions of the parent University's Education Department's understanding of PTDEs' time constraints, specific training needs and the relatively unique mixture of clinical skills-based, knowledge-based and clinical reasoning learning which occurs in undergraduate clinical dentistry studies (which differs subtly from medical undergraduate studies):

'*…requirements of CILT etc for ever writing – entirely irrelevant.*'

'*I feel that the education centre seems oblivious to the needs of dental education…*'

(iii) Optimal strategies to provide professional development in teaching and learning for part-time dental educators

A variety of strategies were suggested to enhance respondents teaching and learning development. As might be expected, a more supportive overarching organisational approach which took into account the specific needs of time-limited PTDEs strongly emerged from free-text responses. Suggestions included enhanced teaching-focused inductions, mentoring, didactic teaching, formal staff sessions specifically aimed at PTDEs dedicated to teaching and learning scheduled out of term time, combined with bringing in outreach staff to the main IoD site for training days underpinned by a flexible online approach. Only one respondent mentioned peer observation and feedback.

(iv) Suggested strategies to enhance peer observation of teaching experience

Three main themes emerged relating to POT Enhancement namely:

(a) Organizational

A number of respondents advocated more frequent episodes assessing different types of teaching.

'*Set a framework to allow multiple POT sessions during the year, each focussing on a different aspect of teaching development.*'

In order to reduce the associated organisational challenges and time expended:

'*It should be arranged by the school, not by me, on a random session with a trained supervisor/assessor.*'

(b) Peer observation of teaching design

An audit style was favoured with an observational checklist to speed the process. A lack of robustness was recognised by some with a possible criticism of the 'Critical Friends' approach:

'*Have specific parameters that can be measured…the current model like a mutual admiration society for some clinicians?*'

Others felt that:

'*sometimes viewed as a tickbox exercise*'

Triangulation was also suggested through learner involvement:
'*encourage student participation.*'

(c) Observer characteristics

Comments about observer characteristics were frequent with a trained educationalist or clinician being favoured by many. Feedback from clinicians with an understanding of dentistry was held to be the most valuable:

'*Comments from colleague more valuable than from educationalist…*'

Peer observation of teaching observations

Of the seven PTDEs recruited to the study (Table 4), two observees taught Oral Surgery (OS), four Adult Oral Health (AOH) and one Paediatric Dentistry (PD). Apart from the OS PTDEs, all worked in outreach centres as well as the DI. The PD PTDE and three of the AOH PTDEs were studying for a post graduate certificate in teaching and learning at the time of the reported POT episodes.

A range of clinical teaching episodes was observed, reflecting the diversity of dental UG and PG clinical teaching. Apart from a theatre session which involved two postgraduate trainees, all learners were dental UGs.

Observation durations were dictated by the type of teaching episode observed and ranged from 35 to 210 minutes. Although verbal feedback was given

immediately after each session, owing to logistics, holiday and illness, formal feedback delivery occurred between one and 29 days later with a mean of 16 days delay. Formal feedback sessions lasted between 30 to 45 minutes with a mean of 38 minutes. One feedback session was conducted by telephone, the others took place in person. The total duration of POT episodes ranged from 90 minutes to 260 minutes with a mean of 173 minutes.

Key discussion themes in feedback sessions

There were a number of recurring themes which emerged during feedback sessions. Difficulties in precisely remembering the session were frequently reported by the observee. This may reflect the wide range of time that elapsed between the observations and the formal post-observation feedback session of between 1-28 days which occurred during the study. This was due challenges in co-ordinating diaries, assessment commitments and annual leave. This underlined the importance of immediate on-the-spot note-keeping by the observer and undertaking feedback sessions as soon as possible after the observed teaching session. Both these points are recognised to be fundamental to the delivery of high quality feedback.

The observer frequently recorded evidence of the observee's good educational practice. When this good practice was pointed out to the observee during the post observation feedback and discussion sessions observees were frequently taken by surprise and admitted that they had not personally recognised this good practice:

'*I didn't realise I was doing that….*'

Observees frequently expressed surprise at the positive sentiment expressed in student feedback.

During feedback sessions observees frequently reflected whilst thinking out loud.

Strategies to enhance the structure of the typically unstructured clinical teaching session were also often discussed. Pre-session learner '*huddles*' with tailored learning objectives was one solution suggested. Approaches to providing feedback were varied and strategies to structure learner feedback were frequently required.

Teaching learners of different levels in the same group often emerged as a perceived challenge. Discussion frequently involved the role of communities of practice.

Observee feedback and reflection on peer observation of teaching process

Utility

Observees all reported that the experienced POT episode was '*useful*' or '*good*'. Common themes included confirmation that the subjects' teaching was of appropriate quality, two way process, importance of observer rapport and enjoyment. Comments included that it

'*provided positive reinforcement that my teaching techniques were acceptable and effective*'

and

'*it was exclusive and good to exchange views*'

The feedback was highlighted by most as useful and formative:

'*it is good to have feedback on how you are doing.*'
'*really enjoyed it*'

Intrusion

No respondent reported feeling uncomfortable at any stage of the POT process:
'*No. I can see that it might be if you did not have a good rapport with the observer.*'
Another reported:
'*It was highly busy clinic but had no effect on this.*'

Feasibility

Participants uniformly felt that regular POT was useful and feasible particularly for part-timers:
'*I feel that it is feasible for P/T clinical teachers but would require planning.*'

Subthemes of collegiality, inclusivity and 'pedagogical' isolation emerged:

'*It helps me feel part of the Institute…….don't have opportunity to touch base with the more full-time lecturers, leading to feelings of isolation.*'

Frequency

Views on the frequency of POT varied from once every six to 12 months. One participant felt that it should be undertaken at intervals of every 18 months for PTDEs and 12 months for full time staff.

Peer observation of teaching design

'*should be short and discussion-based*'

'*Fine-tune to take on more clinical aspects*'

Delivery of educational development for PTDEs

'*practical rather than didactic approach to teaching would be very useful.*'

'*allocation of dedicated time for development and learning*'.

Observer's research diary themes

SMD POT template: audit-based, evaluative, not ideal for clinical sessions, limited space for writing and describing good practice.

Good practice: demonstration of opportunistic clinical teaching strategies, role modelling, developing clinical reasoning, humanistic teaching theory

Logistical challenges: PTDE only in IoD once/month, planning feedback sessions, need to observe whole of 3-hour AOH session to observe portfolio of teaching skills including delivering feedback.

Table 4: Overview of Peer Observation of Teaching Sessions

OBSERVEE	Specialty	Type of teaching session	Numbers of learners (Completed feedback forms)	Stage of learners	Duration of observation	Delay between observation and formal feedback session	Duration of feedback session	Feedback session mode of delivery
A	Oral Surgery	Tutorial 'Bone removal and tooth sectioning'	8 (5)	3rd year dental undergraduate students	35 minutes	28 days	45 minutes	Face to face
B	Paediatric Dentistry	On the job teaching - planned theatre session	2 (2)	Postgraduate - second year clinical fellow - second year DClin Dent student	100 minutes	1 day	30 minutes	Face to face
C	Oral Surgery	Tutorial 'Medical Emergencies'	7 (4)	4th year dental undergraduate students	35 minutes	28 days	45 minutes	Face to face
D	Restorative Dentistry	Clinical supervision and teaching	12 (5)	3rd and 4th year dental undergraduate students	210 minutes	26 days	35 minutes	Telephone
E	Restorative Dentistry	Practical class – Phantom Head (SIM) Teaching – MOD cavity preparation and amalgam	12 (8)	2nd year undergraduate students	210 minutes	1 day	30 minutes	Face to face
F	Restorative Dentistry	Clinical Supervision and teaching	14 (10)	3rd and 4th year dental undergraduate students	135 minutes	8 days	40 minutes	Face to face
G	Restorative Dentistry	Clinical Supervision and teaching	10	2nd, 3rd and 4th year dental undergraduate students	120 minutes	21 days	30 minutes	Face to face

Discussion

In common with many UK dental schools, [7] the IoD of QMUL expects its clinical teachers to engage with collaborative POT at least annually. The rationale underpinning this strategy is based on reports of POT's effectiveness in enhancing teaching quality in higher education [9, 22, 24] and health-related disciplines such as pharmacy,[15, 25] nursing, [26] medicine [27, 28] and dentistry. [6, 7, 14] The benefits of well-designed POT programmes are not confined to the professional development of individual teachers alone but also relate to their potential to positively influence the whole teaching faculty [27] through the sharing of good teaching practices. This efficacy additionally reflects POT's promotion of collaborative reflection on teaching, stimulation of interest in development of pedagogic practice and enhancement of collegiality. [22, 27, 28] These benefits might usefully be harnessed for PTDE development.

The qualitative results of this study emphasise the utility of POT and, of potential significance for PTDEs in particular, POT's ability to enhance individual teachers' confidence in their own teaching skills and reduce a sense of 'pedagogic isolation'. Definitive evidence confirming that the POT-associated perceived enhanced teaching quality actually translates into improvement in learner achievement (ie Kirkpatrick's Evaluation [29] level 4) in health related disciplines is sparse but assumed.[28] Outside health-related disciplines, a recent meta-analysis suggests that in literacy teaching programmes for prekindergarten and elementary school teachers in the United States there is a definite improvement in learner achievement.[30]

Despite the clearly identified logistical and organisational barriers, the present study indicates that a commendable 51% of responding PTDEs achieved the IoD POT target in the 12 month time frame of this study. This figure is comparable to the 46% of academic staff who responded to the preceding survey which mostly captured full-time teaching staff. [6] Since the PTDE survey had a lower completion rate of 61% it is, however, possible that the figure for PTDE target POT achievement is an overestimate if the non-responders had not engaged with POT.

Any lack of engagement with POT may well relate to the clearly identified challenges that PTDEs face in accessing developmental activities in teaching and learning rather than a perceived lack of appreciation of POT's worth or effectiveness. Thus, in the present study, 18 (67%) respondents identified barriers to their professional teaching development. These included organisational issues, multiple conflicting time demands and suboptimal historical support or perceived recognition of their specific training needs by their line managers within the IoD, the FMD or the overarching University's Educational Development Department. The latter barrier may reflect an incomplete understanding of the complexity of the multi-faceted teaching which routinely takes place in clinical dentistry and possibly a lack of appreciation of the time constraints faced by PTDEs. These barriers may have impacted on PTDEs' perceptions about POT's utility and feasibility in their time-constrained work environment. Survey responses indicated a wide range of overall PTDEs' perception of POT's value ranging from 33 to 100% with an overall mean perception of 61.8 %. This overall positive perception of POT value mirrors that of POT studies involving medical educators. [10]

A relatively negative view of POT's utility emerged in the Orthodontic group where a mean POT perception rating of 45.8 % (range of 33-50%) was recorded. This finding contrasts with the generally positive sentiment about POT reported in a recent survey of UK dental schools. [7] However, the latter survey only targeted educational or peer-review leads rather than clinical teachers as a whole or PTDEs so its results may not have accurately captured the underlying views of this group and may have reflected an aspirational view point. Indeed, within UK higher education as a whole criticisms of POT have been voiced. There have been suggestions that it may be, at best, a benign and relatively ineffective method of developing teaching quality.[12] Additionally, it may be relatively easy to only superficially engage with and subvert.

The current study reinforces the importance of observer choice in the success of the POT exercise. [6, 18] The chosen observer's seniority, sensitivity, skills and educational background as well as the closeness of their relationship to the observee may impact on the environment in which the POT episode is taking place. [8, 12,13, 32] The relationship between observee and observer has the potential to be unequal with the observee having to accept a subordinate role to the dominant observer. [12] Thus, in instances where a summative POT [8] model is adopted or POT is undertaken insensitively, the observee's learning from the experience is likely to be diminished. In contrast, although the 'Critical Friend' model [11] seems advantageous in reducing anxieties associated with POT episodes, and in promoting dialogue, it is possible that peers who know each other well and have a close working relationship might be reluctant to provide impartial critical constructive feedback in order to avoid jeopardising their relationship. This would also limit the developmental value of POT on the observee's teaching skills. [12, 26]

In the present study, although the majority of reported episodes of POT appear to have involved a collaborative peer-review model involving 'Trusted Colleagues' (Table 3), a substantial number appear to have involved senior colleagues. As already discussed, an unequal relationship between the observee and the observer as occurs in 'evaluative' POT models has the potential for negatively impacting on feedback and reflection. [8, 12] Within the POT literature, there is general consensus that it is essential that the observer employs a formative, noncritical, nonthreatening and supportive approach during feedback to facilitate observee reflection and development. [31, 32]

Furthermore, in many institutions, POT's potentially narrow focus (eg on reviewing presentation skills), its variable potential for intimidation, associated organisational demands and the ease with which its objectives may be subverted to a 'tick-box exercise'

may also undermine its value as a developmental tool.[8, 12] In the current study, despite the anonymous nature of the surveys, participants may also have been perhaps subconsciously reluctant to criticise the utility of POT given that it is embedded in IoD, FMD and University educational strategy.

Reviewing the presented data relating to provision of continued development in teaching and learning for PTDEs, it is striking that many of the responses focus on organisational issues and didactic and blended teaching involving e-learning. Relatively few describe experiential learning involving observation with feedback [33] such as POT. Acquisition of theoretical knowledge relating to teaching and learning provides a foundation and is influential in clinical teacher development particularly during educators' early career. For more experienced clinical teachers, modelling, practice of teaching skills, encouragement and motivation become more important.[34] Four of the seven PTDEs recruited to take part in the POT episodes in the reported study were undertaking formal postgraduate studies in education. It is likely that these participants were highly motivated educators and were 'POT aware' and so favourably biased about the value of POT in teaching development. Nevertheless, the experience and feedback provided by this study's participants mirrors the findings of Cairns, Bissel and Bovill [14] in confirming POT's value in generating collaborative, constructive and non-judgemental feedback resulting in critical self-reflection. Observees clearly valued and appreciated the validation of their teaching skills, collegiality, the opportunities to share good teaching practice and to discuss teaching and learning. POT was thought to be feasible for PTDEs but would require adequate planning and administrative support to implement this. Careful consideration of the duration of the observation period is warranted: three hour observation periods are likely not be feasible or effective for PTDEs.

The study observer's experience suggests that use of an audit-type approach in POT episodes detracts from the developmental value of POT. This supports Finn et al's perception [35] that the use of a 'checklist' distracts the observer, reducing the accuracy and teaching coverage and crucially impacting on their own opportunity for reflection and learning. [12] This is an important consideration since POT observers frequently find the observer role to be the most valuable in terms of development of their own teaching skills.[31] Uninterrupted observation, free of distraction from clinical care or teaching duties, allows complete focus on observed teaching without concerns about patient and learner management.[14] Ironically, in the reported study, an increasingly narrative (as opposed to check-list) style was adopted during POT episodes. This may have impinged on the observation and lengthened the duration of each POT episode. The more extensive written observations did serve as an aide-memoire for both observer and observed allowing rich, two-way collaborative discussion which stimulated reflection during post observation feedback sessions. Potential answers to this conundrum might lie in (i) designing easy to complete observation forms with a selection of descriptors to circle and free text boxes or (ii) unobtrusively recording the teaching episode being observed. Some types of teaching would lend themselves to this approach eg lectures, problem-based learning, simulation and tutorials. Teaching involving patients would be more problematical and would require patient consent.

This study confirms that collaborative POT is well-received, feasible and potentially effective for PTDEs. However, the perceived time investment required for effective POT seems to be a significant barrier and may limit its feasibility and utility without significant institutional organisational support. Based on experience and reported literature, in Pharmacy, Trujillo et al [15] estimated that effective POT required between 4-8 hours of participants' time. In contrast, 'Peer coaching' programs in American Medical Colleges typically factor in a two to three hour time commitment.[13] Even this could be overly time consuming for PTDEs who may only be employed as a clinical educator for 1-2 days each week during which they would be fully occupied supervising students. In the current study, using a predominantly audit-type approach, on average three hours' time per POT episode was required but the use of a narrative approach would increase this. The duration of POT was also clearly influenced by the type of teaching being observed with small group tutorials or seminar episodes requiring less time than, for instance, clinical restorative sessions involving multiple patients and dental students.

How then might POT fit in to a meaningful coaching programme aimed at enhancing the teaching quality of PTDEs? In most UK dental schools, the PTDEs of a teaching faculty will include clinicians with diverse backgrounds in teaching and learning; some beginners, others with formal educational teaching and/or extensive teaching experience. With this diversity in mind, and taking into account the findings of the present and other studies, we envisage an embedded, flexible and interlinked two stage PTDE Teaching and Learning coaching programme which is based around effective and time-efficient POT (Figure). Institutional organisational support would be necessary. The key

POT themes of collaboration and reflection [22, 27, 32] are fundamental components of the programme's design and facilitate participants' experiential learning and allow sharing of experiences and good practice.

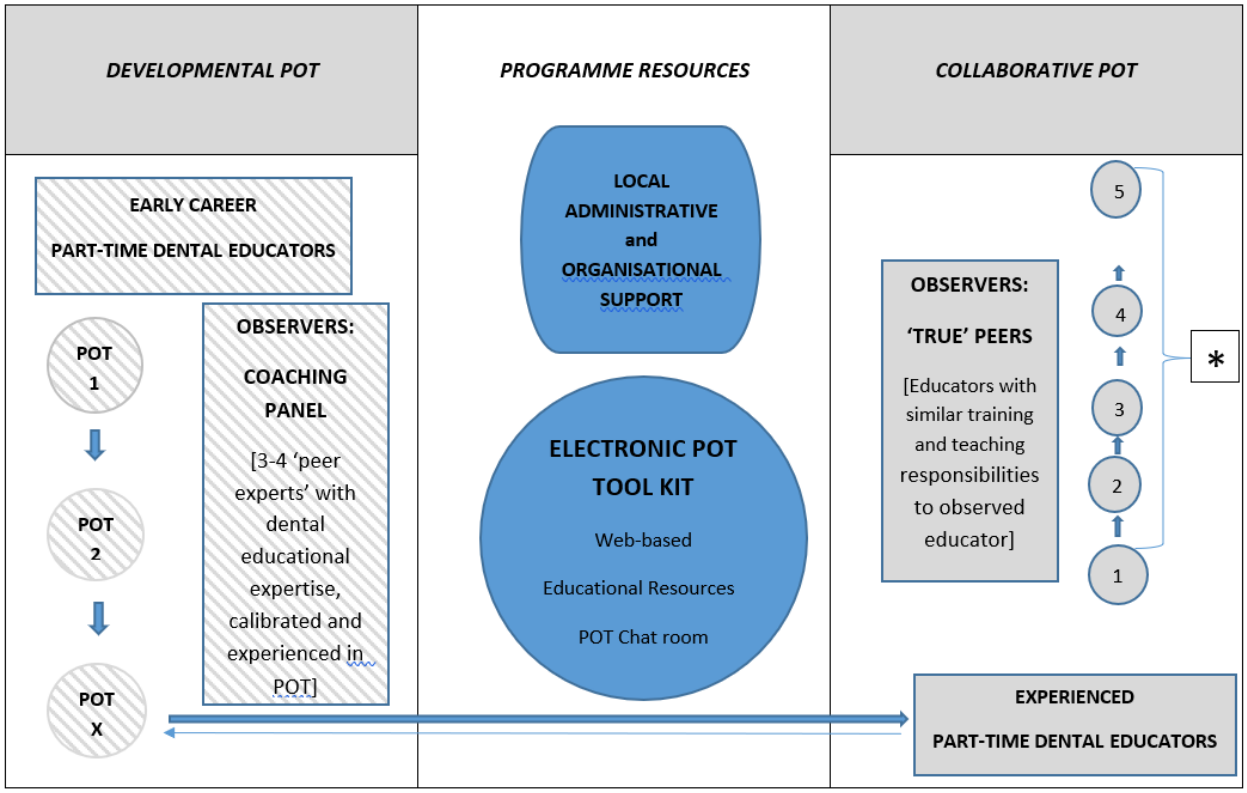
Other than for confirmation that a POT episode has taken place, the outcome of each episode would be confidential apart from the agreed sharing of good educational practice by participants through a dedicated chat room and with the possibility of perhaps yearly Institute teaching and learning meetings. Exceptions to this confidentiality might include occasions when the observee wished to use POT documentation to support their educational appraisal or application for promotion but this should be undertaken with caution to avoid subverting the formative aspects of POT and creating an environment where it is perceived as a formal assessment.

Three stage POT episodes are envisaged. Each would involve a pre-observation meeting to discuss the teaching episode to be observed and any areas of teaching the observee wishes to focus on and goals, the observation episode itself and a post-observation meeting aimed at stimulating reflection and development of teaching so providing a reflective and collaborative structure to POT.[27]

A validated POT instrument is envisaged with output triangulated with feedback from the learners involved in the teaching session. Both sources of information might be easily collected electronically at the POT location through the use of small tablet computers. Early career PTDEs would undergo a series of annual developmental POT episodes involving full unabbreviated three stage POT episodes with a 'peer expert' reviewer. If feasible, more experienced PTDEs might also sit in with 'peer expert' reviewers for additional experience as observers so expanding the 'Community of Educational Practice' [36] and potentially engaging with a 'zone of proximal development'.[37] We envisage a coaching panel of between 3-4 'peer experts' (i.e. experienced, calibrated dental educators who have a background in teaching and learning and have undergone extensive training in peer observation and feedback) [26] More experienced PTDEs would, then, undergo shorter, goal directed collaborative POT episodes [* in Figure] with 'true peers' (ie educators with similar teaching experience, training and teaching responsibilities [13]). Both groups of PTDEs would be supported by a web-based electronic educational resource, essentially a 'POT toolkit', comprising recorded podcasts, video clips and lectures covering key aspects of POT (e.g. feedback and reflection), relevant teaching and learning and educational theory with a focus on the needs of PTDEs. A 'chat room' for PTDEs to share teaching experiences and good practice and to provide support from the PTDE community is also envisaged. Links to further educational resources relating to teaching and learning might also be provided on the dedicated POT web-site. Experienced PTDEs could 'revisit' the developmental POT episodes if they felt that this would refresh their teaching or give them a more global overview of their teaching.

The authors feel that the described coaching programme and toolkit for PTDEs in a Dental Teaching Hospital setting could enhance the ease, acceptability, utility and efficiency of the POT process for PTDEs. With streamlining in mind, we plan to evaluate the most effective duration of the POT observation stage for the brief, goal directed collaborative POT episodes. Whilst these have been envisaged with experienced PTDEs in mind, they may also be effective for time constrained full-time clinical academics.

Figure: Plan for peer observation of teaching coaching programme for part-time dental educators



Outside dental education, this POT programme and toolkit could be of use for part-time clinical educators in medicine including General Practice, nursing, pharmacy and veterinary science with minor adaptions.

Conclusion

This study confirms the already recognized effectiveness of well-conducted POT as a strategy for dental educator development through observation, feedback and self-reflection. It highlights potential barriers which may inhibit full engagement of PTDEs with a traditional POT programme. With appropriate modifications, we envisage that POT may form the foundation of an effective and flexible intervention for PTDEs around which a teaching development programme could be designed. Strategies to enhance the IOD's POT program for PTDEs are suggested. For PTDEs brief, pragmatic, tailored, high quality POT episodes are likely to be more effective and achievable than a rigidly adhered to quota approach. The authors propose the development of an electronic web-based POT delivery system with short, integrated teaching, learning and assessment videos and podcasts targeting time-short PTDEs. This system is likely to be of relevance to part-time educators in other clinical professions such as medicine, nursing and veterinary science.

Conflicts of Interest Statement

The authors have no conflicts of interest to declare.

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Complimentary Information: Survey tool

Survey of Part-time Clinical Teachers in Dentistry

Part-time clinical teachers provide a significant amount of undergraduate clinical teaching in Dentistry. This survey explores this role, the way your teaching skills have been achieved and maintained and your views on how best to provide training on teaching and learning for part time clinical teachers. *Your participation and comments would be greatly appreciated and will be treated in the strictest confidence.*

SECTION A - *About you*

Q1. When did you qualify as a dentist? ☐

Q2. In which department do you work within the Dental Institute/Hospital? ☐

Q3. On which site(s) are you based?

Barkentine ☐ Sir Ludwig Guttman ☐ Steele's Lane ☐ Southend ☐ Whitechapel ☐

Q4. In your current teaching role, what aspects of teaching and assessment are you involved in?

Interviewing ☐ Clinical supervision / Chairside teaching ☐ Tutorials ☐

Laboratory skills teaching ☐ Formal lectures ☐ Assessment ☐ (please specify your role

Level of teaching: Undergraduate ☐ Postgraduate ☐

Q5. How many sessions do you work each week in the Dental Institute and Hospital?

(one session = ½ day) ☐ session(s)

Q6. External to your teaching role what are your other commitments during the working week?

NHS general dental practice ☐ Private dental practice ☐ Specialist practice ☐

Other nonclinical employment ☐ Family commitments ☐ Other ☐

Q7. Approximately how long have you been involved in clinical teaching? ☐

Q8. How did you become involved in clinical teaching? What motivates you to continue teaching?

Comments:

SECTION B – *Your own development as a clinical teacher*

Q1. So far what has your own training in teaching and learning involved?

No formal training ☐ Observation by/of experienced teacher(s) ☐ Experience ☐ Mentor ☐

Certificate ☐ Diploma ☐ Degree ☐ in Education

Training sessions ☐ Recognition by Higher Education Authority (e.g. A/FHEA) ☐

Q2. Do you feel that part-time clinical teachers need formal training in teaching and learning?

Yes ☐ No ☐

Q3. As a part-time clinical teacher do you feel there are any barriers to your professional development as a teacher? Yes ☐ No ☐

Comments:

Q4. How do you feel that continuing professional development in teaching and learning for part-time clinical teachers could be best provided?

Comments:

SECTION C – ***Your experience of Peer Observation of Teaching (POT)***

Q1. Have you experienced peer observation of teaching (POT)? Yes ☐ No ☐

Q2. If you have experienced POT, when did the most recent episode take place?

N/A ☐ During the last 12 months ☐ Other ☐ (Please specify ____ months)

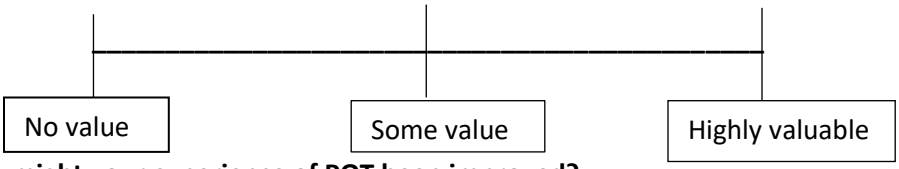
Q3. During this episode of POT were you: The observee ☐ The observer ☐ or Both ☐

Q4. Who observed your teaching?

Friend ☐ Trusted Colleague☐ Senior Colleague ☐ Educationalist ☐ Other ☐

Was your observer a colleague in your own specialty? (Please circle) **Yes** **No**

Q5. How would you rate your personal experience of POT in terms of its impact on your teaching development? Please estimate your response by marking the line below:



Q6. How might your experience of POT been improved?

Comments:

T
5

Thank you for taking the time to complete this survey.