## Original Article



# The benefits of being a near-peer teacher

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## **SUMMARY**

**Background:** Near-peer teaching is used in anatomy education because of its benefits to the learner, teacher and faculty members. Despite the range of reports focusing on the learner, the advantages for the teacher, which are thought to include communication skills, subject knowledge and employability, are only beginning to be explored. **Method:** A questionnaire was distributed to the teachers involved in anatomy near-peer teaching at the University of Southampton and Brighton and Sussex Medical School (BSMS). This questionnaire was designed using a rating scale of 0–10 to

assess teacher perspectives on their level of knowledge, teaching skills and enjoyment of teaching. Free-text responses determined the teachers' motivation and perceived benefits from the teaching.

**Results:** Twenty-eight questionnaires were gathered (54.9% response rate), including 20 from Southampton and eight from BSMS. Long-term knowledge retention and better understanding of the material were rated 8.1 and 7.9 out of 10, respectively. Eight responses were from currently practising doctors, who rated how much they now use their teaching skills as doctors as 8.9 out of

10. Of the eight doctors, seven gained points for their foundation programme applications as a direct result of near-peer teaching. The most common motivator for engaging in teaching was to improve subject matter knowledge and the most common benefit was improved communication skills. **Discussion**: There are numerous advantages to being a near-peer teacher in medical school, which include knowledge improvement, transferrable professional skills and employability. These initial results support the hypothesised benefits to the teachers and provide a foundation for further longitudinal studies.

There are numerous advantages to being a nearpeer teacher in medical school Teacher and learner share cognitive and social congruence

## INTRODUCTION

ear-peer teaching (NPT) is becoming an increasingly popular method of supplementing education within medical curricula, and is described as an approach where the teacher is at least 1 year senior to the learner. It has been implemented for a wide range of purposes, including: anatomy, pathology and physiology.<sup>1-4</sup> There has been a rapidly increasing interest in the use of NPT as a way of supplementing facility resources, thus improving the student learning experience, particularly within anatomy.

The NPT literature shows that there are benefits to the learner. the teacher and the faculty members.<sup>5</sup> The benefits that NPT has for learners result from the unique teacher-learner relationship, whereby their similar stage in training means that the teacher and learner share cognitive and social congruence.<sup>6</sup> The benefits of this to the learner predominantly revolve around more open discourse and admissions of ignorance. Despite the plethora of reports focusing on the benefits to the student learner, there is little evidence describing how the teachers benefit from the experience. The teachers in the Evans and Cuffe study report that they gained teaching and communication skills as well as contributions to their overall career development.<sup>7</sup> Erie et al. report that 88% of their student teachers also benefited from teaching with scholarly output.<sup>8</sup> Aside from these isolated reports there has been no longitudinal follow-up on the long-term advantages for their career progression.

Both the University of Southampton and the Brighton and Sussex Medical School (BSMS) have established NPT programmes that have been running in neuroanatomy since 2010 and anatomy viva preparation since 2013. This study evaluates teachers from two long-standing NPT programmes and is the first to report UK-based results on how useful it is to be a near-peer teacher in the context of future employability.

## **METHOD**

A questionnaire was developed by the authors using four themes (deeper learning, teaching skills, career development and enjoyment) identified in the groundbreaking paper by Evans and Cuffe.<sup>7</sup> A bespoke guestionnaire was required for this programme evaluation because of the absence of a validated survey in the literature, which incorporated an assessment of career and academic outcomes. The questionnaire incorporated Likert-style questions for scoring the teachers' agreement with statements on a scale of 0-10. The teachers were also asked for free-text responses to questions on their motivation for teaching and the greatest benefit that they derived from the teaching process. Lastly, the questionnaire asked student teachers for the number of conference presentations and publications that they had authored on the subject of near-peer teaching as a result of being involved in the NPT programmes.

This questionnaire was distributed by e-mail to 43 individuals who have taught in the Southampton NPT programme in addition to eight students from BSMS. These institutions were selected because of their sustainable teaching programmes, which allow for greater longitudinal follow-up of the teachers. Student teachers who had delivered a teaching session in these programmes were eligible and identified using the authors' personal records of the teaching programmes.

As the questionnaire comprised both quantitative and qualitative components, a dual analysis was performed. Free-text components were collated and analysed with descriptive statistics, including mean averages for the ratings, using GraphPad PRISM 6.

The free-text component of the responses were evaluated for common themes,<sup>9</sup> and the number of responses for each theme were summed together by the lead author (SH). Another researcher (CS) then independently viewed the themes to improve reliability, and the final themes were confirmed through discussion.

#### RESULTS

Twenty-eight questionnaires (54.9% response rate) were returned from near-peer teachers (20 from the University of Southampton; eight from BSMS). Of these 28 responses, eight were received from teachers who have graduated since teaching (six in the UK foundation programme and two in higher training in neurology and neurosurgery).

The questionnaire items relating to the benefits on teacher learning (long-term knowledge retention, understanding of the material and motivation to continue studying the material) were rated 8.1, 7.9 and 6.8 out of 10, respectively. The two items measuring teaching skills (how rewarding they find teaching and how much they use teaching skills now as a doctor) were 9.2 and 8.9 out of 10. Regarding how enjoyable the teachers found the teaching experience, the average rating was 8.9 out of 10. The questionnaire items and feedback scores are shown in Table 1.

As a direct result of being involved in the NPT programme, seven of the eight practising doctors gained points on their foundation programme application system (FPAS) score, which

## Table 1. Mean average responses for questionnaire items (0, least agree; 10, most agree)

Questionnaire item	Average response
Being a near-peer teacher improved my long-term retention of the subject matter	8.1
Being a near-peer teacher helped me to better understand the subject material	7.9
Being a near-peer teacher motivated me to continue studying the material even after the teaching had finished	6.8
I found my near-peer teaching experience reward- ing, and it has motivated me to do more teach- ing in the future	9.2
I developed teaching skills that I now use as a doctor*	8.9
How enjoyable did you find the experience of teaching other medical students?	8.9

\*Responses from the eight responders who are now practising doctors.

## Table 2. Free-text responses to the question 'What motivated you to initially get involved in teaching other medical students?'

Motivation themes	Examples	Numbe
Revision of the subject	You only truly know a subject if you are able to teach it to others'	13
Desire to learn teaching skills	'[I] wanted to build confidence in teach- ing'	10
Wanting to help other students	'Hopefully for students to get something out of it'	9
Enjoyment of previous teaching experiences	'[I] enjoyed previous teaching'	б
Wanting to build their CV	'Teaching experience [is] important for job applications'	3
Enjoyment of neuroanatomy	'Passion for neuroanatomy'	3

is a national application process in the UK for final-year medical students to be allocated to their preferences for postgraduate year-1 rotations. The FPAS score is based on undergraduate examination performance, a situational judgement test and educational achievements (i.e. other degrees and publications, and previously included conference presentations). Both of the doctors in specialist training, and a further three doctors who are currently undergoing applications for specialist training (neurosurgery, ophthalmology and anaesthetics), used their NPT experiences in their applications for higher training.

The 28 teachers responded with 44 free-text comments regarding their motivation for getting involved with the NPT programme (Table 2). The most common reason cited was the teacher wanting to improve their own knowledge of the subject. The free-text question asking how the teachers felt they most benefited from the experience returned 35 items from 28 teachers (Table 3). The most commonly reported benefit was an improvement in confidence for public speaking and better communication skills.

The mean number of conference abstracts per person was 4.3 (range 0–31), and the mean number of published articles was 0.62 (range 0–6). The total number of conference abstracts and published articles disseminated by the University of Southampton NPT programme between 2010 and 2016 was 31 and six, respectively.

## DISCUSSION

Near-peer teaching is a wellestablished practice in the academic and medical literature. The University of Southampton and BSMS have been running NPT programmes in anatomy for many years. These sustainable programmes have utilised a large number of student teachers, overcoming one of the main constraints to investigating the student teacher, which is the relatively low number of teachers involved and the short-lived nature of most programmes. The duration of these programmes creates the opportunity to explore how NPT affects the teachers both in terms of their attitudes as well as the long-term, tangible benefits when the students become doctors.

The respondents of this study believe that the NPT experience has improved their academic ability, given them a better understanding of the material and improved their long-term knowledge retention. The notion that teaching improves one's own learning is epitomised by the The respondents of this study believe that the NPT experience has improved their academic ability Not only does the act of teaching improve the teachers' knowledge, it also motivates them to continue studying the subject

# Table 3. Most common free-text responses to the question 'What do you think has been the greatest benefit you gained from being a near-peer teacher?'

Benefit themes	Examples	Number
Improved subject knowledge	'A proper understanding of the subject content'	14
Confidence for public speaking and com- munication skills	'Confidence to speak to a group of people in a teaching environment'	10
Learned teaching skills for future use	'An interest in teaching that I intend to carry on as FY1'	7
Academic opportuni- ties/CV building	'Multiple academic/research oppor- tunities, conference attendance and publications, etc.'	2

FY1, Foundation Year 1 Doctor

quote from Joubert, who said that 'to teach is to learn twice'.<sup>10</sup> This finding mirrors other teachers' comments published in the anatomy education literature.<sup>2,7</sup>

This study also suggests that not only does the act of teaching improve the teachers' knowledge, it also motivates them to continue studying the subject, which is something that has also been reported previously in the NPT literature.<sup>11</sup> A student or doctor's intrinsic interest in a subject is far more valuable for learning than extrinsic motivators such as examinations, because of its tendency to remain even when the external factors have been removed.<sup>12</sup> It may also form a positive feedback cycle, whereby self-study only increases the student's interest to study further.

In addition to the perceived improvement in subject knowledge and interest in the subject, there are also perceived improvements in transferrable professional skills. The UK General Medical Council's *Outcomes for Graduates* describes the importance of communication methods, which is one of the benefits reported by these teachers (Table 3), and echoes an American evaluation into core teaching competencies in NPT.<sup>8</sup> They also reported that their near-peer teachers had engaged in a range of educational scholarships.

Outcomes for Graduates also highlights the importance of understanding scientific methods. This cohort suggests a career advantage of educational research attained through participating in an NPT programme. Our study indicates that the findings of Erie et al. are reproducible among medical students from the UK,<sup>8</sup> as well as advancing their work by showing that scholarly activity performed by near-peer teachers has a positive impact upon career progression. Teaching experience is hard to quantify beyond the simple fact that one had been involved in it, and the employment benefits gained by these teachers appear to be through scholarly activity in NPT. Engaging in the dissemination of academic work is only possible for the more motivated students in an established. innovative NPT programme.

There are several limitations to this study; most notably, it draws from two case studies that may not be reflective of experiences at other institutions. A second researcher who reviewed

the themes sought to minimise researcher bias, but as both researchers are involved in NPT this may not be truly possible. The academic output of student teachers as measured by conference presentations and publications only relates to these neer-peer teachers, and there are no data on how these numbers compare with students not involved in NPT programmes. Furthermore, the results are based on anatomy programmes and may not reflect the benefits of being a near-peer teacher in other subjects.

In conclusion, this study is the first to report on the potential impact of NPT on success in medical job applications, and as more of these teachers graduate this picture will become clearer. Further longitudinal studies are required to explore the long-term postgraduate benefits of being a neer-peer teacher and which student characteristics lead to the greatest benefits.

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Scholarly activity performed by near-peer teachers has a positive impact upon career progression

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Funding: None.

Conflict of interest: None.

Acknowledgements: None.

Ethical approval: Ethical approval was obtained from the University of Southampton Ethics Committee: Ethics ID 9351.

doi: 10.1111/tct.12784