

The Effect of Cross Year Peer Tutoring in Pharmacy Dispensing Classes: The Wolverhampton Experience

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Abstract

Background: Peer tutoring has been used as an educational tool for sometime in undergraduate healthcare teaching. However, in pharmacy, this approach appears not to have been reported in the literature.

Aims: To gauge student opinion on a cross year peer tutoring scheme that involved senior peers (final year students) facilitating academic staff in first year dispensing classes.

Method: Ten fourth year students volunteered to facilitate first year dispensing classes. Fourth year students were briefed as to their role and each student was involved in a minimum of two dispensing classes. After the final dispensing class had taken place both first and fourth year student opinion was sought on their experiences via online questionnaires.

Results: Both first and fourth year students were very positive about their experiences. First year students learnt from their peers and were able to relate to see how they might themselves develop. Fourth year students benefitted by being able to reinforce skills and knowledge and used the experience as a means of reflection, which helped them realise how they had developed and gave them more confidence in their ability. Both sets of students had empathy toward each other. This was most apparent with regard to first year students feeling more at ease asking questions of their peers rather than academic staff.

Conclusion: The peer tutoring scheme used in dispensing classes was seen by both tutees and tutors as beneficial.

Keywords: *Education, peer tutoring, pharmacy undergraduate.*

Introduction

The use of peers to teach is not new (Krych *et al.*, 2005) Systematic reviews of healthcare (Santee & Garavalia, 2006; Secomb, 2008) and non-healthcare literature (Rohrbeck *et al.*, 2003) have consistently shown positive benefits to both the tutee and tutor. These, for the tutee, include positive impact on academic performance (Santee & Garavalia, 2006; Schaffer *et al.*, 1990; Sobral, 1994) and for tutors a reinforcement of learned skills and greater confidence (Haist *et al.*, 1997; Field *et al.*, 2007; Ramset *et al.*, 2000). Reported benefits to both tutee and tutor include the enhancement of skills (Ebbert *et al.*, 1999; Buckley & Zamora, 2007; Nestel & Kidd, 2005). The literature therefore points strongly to peer teaching/tutoring being an effective educational intervention. It has been widely adopted in medicine but, to date, pharmacy programmes appear not to have utilised this approach. Given the strength of evidence and its success in other healthcare professions we decided to trial a peer tutoring scheme, in which year 1 pharmacy students were tutored by year 4 students in their dispensing practice classes. This paper reports on this pilot scheme.

Methods

Background and context

The Pharmacy Department at the University of Wolverhampton has recently been established, and gained full accreditation status from the professional regulator in 2010 when the first cohort of students graduated. Like all pharmacy departments in the United Kingdom (U.K.), to gain and maintain full accreditation from the professional regulator, requires the meeting of specific criteria and outcomes. Under the old regulator (up to 2010), The Royal Pharmaceutical Society of Great Britain, 101 points had to be satisfied. A number of these points centred on the sale and supply of medicines. To demonstrate that the Pharmacy Department at Wolverhampton University met these points the curriculum contained specific credit-rated blocks of learning in the first two years of the four-year Master of Pharmacy (MPharm) degree, where students complete a series of practical dispensing classes. On completion students must demonstrate the legal, safe and appropriate supply of medicines. The aim of the first year is to make students safe dispensers whilst the second year builds on this foundation and tackles more complex prescribing with an emphasis on resolving clinical

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problems. No further classes to practice these ‘dispensing’ skills are provided in the third and fourth year of the course.

Student evaluation of the course by our 2010 graduates highlighted their desire to have opportunities in the final year to refresh and reinforce these skills before embarking on their pre-registration year in practice prior to qualification and registration as a pharmacist.

Mindful of this feedback and cognisant of the new accreditation outcomes set by the new regulator, The General Pharmaceutical Council (Condition 10, statement 10.1(f), ‘Contribute to the education and training of other members of the team, including peer review and assessment’), a peer tutoring scheme was piloted during the academic year 2010-11.

The Peer Tutoring Scheme (PTS)

The scheme design was to give fourth year students the opportunity to take part in the running of year 1 dispensing classes. The scheme was open to all fourth year students on a voluntary basis. Details of the scheme were disseminated during lectures and posted on the department’s intranet. As this was a pilot scheme, the number of fourth year students was limited to 10 (fourth year cohort was 32) for pragmatic and logistical reasons. For those students who were selected, further information was provided that detailed the role they would play during the dispensing classes. Students did not replace any scheduled member of teaching staff but were complementary to their number. In each teaching session two fourth-year students were present. Students had the same remit as teaching staff; to field and answer year 1 student enquires and to provide support and assistance in completing the set tasks. All students took part in at least two dispensing class sessions.

PTS Evaluation

Online surveys specific to year 1 and year 4 students were developed. Questions in the first year survey consisted primarily of open and semantic differential scale (e.g. Likert scales) questions. The fourth year survey consisted only of open-ended questions. Responses were collated, stored and analysed using spreadsheets (Microsoft Excel 2003 for Windows). Simple descriptive statistics were used to summarise respondents’ data. Free text answers were categorised by one researcher (PR) and common themes generated. These themes were reviewed by the lead author (DG) and agreed upon.

Results

Seven of the 10 fourth year students and 62 from 65 (95.4%) first year students responded to the online questionnaires.

First Year Student Findings

All first year students (62, 100%) were aware of the PTS before dispensing classes began. Responses to five statements (Table I) highlighted very high levels of student agreement. They felt that fourth year students had helped in their learning about dispensing (98%) and that interaction with their peers had provided the opportunity to observe their skills (90%)

and understand their knowledge (90%), which had given them an insight into how their skills and knowledge might develop (95%). They also agreed (95%) that they could ask questions of fourth year students that they would be reluctant to do so with academic staff.

Table I: Year One Student Opinion of the PTS

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
It allowed me to ask questions that I would have been reluctant to ask a tutor (n=62)	51.6% (32)	33.9% (21)	9.7% (6)	3.2% (2)	1.6% (1)
Year 4 students have helped me learn about dispensing practice (n=62)	51.6% (32)	46.8% (29)	1.6% (1)	0.0% (0)	0.0% (0)
Enabled me to observe their skills (n=62)	35.5% (22)	54.8% (34)	8.1% (5)	1.6% (1)	0.0% (0)
Helped me to understand their knowledge (n=62)	40.3% (25)	50.0% (31)	8.1% (5)	1.6% (1)	0.0% (0)
Given me an insight into how my own skills and knowledge might develop as I progress through the course (n=62)	61.3% (38)	33.9% (21)	3.2% (2)	1.6% (1)	0.0% (0)

Further open questions were asked to determine both positive and negative experiences of the PTS. Positive comments far outweighed the negatives. Negative comments focused on the relative inexperience and lack of knowledge of the fourth year students when compared to members of staff (all experienced pharmacists).

‘The students were sometimes not able to answer your questions/queries.’ (participant 12)

‘The only thing would be that their experience isn’t the same as members of staff.’ (participant 39)

This was further expanded on by a small number of students, stating that the fourth year students, at times, gave poor advice.

‘They sometimes make mistakes too in the information we are told by them.’ (participant 52)

‘Instances where the fourth year gave advice contradictory to that given by the tutors.’ (participant 31)

Year one students also noted that fourth year students could be too accommodating compared to academic staff, stating,

‘Sometimes they would be too friendly and give us too much help not allowing us to work things out on our own’ (participant 2),

and

‘They may have been more lenient on us’. (participant 5)

The emergence of positive themes experienced by first year students centred on the connection they made with fourth year students, through a sense of empathy and shared experiences. First year students made repeated reference to the fact that

they were fellow students and had already gone through the course:

'It was easy to relate to someone who was a pharmacy student because they have already experienced our situation.' (participant 16)

'Having someone who can relate to you. Someone who is able to understand any problems you are having and to provide useful advice and guidance.' (participant 39)

This peer relationship also translated in to first year students finding fourth year students more approachable than staff:

'Sometimes you will feel more at ease asking a student as they have been through it all recently and so you won't feel stupid asking them a minor question.' (participant 3)

'Having fourth year students made it easier to approach them about problems than lecturers.' (participant 27)

'You could relate to the students more; you were not afraid to ask them any questions.' (participant 12)

'....., less embarrassing to make mistakes in front of them/ask them silly questions.' (participant 7)

Year one students also recognised the value of year four students as role models; appreciating the help they gave and recognising the differences between their own knowledge and skills and those shown by their senior peers. Typical comments included:

'We got a chance to speak to older students and see how much more advanced is their knowledge.' (participant 11)

'Useful for they would give you tips and hints through their own experiences of the course that the lecturers would not.' (participant 49)

'...it is positive because a few years ago they were in the same situation as I am today, and I can see how much they have progressed.' (participant 24)

All first year students (62, 100%) said that the PTS should be continued.

Fourth Year Student Findings

Analysis of the open-ended questions showed they found the experience beneficial to themselves as well as helping year one students. To their fellow students they saw themselves as being empathic, easy to approach and provided reassurance and support. Personally, they were able to appraise their knowledge and skills and use the sessions as a reflective tool to aid learning. One fourth student stated:

'I think they appreciated the fact that we were giving them tips and advice from a student's point of view.' (participant 3)

and another said:

'It was good that I could reassure them with what they were doing.' (participant 4)

In relation to empathising with year one students, more than one fourth year student spoke of *'being in their shoes'*:

'I was once in that situation and found it difficult at first.' (participant 5)

'It gave me a chance to remember what it was like for me...and made me appreciate what the first years' were going

through. The first years felt out of their depth at times just as we did.' (participant 4)

Fourth year students (like first year students) recognised that they were easier to talk to than staff:

'...the help we were giving them came from a peer and not a lecturer so maybe the barrier for communication is less and maybe they found it easier asking us questions without feeling self-conscious.' (participant 4)

'Some students may find it difficult to approach staff, with them knowing we are also students they find it easy to ask for advice.' (participant 1)

The fourth year students personally valued being part of the dispensing classes, especially as it enabled them to refresh and highlight gaps in their skills and knowledge:

'...dust up on my own dispensing skills.' (participant 1)

'Allows you to fill in gaps in your own knowledge and gives practice in teaching others.' (participant 7)

The classes also acted as a tool in aiding self-reflection, exemplified by comments such as:

'I learnt that I am developing into a confident and competent pharmacy student. I found that certain aspects I really struggled with when I was a year 1 student, such as pharmaceutical/dose related calculations, had become so much easier. Thus the session really provided me with a sense of awareness of how far I had progressed as a pharmacy student.' (participant 2)

'I realised how far I have come since my first year and how much I've learnt and developed as a future pharmacist since then. I felt confident interacting with first years and realised that I would love to do this in the future.' (participant 6)

All enjoyed the opportunity to participate in the dispensing classes and interact with first year students (who they otherwise would have no contact with).

'I particularly liked the student interaction we had, as it gave us the opportunity to pass on some words of advice to the 1st years.' (participant 3)

'One example which resonated with me was sitting down with a student and helping her work out an under-dose. By breaking down the calculation into simple steps, she had a much better understanding of the prescription. She was very thankful about learning a new approach to calculating dosages, and this gave me great satisfaction – knowing that I helped make a difference.' (participant 2)

All fourth year students wanted to further opportunities to be involved in dispensing classes.

Improvements to the PTS

All students (year 1 and 4) were asked how the scheme could be improved. Year one students wanted to have more fourth year students involved, and to expand their involvement to all classes. Fourth year students were very positive about their experience and had little in the way of suggested improvements, except that more comprehensive briefings from staff would have been helpful so they were clear on what their remit was. The comment below sums up their feelings to the PTS:

'I think all year 4 students should be involved in providing this kind of support, as ultimately the students will learn a great deal about themselves. Moreover, it would provide the students with: the confidence they need before undergoing pre-reg; the opportunity to reflect and consolidate their knowledge; and also a chance to improve their interpersonal/communication skills. On the whole, I would say it's a fun, new, and very useful exercise for pharmacy students to undertake at Masters level!' (participant 2)

Discussion

The use of PTS is reported here in a new Department of Pharmacy operating under new regulatory requirements in the UK. This afforded the department the opportunity to engage in new ways in which to deliver the curriculum.

The PTS was perceived by both first and fourth year students positively and was endorsed by all students who wanted the scheme to continue. Benefits identified by students do mirror findings seen in other studies as previously highlighted in the introduction; year one students learnt from their senior peers and drew strength from seeing how fourth year students had developed. Fourth year students gained confidence in their own ability, valued the opportunity to share their knowledge and were able to reflect on their knowledge and skills.

Both sets of students had a sense of empathy toward each other and this relationship was reflected in first year students feeling more at ease to talk to fourth year students compared to academic staff. This latter finding was also echoed by fourth year students and is an important consideration for academic staff. If students are uncomfortable asking questions, then their understanding and ultimately attainment and progression may be adversely affected. In this pilot study we do not know if student attainment was affected but other studies do point to peer tutoring schemes having positive effects on academic achievement (Santee & Garavalia 2006; Schaffer *et al.*, 1990; Sobral, 1994).

We were surprised by the overwhelming positive response to the scheme by students. At Wolverhampton University dispensing classes have a high staff/student ratio (typically 1:5) but increasing financial constraints in higher education and expanding undergraduate pharmacy numbers means this level of support is becoming more difficult to maintain. The results from this study seem to suggest that a PTS seems an appropriate way of delivering dispensing classes. It has shown benefits to both sets of students and provides a mechanism to maintain high levels of student support. It does not seem unreasonable to think that PTS could be replicated in other parts of the curricula.

The PTS also appears to be fulfilling three important pillars of the concept of the 'Seven Star Pharmacist'; communicator, life-long learner, and teacher (WHO, 2006). The PTS approach is one in which we have therefore decided to expand even though it is currently not known if the PTS affected student ability to perform tasks at the desired level as measured through a final summative assessment. Based on the findings from this study, for the academic year 2011-2012 the PTS scheme was expanded to include all year one and two dispensing classes supported by a minimum of 20 fourth year students. Measures of first year student attainment were sought from this cohort as well as inclusion of reflective

portfolio entries for fourth year students that counted toward summative assessment.

Conclusion

The PTS implemented was positively received by both tutors and tutees and provided evidence that dispensing skills can be taught using such teaching strategies.

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