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PRACTICE PAPER

Students as Educators

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Abstract

The aim of this study was to evaluate peer assisted learning (PAL) in a pharmacy course context. PAL is interesting for educationalists as the technique offers reciprocity in learning between the student tutor and the student tutee. Both student tutor and student tutee have the ability to learn through the process. 14 students volunteered to be student tutors on a first year pharmacy practice module. The results are discussed from the perspective of both the student tutee and tutor. Although a small pilot study, the results from this project echo the themes of perceived benefits identified in the literature on PAL, most obviously with the three themes of confidence, collaboration, and learning. Challenges to the process are also discussed.

Keywords: peer assisted learning (PAL), near peer tutor, increased confidence, knowledge and skills

Introduction

Peer assisted learning (PAL) has been defined as “the use of teaching and learning strategies in which students learn with and from each other without the intervention of a teacher” (Boud *et al.* 1999, p41).

The most common model of PAL is that of cross-level peer tutoring (Falchikov 2001), whereby a student from a higher year level helps to facilitate learning. Versions of PAL have been widely implemented in schools and colleges as well as undergraduate and postgraduate teaching in the USA, where the technique is often known as supplemental instruction (Hammond *et al.* 2010). The technique is starting to have an increasing uptake in UK educational institutions.

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PAL engages students in the learning process and previous research has found it produces academic gains for a variety of student populations and across a number of academic disciplines. Tariq (2005) looked at PAL in first year undergraduate bioscience students and how it helped increase students' self confidence in problem solving and numerical skills. The less formal environment of PAL, the study found, enabled students to ask more questions. Research suggests that PAL can deepen student tutors' learning (Cate & Durning 2007, Evans & Cuffe 2009), help to reduce drop out and encourage student-centred learning (Coe *et al.* 1999). PAL has also been found to help students learn about learning (Price & Rust 1995), provide psychological support, aid both personal and professional development (Escovitz 1990), and provide taught students with emotional support and greater self-confidence (Field *et al.* 2007, McKenna & French 2011). In a UK study of same-year PAL, Hammond *et al.* (2010) concluded that the majority of students found PAL helped with social aspects of learning, such as learning with others and gaining other perspectives which contributed to their enjoyment of learning, but that it did not improve study skills or assignment preparation.

More recently Campolo *et al.* (2013) used a technique of PAL known as near peer teaching (NPT), which is a teaching model whereby the students of similar backgrounds, separated by a year of two, teach each other (Bulte *et al.* 2007). Campolo *et al.* (2013), from interviews with student tutors involved in the NPT process, found four main themes of the process: confidence, including confidence in their knowledge as well as their leadership skills; collaboration, including helping their peers and collaborations with fellow student tutors; pressure, as a result of their own high expectations of being a tutor, and learning content and the teaching process. The term near peer tutor (NPT) will be adopted in this report to describe the student tutors.

In general, PAL is viewed as a valuable supplement to traditional teaching and education, with some provisos. Wallace (1997) suggests that the technique provides a good source of facilitation, rather than teaching, and Hammond *et al.* (2010) found that PAL is helpful for clarifying basic concepts but less so for understanding complex concepts. Bulte *et al.* (2007) found that some student learners involved in the PAL process felt they may not have received the correct answers from student tutors. In order to reduce this student tutors need to be well prepared and research has found that student tutors need formalised training to help them prepare for their role and for them to

be adequately prepared for their teaching role (Bulte *et al.* 2007, McKenna & French 2011, Campolo *et al.* 2013). Hammond *et al.* (2010) found that students imposed pressure on themselves to adequately fulfil the student tutor role and from their research suggest that students need help to structure teaching sessions which will help reduce the pressure on them.

Methods

Students in years two, three and four of the MPharm course were invited to volunteer to assist in the teaching of first year dispensing workshops. Students committed to attending a minimum of three first-year dispensing workshops over an eight-week period. An information session was held to brief students on the project. Students who wished to go ahead completed a consent form. The students then undertook a prescription-checking exercise and completed a dispensing-competency assessment workbook to establish a baseline of their knowledge in this area.

The dispensing workshops are part of the existing teaching structure, and as such 'taught' students are already participants. First year students could choose to actively opt-out of any one-to-one or small group work with an NPT. After they had supported three dispensing workshops, the NPTs repeated the prescription-checking exercise and the dispensing-competency assessment and were invited to attend an individual face-to-face semi-structured interview. The interview schedule included questions relating to perceived benefits, experience of the sessions themselves, and the opportunity to suggest improvements.

During the final dispensing workshop, first year students were invited to attend one of a series of group feedback sessions, to share their experiences of the NPT supported sessions. Students were asked to write down comments on post-it notes on what they thought were benefits gained from the process, things they enjoyed, anything they didn't like and anything they felt should be changed to improve the process if it ran again. Students did not have to write comments as the process was voluntary. However, students were also encouraged to comment because the aim of the post-it notes was to provide a level of anonymity.

The interviews and feedback sessions were conducted by researchers within the department and not by teaching staff. All interviews were recorded and transcribed and the written comments from the group feedback sessions were transcribed. Thematic content analysis was conducted by two members of the research team.

Results

14 students originally volunteered to take part as NPTs; 13 students took part in the workshop support sessions (year 2=2, year 3=7 and year 4=4 students). Ten NPTs attended the face-to-face interviews, and seven NPTs completed the repeat assessment. The interviews lasted between 10 and 20 minutes. All 14 NPTs completed the initial assessment. Both assessments indicated a reasonably high level of competence. The objective measure – the prescription-checking exercise – showed an average score of 84%. The self-assessed competency record showed the NPTs rated themselves at the highest level of competency in an average of 56 out of 69 competencies. Only seven of the 14 completed the repeat assessment. The results of the prescription-checking exercise and the dispensing-competency assessment were reviewed and analysed descriptively. In general the NPTs improved in their score in the prescription-checking exercise. All completing NPTs improved in the key legal and clinical areas and the dispensing-competency assessments also showed an upward trend, with an average high competency rating of 65 out of 69, with all but one student indicating that their competency levels had improved.

All 130 first year pharmacy students took part in the process and all took part in group feedback sessions. The number of students per group was between six and ten, and each group took between

10–20 minutes to complete. A total number of 16 groups were conducted over two three-hour teaching sessions.

Individual interviews

The NPTs were overwhelmingly positive about the experience. All of the NPTs would recommend the experience to others, and all of them would repeat the experience.

NPTs talked about their own experience, and their perceptions of the experience for the first year students. For the NPT perspective, five themes emerged:

- Increased confidence, in content skills.
- Increased confidence, generally.
- Increased content knowledge.
- The experience as positive for all.
- Comments related to structure and preparation.

Table 1 presents some themed comments from the interviews.

The NPTs perceived three main benefits for the first year students: the availability of more helpers; the ability to share experiences; and the benefits of the informal environment. The NPTs enjoyed helping the first year students and there wasn't anything they hadn't liked – where negative comments were made these were only minor

Table 1 Themed comments from the NPT interviews.

Theme	Examples
Increased confidence: content skills & generally	Yeah, after helping other people and seeing what other people get wrong, helps me a bit more when I'm doing it myself. Yeah I do, initially I was a bit uncertain to where I stand but now I do feel a bit more confident as I've had interactions with students and teachers, so that's made me feel more confident.
Increased content knowledge	I feel like I've improved on my legal and clinical checks more than anything else.
Positive experience	Yeah, I think all parties benefit from it.
Structure & preparation	Just may be a bit more structure so you knew what you were doing that week. Erm, I think just be prepared, and make sure you know your calculations and stuff like that because you don't want be giving people the wrong answers and advice and stuff.
Availability of more helpers	I think they benefited in the way that there were a lot more people on hand to help them and speak to so we didn't see anyone waiting around.
Peer helper benefits	Yeah like I say, there's different ways of looking at things from a student perspective and we've gone through everything that they're going through at the moment, so we've done all the tests they've done, so we can look at it this way and say 'well this will help you when you do your exam' and a lot of people were like 'all right I didn't know that' – like things in the BNF, so yeah, I think 'cos we're thinking from the same wavelength it was definitely helpful to them.
Informal environment	Most of the students felt more at ease talking to us students rather than the teachers.

points relating to the timing and scheduling of the sessions.

Group feedback sessions

As with the feedback from the NPTs, the vast majority of comments from the first year students in the session were positive. These can be grouped into five themes:

- NPTs sharing their experiences and tips.
- More help being available.
- Approachable NPTs and an informal environment.
- Having a shared perspective.
- Content-specific benefits.

Table 2 presents some themed comments from the group feedback sessions.

The main benefit was considered to be the NPTs sharing experience and tips. These themes appeared in discussion of benefits and of the things the students enjoyed.

The negative aspects reflected three themes. Two of these were the negative side of the above themes, in that some NPTs were not approachable, and some were not helpful. A further theme was a content-related theme, in that some NPTs did not have sufficient knowledge. Students in particular commented on the lack of knowledge of some of the NPTs from the second year.

With regard to areas for improvement with the process, the most common comment was having more NPTs helping per session, and more time with the NPTs.

Discussion

Although a small pilot study, the results from this project echo the themes of perceived benefits

identified in the literature on PAL. In particular these results can be seen to match the four theme framework identified by Campolo *et al.* (2013), most obviously with the three themes of confidence, collaboration, and learning. The fourth theme – self-pressure from high expectations – was not so obvious, but did appear in both the NPT interviews, and in the critical comments of the first year students who were disappointed when the NPTs did not meet their expectations.

In general it is apparent that the first year students involved in the PAL sessions enjoyed the process and believed they benefited, both academically and socially. This is apparent from the sheer number of comments for the benefits and enjoyment questions compared to the number of responses to the question of dislike and improve. Similarly, the results from the NPT interviews express a high level of enjoyment with the sessions. The near-peer element appears to be central to the benefits identified by both sets of participants, grounded in the shared experience of studying the same course and the same set of skills. These positive elements were also recognised by staff. The findings from this study do suggest a small improvement in the content knowledge of the NPTs. It is possible that those students who volunteered for this study were already very competent and therefore there was little room for improvement.

The study identified several key challenges. The strongest requirement coming through from both NPTs and first year students was the need for more structure in the sessions. A linked theme was the need for the NPTs to make sure they have undertaken appropriate preparation. There are also staff resource implications to consider when introducing any similar scheme. Although it has been suggested in this study that the existing

Table 2 Themed comments from the group feedback sessions.

Theme	Examples
NPTs sharing experience	Passing on their experience and knowledge.
Availability of more helpers	Extra attention on top of teaching.
Approachable NPTs & informal environment: positive & negative	More approachable . . . friendly. Less formal . . . felt less intimidated. Certain students didn't help much, just acted like a lecturer.
Shared perspective	Were able to explain from a student's point of view.
Content specific: benefits and negatives	Made using the labelling software on the computers easier. Some students did not know how to explain things well. Lack of knowledge from year two students.

benefits are sufficient justification for the value of PAL, it may be important to demonstrate improvements in learning. This study has highlighted the need for sensitive and robust evaluation measures.

Although the near-peer element of the process was highly valued, first year students identified a lack of appropriate knowledge as a negative aspect, with the first year students commenting particularly on the NPTs who were only one year ahead of them. How NPTs are selected or recruited is therefore a major challenge. It will be necessary to address whether taking part as an NPT should be compulsory or voluntary, what might be an appropriate selection process, or what resources would be necessary to support all students to undertake the NPT role.

There are a number of limitations to the study. Firstly, because the study was a pilot study the sample was small. Secondly, whilst the majority of NPTs took part in the interviews, just over half completed the assessment, therefore limiting the findings of competency improvement. Thirdly, due to the structured nature of the interviews with the NPTs, and the need to get comparable data, the interviews tended to be short. Further research would be needed to explore in more depth and

gain a better understanding of the learning outcomes of being an NPT.

Conclusion

Whilst Hammond *et al.* (2010) found that enjoyment does not necessarily equate to any improvement in learning or skills, it could be argued the role modelling and cross-year socialisation apparent from this study is sufficient justification for developing an integrated programme of near-peer teaching. In addition, the NPTs benefit through increased confidence and communication skills, and in providing evidence for portfolios and CVs when seeking employment. Although there are some concerns over resourcing, there are clearly benefits for the course in terms of enhanced student satisfaction, and in meeting the requirements of the employability agenda. Although small, this pilot study has shown the benefits that can come from peer assisted learning, and the very great impact that the process can have.

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