WEB PAPER

A vertical study programme for medical students: Peer-assisted learning in practice

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Abstract

Background: Monash University employs a vertically-integrated curriculum with cumulative knowledge testing throughout the course. To facilitate cross-year level revision, a vertical study programme (VESPA) was established using the principles of peer-assisted learning (PAL).

Aim: To implement and evaluate VESPA in relation to defined objectives.

Methods: Following from a successful pilot, a working group organised five 2 h VESPA sessions over the course of 2009. Each was case-based and study materials were provided. Participants were allocated to a group of 10–15 students of all year levels, and pre-interns acted as facilitators. Sessions were evaluated using a 10-question survey.

Results: A total of 647 evaluation surveys were completed overall and participant numbers ranged from 79 to 182 per session. Of these, 624 (96%) agreed the case materials were easy to follow and 562 (87%) believed they allowed students from all year levels to contribute; 552 (85%) felt VESPA helped them understand curriculum content. There were no significant differences between sessions.

Conclusions: VESPA represents an innovative application of PAL that has been well received by students. Potential benefits to participants include academic revision, the development of mentoring relationships and enhanced teaching and facilitation skills. This model of a structured revision programme would suit other settings with vertically-integrated curricula and assessment.

Introduction

Peer-assisted learning (PAL), which refers to 'people from similar social groupings who are not professional teachers helping each other learn and learning themselves by teaching' (Topping 1996), is increasingly being used in medical programmes (Nikendei et al. 2009; Kommelage & Thabrew 2011). Its benefits include preparation for future educational responsibilities, alleviation of faculty teaching burden and the establishment of mentoring relationships (ten Cate & Durning 2007). In addition, students may find it less threatening and more motivating than traditional learning models (Escovitz 1990). Participants can assume a number of roles including facilitator, information provider and role model (Bulte et al. 2007). In acknowledgement that a lack of leadership or expertise in facilitation may lead to inefficient use of learning opportunities, training is usually provided for students in the teaching role (Lockspeiser et al. 2008; Evans & Cuffe 2009).

Since 2003, a voluntary peer-led revision programme ('Study Buddy') has operated at Monash University's Clayton campus for pre-clinical students. In the context of a vertically-integrated curriculum, a small group of students and educators identified that 'Study Buddy' could form the basis of a more expansive PAL initiative. After a successful pilot in 2008 (Kam et al. 2010), the vertical study programme (VESPA) was introduced in 2009 as an ongoing, case-based revision programme for students across all year levels (i.e. years 1–5) in the Bachelor of Medicine/Bachelor of Surgery (MBBS) programme. The programme had three primary objectives: to provide an effective forum for revision in the setting of vertically-integrated assessment; to develop a culture of collaboration and peer support; and to foster the development of teaching and facilitation skills of pre-intern participants.

Practice points

- In our PAL programme participants most enjoyed the interaction between junior and senior students and the opportunity for revision.
- When developing case materials the ability for junior students to contribute should be considered.
- Formal training sessions for facilitators may improve the educational experience.
- Ongoing support from the Faculty of Medicine to provide the educational space required has enabled the programme to continue.

Methods

Setting

Monash University delivers a MBBS programme across three campuses in Victoria, Australia. The largest cohort is based at

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Table 1. Issues for discussion (ischaemic heart disease VESPA case, 2008).

Year level to lead discussion	Issue for discussion
Year 1	• The role and influence of various risk factors in the development of ischaemic heart disease • Principles in successful health behaviour change programmes
Year 2	• The electrical conduction pathway of myocardium • The role and mechanism of the electrocardiogram • Important concepts in cardiovascular physiology, including regulation of blood pressure, myocardial contractility and atrial/ventricular filling
Year 3	• Presentation and management of acute coronary syndrome • The physiology of heart failure
Year 4	• Investigation of ischaemic heart disease in the out-patient setting • The effects of pregnancy on the cardiovascular system
Year 5	• The pharmacology and practical use of common cardiac medications

Clayton in metropolitan Melbourne. Curricula and assessment processes are vertically-integrated, with cumulative knowledge testing throughout the course. Despite the expectation that students retain and build on their learning from previous years, there are limited opportunities throughout the programme for junior and senior students to interact. The main reason for this is logistical; clinical students are posted to different sites across the breadth of the state of Victoria, depending on the focus of their particular rotation.

Implementation

A working group (WG), comprised of senior medical students and two staff, organised five, two-hour sessions across the course of one academic year (2009); each was held during the evening at the main university campus. Prior to each 'case-based' session, students registered via an online system and allocated to a group of 10–15, students with representation from all year levels. The five sessions provided opportunity for revision in cardiac clinical skills, haemophilia, diabetes, breast cancer and depression. Case materials were constructed by students in the WG and then reviewed by the entire group.

At the beginning of each session, all students received the case narrative and a list of 'Issues for Discussion' relevant to each year level (Table 1). Those in their pre-intern year were invited to act as facilitators and given more detailed reference material. Formal training in PAL was not provided, however, case authors met with facilitators immediately prior to each session to discuss teaching points and management of case discussion. No specific learning objectives were determined as VESPA was neither designed as a formal learning activity nor intended to replicate the existing problem-based learning programme. While the narrative and 'Issues for Discussion' (knowledge areas) were provided as a framework for interaction, it was hoped that the format and focus for each group would develop organically, depending on the identified needs of the participants.

Table 2. Evaluation survey questions.

Question	Available responses
Which year level are you in?	1/2/3/4/5
Are you an international student or a local student?	Local/international
The case materials were easy to follow	Strongly disagree/disagree/undecided/agree/strongly agree
The case content allowed contribution from each year level	Strongly disagree/disagree/undecided/agree/strongly agree
The session helped with my understanding of curriculum content	Strongly disagree/disagree/undecided/agree/strongly agree
I would recommend VESPA case nights to others	Strongly disagree/disagree/undecided/agree/strongly agree
How frequently should VESPA nights be held?	Free text
What was good about the VESPA case night?	Free text
How could VESPA case nights be improved?	Free text
Other comments	Free text

Evaluation

Each session was evaluated using a 10-question survey tool (Table 2). This was distributed at the conclusion of each session. Key items were analysed using a five-point Likert scale. Participants were also invited to provide free-text comments. Quantitative data was analysed with SPSS 16 (Graduate Version) and Excel. Qualitative data were analysed using thematic analysis.

Results

Quantitative

The number of completed surveys ranged from 182 (session one) to 79 (session five); they decreased in a step-wise fashion throughout the programme. Pre-clinical students were consistently over-represented.

In total, 647 evaluation surveys were completed throughout the programme. In a pooled analysis, 624 (96%) agreed that the case materials were easy to follow and 562 (87%) believed they allowed students from all year levels to contribute. A majority (552; 85%) felt VESPA helped them understand curriculum content and 614 (95%) said they would recommend VESPA nights to others. There were no significant differences between sessions.

Qualitative

From all surveys, 561 (86.7%) returned responses with qualitative data. Reported strengths of the programme included the interaction between junior and senior students (243 responses) and the opportunity for revision (107 responses). A frequent theme for improvement was that greater emphasis on first year material would allow junior students to contribute more substantially (55 responses).

Discussion

Despite methodological limitations, evaluation data were overwhelmingly positive. There are indications that the programme met its first two objectives. The degree to which final year students benefited from the opportunity to facilitate and teach has not yet been assessed.

Formal attendance records were not kept as VESPA sessions were designed to be informal and voluntary. Therefore a definite survey response rate could not be calculated. The number of completed surveys closely correlated with the number of participants registered for each session, but using the number of registrations to determine a response rate would be inaccurate as 'walk in' students would be unaccounted for. Despite the overall positive evaluation, survey numbers declined over the year in a linear fashion. This is likely to represent a trend in attendance, rather than a change in response rate.

Possible reasons for declining attendance include a loss of initial enthusiasm, multiple competing priorities at the end of the academic year, and sub-optimal experience in earlier sessions. That said, only a small number of participants did not feel that VESPA helped them understand curriculum content. Formal training sessions for facilitators may improve the educational experience, and future evaluations will explore this benefit.

Ongoing support from the Faculty of Medicine to provide the educational space required has enabled the programme to continue. In 2010, the number of sessions was expanded to three per semester, with a total of 668 evaluation forms received. Interim evaluation compares to the 2009 data reported here: 95% agreed they would recommend VESPA nights to others. In 2010 and 2011, new WG members and case writers were recruited from year 5 participants to replace outgoing, graduating students. Facilitator training was made available to year 5 participants and evaluation data suggests that there is much scope for expanding this highly valued element of the programme.

Conclusion

VESPA represents an innovative application of PAL that has been well received by students. Potential benefits for participants include academic revision, the development of mentoring relationships and enhanced teaching and facilitation skills. This model of a structured revision programme would suit other settings with vertically-integrated curricula and assessment. Key ingredients for success include student engagement in programme design, sustainable resourcing and facilitator training.

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