

INSTRUCTIONAL METHODS AND TECHNIQUES

What Medical Students Value in a Population Health Tutor: Characteristics for Consideration in Staff Recruitment and Development

LYNDAL TREVENA

Department of Public Health and Community Medicine, Faculty of Medicine, The University of Sydney, Australia

ABSTRACT **Background:** *Recent moves to integrate aspects of population health into medical curricula have created new staff development challenges for many institutions. Small group teaching in population health is a relatively new initiative, often requiring recruitment of additional staff and considerable training. This analysis identifies the tutor characteristics rated most positively by medical students in a small-group course in population health and discusses their implication for staff recruitment and development.* **Method:** *Retrospective evaluation of tutors by students using a self-administered questionnaire. Overall tutor rating was analysed against various tutor characteristics, using univariate logistic regression methods. Optional qualitative comments were summarized by thematic methods and triangulated with findings from the quantitative analysis.*

Results: *Creating a supportive group climate was the tutor attribute most positively evaluated by students (OR=9.62, 95%CI 4.46–20.83). Perceived interest in teaching (OR=8.93, 95%CI 3.83–20.83) and the ability to give useful feedback (OR=8.40, 95%CI 4.07–17.54) were also highly rated by students as valuable qualities in their tutors. Qualitative analysis highlighted the importance of informed comment, good knowledge and expert input from tutors.*

Conclusion: *Whilst a degree of content expertise in population health was desirable in a tutor, its value was secondary to good facilitation skills and an enthusiasm for teaching when student evaluation was considered. Faculties implementing small-group methods of teaching population health should consider facilitation skills and interest in teaching as priorities when recruiting and training staff. As is the case for self-directed student-led learning in basic and clinical sciences, these appear to be more influential than content expertise, from the students' perspective.*

KEYWORDS *Public Health, staff development, problem-based learning.*

Author for correspondence: Lyndal Trevena, MBBS(Hons) MPhilPH, 37A Booth Street, Balmain, NSW 2041, Australia. Tel: +61 2 9818 1400. Fax: +61 2 9818 1343.

E-mail: lyndalt@health.usyd.edu.au

Introduction

Over the past decade, a number of governments have held reviews exploring how medical schools might produce graduates who are best-equipped to meet the current and future healthcare needs of their general populations (American Association of Colleges, 1984; Committee of Inquiry into Medical Education and the Medical Workforce, 1988; General Medical Council, 2002). Many of these reports contain recommendations that medical curricula should integrate population health with clinical learning (Ko Ko, 1994). Such a change aims to ensure that medical graduates have a greater understanding of the context within which they practice, and that they also have the ability to incorporate preventive medicine and health promotion into their clinical practice. (Zimmerman *et al.* 1997).

In parallel with this change, a number of medical schools have adopted small group, self-directed models of learning that are more consistent with the principles of adult education (Bligh, 1995; Farrow, 1995). Didactic lecture formats have been replaced by student-led learning with faculty facilitators. Educational opinion has been divided at times between those who believe that facilitators of tutorials should be content experts (Davis *et al.* 1992; Schmidt *et al.* 1993; Hay and Katsikitis, 2001), whilst others maintain that this would mitigate the potential benefits of collaborative group learning (Barrows, 1985; Silver & Wilkerson, 1991).

This shift toward self-directed learning has, at times, left faculty members uncertain about what characteristics exemplify an effective tutor (Kamien, 1993), while those charged with the responsibility of staff development have been unsure about how best to train and support their tutors.

Whilst the role of the 'expert' tutor in clinical and pre-clinical problem-based sessions has been discussed extensively in the literature (Eagle *et al.* 1992; Schmidt, 1994) it is unclear whether these principles translate to population health-specific learning within a small group context. Like their pre-clinical and clinical colleagues, population health educators have been concerned about non-experts facilitating in their content area. However, with clear directives to increase the population health focus in medical education it is important that aspects of effective tutor-facilitation in this specific area be critically examined and documented.

This study looks at what constituted the profile of an effective tutor in population health-specific sessions within the third year of The University of Sydney Medical Program. It provides insight for population health educators about how to engage medical students in learning about the context within which they practice clinical medicine.

Method

Context of Study

In 1997 The University of Sydney changed from a 6-year undergraduate degree program to a 4-year graduate-entry problem-based learning (PBL) curriculum. Built within this program lies a population–health (Community and Doctor) theme comprising approximately one-eighth of the total curriculum time. This theme is integrated with the Basic and Clinical Sciences Theme (50%), the Patient and Doctor Theme (25%) and the Personal and Professional Development Theme (12.5%). All themes run across the entire four-year program but their delivery changes from pre-clinical to clinical years. During the two initial pre-clinical years, the Community and Doctor theme is learnt via integrated PBL material and large group subject-specific plenary sessions.

In 1999 and 2000, the third year of the population health (Community and Doctor theme) curriculum was implemented as a student-led small group course, undertaken by students during acute medical and surgical attachments at five tertiary teaching hospitals. These detailed population–health specific sessions explored topics that encompassed aspects of health promotion, health service administration and the health of specific sub-population groups. Faculty facilitators for these sessions were either population health practitioners or practising medical clinicians with an interest in population health. Each tutor stayed with a group for up to fourteen of the 2-hour fortnightly sessions across the year, and had between eight and twelve students in their group. Some population health physicians within the faculty felt that clinicians were not ‘qualified’ to move into this role, whilst other population health specialists feared that their non-clinical background would be a handicap in this highly integrated learning environment. The background of the tutor (clinical or non-clinical) was therefore included in the study to see what role, if any, it played in student-rated tutor effectiveness.

Subjects

At the conclusion of the fourteen-session population–health-specific course, in the third year of the course, students were invited to complete a written questionnaire evaluating aspects of their tutor and their effect on learning. These were completed anonymously and voluntarily by students with 80 out of a possible 130 students (62%) completing the forms as requested. At any one time in the third-year course approximately 20% of the students are seconded to rural postings and this accounted for a substantial number of non-responders. Nineteen tutors were evaluated, ten (53%) being non-clinical public health professionals (only half of whom had medical backgrounds), and nine (47%) were primarily practising clinicians with an interest in public health.

Instrument

The questionnaire items (see Table 1) were similar to those used for tutor evaluation within the PBL sessions of the pre-clinical years, and were based on a set of standard items used across several Australian medical schools. There were also two additional Community and Doctor-specific items. An overall rating for each tutor was scored and those deemed to have rated as 'Excellent' or 'Good' on the 5-point Likert scale were considered for the purpose of analysis to be 'Effective Tutors'. Using logistic regression methods with the SAS system for Windows 6.1, the questionnaire item variables, along with the tutors' sex and whether they were a practicing clinician, were tested for association with tutor effectiveness. Due to a high degree of colinearity between several of the survey variables, univariate analysis was adopted.

In addition to responding to the items listed in Table 1 using the Likert scale, students were invited to comment on what their tutor did well and what their tutor could improve. These comments were coded and grouped according to their theme and a tally made of the number of comments made for each theme category. This provided an additional qualitative profile of the relative importance of the various skills and characteristics that were considered to promote effective learning in population health for medical students.

Results

The regression analysis (Table 1) indicates that the factors most likely to be associated with a high tutor rating were facilitation skills, interest in teaching

Table 1. Univariate analysis of factors associated with being a good or excellent tutor ($n=80/130$)

Characteristic	Odds Ratio (OR)	95%CI
• Created a supportive group climate	9.62*	4.46 – 20.83
• Is interested in teaching	8.93*	3.83 – 20.83
• Gives useful feedback	8.40*	4.07 – 17.54
• Helped me to include Community and Doctor concepts in my thinking	8.13*	3.86 – 17.24
• Helped us to identify appropriate learning resources for independent study	6.71*	3.23 – 13.89
• Did not dominate group discussion	5.75*	2.95 – 11.11
• Appeared to be familiar with the module plan and materials	4.61*	2.39 – 8.85
• Models a population perspective of health care	3.77*	2.16 – 6.62
• Is punctual	3.61*	1.79 – 7.63
• Is a practising clinician	1.25	0.53 – 2.91

*Significant at $p < 0.001$.

and the ability to support self-directed learning in students. It did not appear to be significant whether tutors were medically qualified practising clinicians or non-clinical population health workers.

Responses from the open-ended questions confirmed that ‘an interest in teaching’ and ‘good facilitation skills’ were considered to be important characteristics of an effective tutor. However, it is worth noting that students indicated that they also highly valued some content expertise and input within the tutorial sessions (Table 2).

Discussion

Whilst it must be admitted that student feedback may only give part of the overall profile of an effective tutor, many would argue that it does have some validity as an indicator (McLeod *et al.* 1993; Dolmans *et al.* 1994). It offers a useful measure of satisfaction with the tutor-component of the learning process and highlights aspects of a positive learning environment that should be documented. It could be argued that a more useful outcome measure would be the relationship between tutor rating and student examination performance. However, since participation was anonymous and voluntary, it was not possible to correlate student responses with assessment outcomes in this study.

Table 2. Comments from 80 students on what tutors did well or could improve

Comment type	Number of students
Keen, enthusiastic, Interested	20
Informed comment, good knowledge, expert input	18
Didn't dominate group discussion	8
Stimulated good discussion	7
Gave good feedback	6
Approachable, contactable	6
Kept the discussion on track, covered the material	6
Created a supportive group environment	6
Assisted with finding good resources	6
Was familiar with the material	5
Helpful, encouraging	5
Flexible, relaxed	4
Gave examples from clinical practice	2
Had a good sense of humour	2
Had a sense of responsibility/commitment to the group	2
Encouraged broader thinking	1
Was punctual	1

The characteristics of a good tutor-facilitator

Some of the characteristics most strongly associated with effective tutoring in the population health course were those generically found in a good facilitator. Both parts of the questionnaire indicated that it was important for facilitators not to dominate group discussion, to redirect the discussion to the topic at hand when necessary, and to stimulate good discussion by asking questions of the group appropriately. It was particularly important that students enjoyed a supportive group climate with flexibility and freedom to discuss a range of issues. These skills have been consistently advocated in general articles about PBL tutor roles, but have not been previously documented as the most important element of an effective population-health-specific small group learning environment. This study therefore confirms the importance of facilitation skills in recruiting and training population health tutors for small group courses.

The role of content expertise in facilitating student learning in population health

It was also evident from this evaluation that professional background and current work environment were not relevant to tutor effectiveness scores. Students highly valued some population health expertise, whether it was clinically or non-clinically-based. They appreciated tutors who were able to give informed comment, add some content to the discussion without dominating the group, and assist students in finding learning resources as required.

Despite having baseline skills in the principles of population health, the tutors in this course were not 'experts' in all the topics covered. Given the broad range of issues addressed this would be impossible for most tutors. However, course material, references and tutor guides were provided across the topics and students appreciated familiarity on the part of the tutor with this material. This material also allowed tutors to give useful feedback to students leading the sessions in each topic, a characteristic highly rated by the students involved.

The findings for this population health-specific context are consistent with those in the PBL literature (Schmidt, 1994; Hay & Katsikitis, 2001) which contends that expert tutors are particularly useful for students when prior knowledge, learning resources and session structure are incomplete. Resources for population health learning may need to be identified and accessed outside peer-reviewed publications, for example as government reports or websites, and students valued their tutor's guidance in locating such information.

Commitment to teaching in population health

It was also evident from this study that enthusiasm for teaching in population health is an extremely powerful motivator for student learning. Students valued tutors who were keen, interested and enthusiastic about what they were

learning. Effective tutors were more likely to make themselves available for students to contact and approach for assistance or clarification. They recognized this sense of commitment to their learning and were assisted in adopting a population health perspective to their thinking.

Conclusion

Given new demands on medical schools to include population health learning within self-directed curricula, this study provides new information about students' perceptions of tutor effectiveness in a population-health specific self-directed course. It confirms earlier findings in the non-population health PBL literature and demonstrates that the pivotal role of facilitation does translate to population-health-specific learning environments. This analysis showed that the 'best' tutors had good facilitation skills, particularly in creating a supportive group learning environment. They also exhibited a commitment and enthusiasm for teaching, most commonly demonstrated by being available to assist students with finding resources, clarifying issues and providing good quality feedback. Finally, it was important that these tutors had some baseline population health expertise, although, as in the PBL literature, this appeared to be secondary to the facilitation skills and enthusiasm for teaching. The complexity of many population health concepts may augment the need for expertise where course content resources are not able to provide self-directed students with adequate information for meeting their educational aims. With many faculties and schools of population health moving toward small group learning for medical students, recruitment and training of population health tutors should take into account the importance of facilitation skills for effective learning environments. Evidence for the value of this has existed in clinical problem-based learning but this analysis confirms that the same principles apply to small group population health-specific learning for medical students. Further research is also needed to determine whether population health learning that is integrated within clinical learning contexts is influenced by tutor expertise.

Acknowledgements

The tutors and students of the University of Sydney Medical Program for their support and participation in this evaluation.

References

- ASSOCIATION OF AMERICAN COLLEGES. (1984). Physicians for the twenty-first century: report of the panel on the general professional education of the physician and college preparation for medicine. Washington, DC, 1984.
- BARROWS, H. (1985). *How to design a problem-based curriculum for the pre-clinical years*. New York: Springer Publishing.
- BLIGH, J. (1995). Problem based, small group learning. *British Medical Journal*, 311, 342–343.
- COMMITTEE OF INQUIRY INTO MEDICAL EDUCATION AND THE MEDICAL WORK-FORCE. (1988). Australian medical education and workforce into the 21st century. Australian Government Publishing Service. Canberra.
- DAVIS, W., NAIRN, R., PAINE, M., ANDERSON, R. & OH, M. (1992). Effects of Expert and Non-expert Facilitators on the Small-group Process and on Student Performance. *Academic Medicine*, 67, 470–474.
- DOLMANS, D.H., WOLFHAGEN, I.H., SCHMIDT, H.G. & VAN DER VLEUTEN, C.P. (1994). A rating scale for tutor evaluation in a problem-based curriculum: validity and reliability. *Medical Education*, 28(6), 550–558.
- EAGLE, C., HARASYM, P. & MANDIN, H. (1992). Effects of Tutors with Case Expertise on Problem-based Learning Issues. *Academic Medicine*, 67, 465–469.
- FARROW, R. (1995). Problem based learning at medical school: Some people think it's thrilling. *British Medical Journal*, 311, 1642–1643.
- GENERAL MEDICAL COUNCIL. (2002). Tomorrow's doctors: recommendations on undergraduate medical education. London. http://www.gmc-uk.org/med_ed/.
- HAY, P. & KATSIKITIS, M. (2001). The 'expert' in problem-based and case-based learning: necessary or not? *Medical Education*, 35, 22–26.
- KAMIEN, M. (1993). The reform of medical education. *Medical Journal of Australia*, 158, 226–227.
- KO KO, U. (1994). Education for medical practice of tomorrow. *Medical Education*, 28, 481–482.
- MCLEOD, P.J., JAMES, C.A. & ABRAHAMOWICZ, M. (1993). Clinical tutor evaluation: a 5-year study by students on an in-patient service and residents in ambulatory care clinic. *Medical Education*, 27(1), 48–54.
- SCHMIDT, H. (1994). Resolving Inconsistencies in Tutor Expertise Research: Does Lack of Structure Cause Students to Seek Tutor Guidance. *Academic Medicine*, 69, 656–662.
- SCHMIDT, H., VAN DER AREND, A., MOUST, J., KOKX, I. & BOON, L. (1993). Influence of Tutors' Subject-matter Expertise on Student Effort and Achievement in Problem-based Learning. *Academic Medicine*, 68, 784–791.
- SILVER, M. & WILKERSON, L. (1991). Effects of Tutors with Subject Expertise on the Problem-based Tutorial Process. *Academic Medicine*, 66, 298–300.
- ZIMMERMAN, R., BARKER, W., STRIKAS, R., ER, A., MIECZKOWSKI, T., JANOSKY, J. & KANTER, S. (1997). Developing Curricula to Promote Preventive Medicine Skills: The Teaching Immunization for Medical Education (TIME) Project. *JAMA*, 278, 705–711.