

Teaching professionalism in the early years of a medical curriculum: a qualitative study

JOHN GOLDIE, AL DOWIE, PHIL COTTON & JILLIAN MORRISON

CONTEXT Despite the growing literature on professionalism in undergraduate medical curricula, few studies have examined its delivery.

OBJECTIVES This study investigated tutors' and students' perspectives of the delivery of professionalism in the early years of Glasgow's learner-centred, problem-based learning (PBL), integrated medical curriculum.

METHODS A qualitative approach was adopted involving semistructured interviews, on a 1 in 6 sample of tutors involved in teaching in the early curricular years, and 3 student focus groups. The findings were subjected to between-method triangulation.

RESULTS Involvement in teaching raised students' and tutors' awareness of their professionalism. Learning activities promoting critical reflection were most effective. The integration of professionalism across the domains of Vocational Studies (VS) was important for learning; however, it was not well integrated with the PBL core. Integration was promoted by having the same tutor present throughout all VS sessions. Early patient contact experiences were found to be particularly important. The hidden curriculum provided both opportunities for, and threats to, learning. The small-group format provided a suitable environment for the examination of pre-existing perspectives. The portfolio was an effective learning tool, although its assessment should be formalised.

Section of General Practice and Primary Care, University of Glasgow, Glasgow, UK

Correspondence: John Goldie MB ChB, MMed, MD, FRCGP, DRCOG, Dip MedEd, ILTM, Senior Clinical Tutor, Section of General Practice and Primary Care, Division of Community-based Sciences, University of Glasgow, 1 Horselethill Road, Glasgow G12 9LX, UK.
Tel: 00 44 141 330 8330; Fax: 00 44 141 330 8332;
E-mail: johngoldie@fsmail.net

CONCLUSIONS Reflection is integral to professional development. Early clinical contact is an important part of the process of socialisation, as it allows students to enter the community of practice that is the medical profession. Role models can contribute powerfully to students' learning and identity formation. As students move towards fuller participation, the clinical milieu should be controlled to maximise the influence of role models, and opportunities for guided reflection should be sustained.

KEYWORDS humans; *education, medical, undergraduate; *professional practice; *attitude of health personnel; curriculum; teaching; Scotland; problem-based learning.

Medical Education 2007; **41**: 610–617
doi:10.1111/j.1365-2923.2007.02772.x

INTRODUCTION

The issue of medical professionalism has recently attained a high profile, both nationally and internationally.^{1–4} The UK General Medical Council (GMC) has responded with *Good Medical Practice*,⁵ the proposed introduction of revalidation for all practising doctors and the recommendation that professionalism be included as a curricular theme in undergraduate medical education.⁶

Glasgow University introduced a professionalism theme as part of its Vocational Studies (VS) course in October 2003. Vocational Studies runs throughout the first 3 years of the 5-year undergraduate medical curriculum and is designed to facilitate the development of the professionally responsible attitudes and skills required by students for clinical practice.⁷ Professionalism is integrated with the other domains of VS and with the problem-based learning (PBL)

Overview

What is already known on this subject

Few studies have evaluated the delivery of professionalism teaching in undergraduate medical curricula.

What this study adds

Critical reflection is integral to professional development. Early clinical contact is an important part of the process of socialisation. As students move towards fuller participation, the clinical milieu should be controlled to maximise the influence of role models, and opportunities for guided reflection should be sustained.

Suggestions for further research

Future research might include studies to establish if these findings are replicated in other medical schools, and investigation into the effects of controlling the clinical milieu.

core (http://www.gla.ac.uk/departments/general-practice/routemaps_home.htm). The predominant method of teaching in both VS and PBL is small-group teaching with groups of 8 students. Seven teaching sessions, 4 in Year 1 and 3 in Year 2 (details available from the authors), provide a framework for learning. The aims of this teaching are shown in Fig. 1. A major component of students' learning is the production of professional and personal development (PPD) portfolios in Years 1 and 2, the individual components of which are shown in Fig. 2. The portfolios are summatively assessed by VS tutors. If a student fails to complete his or her portfolio, this is entered into his or her academic record.

Although there is a growing literature on how professionalism should be incorporated into undergraduate medical curricula,^{1-4,8-18} few studies have evaluated its delivery.

This study aimed to investigate tutors' and students' perspectives of the delivery of professionalism in the early years of Glasgow's medical curriculum. It also aimed to examine the impact of the 'hidden

By the end of Years 1 and 2, students should have some appreciation of:

- 1 the value of reflection in practice and of being self-aware
- 2 the importance of managing their own learning and what factors drive their learning
- 3 the importance of self-care and strategies to deal with the demands of busy professional life
- 4 the value of developing long- and short-term career aspirations
- 5 their ability to recognise key personal motivating factors
- 6 how they demonstrate dedication and commitment through adherence to codes of conduct

Figure 1 Aims of professionalism teaching

- 1 Tutor assessment
- 2 Thought provoking event (TPE)
- 3 TPE: ethical case study
- 4 Video diary and written log of all simulated patient consultations
- 5 Reflection on coursework
- 6 Reflection on small-group work
- 7 Contact with Advisor of Studies
- 8 CV production (additional component in Year 2)
- 9 Clinical case summaries (additional component in Year 2)

Figure 2 Portfolio contents

curriculum', or what students learn through the experience of attending medical school that is not necessarily part of the stated educational aims.¹⁹

The team involved in the study included the head of the undergraduate medical school (JM) and the VS course co-ordinator and author of the PPD course materials (PC), both of whom were concerned with the successful introduction of the theme. The team also included a curriculum evaluator and VS tutor (JG), who viewed his role primarily as course evaluator, and an experienced ethnographer whose role in the medical education unit was independent of the VS course (AD).

METHODS

A qualitative approach was adopted. Semi-structured, 1-to-1 interviews, following the agenda outlined in Fig. 3, were conducted over the 2005 summer recess

- 1 Students' and tutors' understanding of the term 'professionalism' and the effect of its introduction on their thinking on the issue
- 2 The relevance and appropriateness of learning methods used
- 3 How well the professionalism theme was integrated
- 4 The relevance and appropriateness of the assessment of portfolios
- 5 How the theme should develop in later curricular years
- 6 The impact of the hidden curriculum

Figure 3 Areas covered in interviews and focus groups

by the same interviewer (AD) on a 1 in 6 stratified sample of the 60 tutors, most of whom were general practitioners (GPs), involved in Years 1 and 2 of the VS course. The sample ($n = 10$) was stratified by curriculum year involvement, gender and whether the tutors worked in a hospital or community setting. The interviews were audiotaped and the interviewer reviewed his field notes following each interview to help establish if data saturation had been reached. The interviews were transcribed and content analysis was performed independently by the interviewer and 1 of the other researchers (JG). The data were initially coded and their frequency of occurrence counted. Categories were identified and themes emerged. Areas of divergence as well as consensus among interviewees were also considered as the data were further interpreted. The findings were reviewed by the other 2 investigators (PC, JM) and agreement reached on the interpretation of the data and its 'thick description'.²⁰

It was initially planned to run 3 focus groups involving a 5% sample of students ($n = 24$) from Years 1 and 2. However, the low level of response among the target sample resulted in the groups being augmented with a convenience sample of students. A standardised interview format was used following the agenda outlined in Fig. 3. The groups were run on separate occasions, allowing the number of groups to be increased if data saturation was considered not to have occurred. Sessions were audiotaped and transcribed. The field notes, taken during each focus group, were reviewed after each group and the researchers were satisfied that the third group generated no new information, suggesting data saturation had been achieved. The findings were analysed by 1 of the researchers (JG) using a grid analysis after Knodel.²¹ The responses were then coded and a group-to-group validation applied.²² The analysis of the data was independently crosschecked by 1 of the other researchers (PC). The findings were

- Nature of professionalism
- Impact of teaching
- Effective learning methods
 - Small-group teaching
 - Curriculum integration
 - Portfolio
- Influence of the hidden curriculum
- Development of the professionalism theme in the later years of the curriculum

Figure 4 Overview of themes identified from tutor interviews and student focus groups

reviewed by the other 2 investigators (AD, JM) and agreement reached on the interpretation of the data.

The data obtained from the interviews and focus groups were then subjected to between-method triangulation, which was also used as a check on validity.

RESULTS

The key themes emerging from the data are shown in Fig. 4.

The nature of professionalism

Professionalism was considered to relate to medical professionals' behaviour and appearance. A list of attributes identified as desirable in a medical professional is available from the authors.

Impact of teaching

The formal presence of professionalism in the curriculum made learning explicit and ensured it was no longer left to occur through a process of osmosis, which had been the experience of many tutors:

'I think talking about these themes prepares doctors who are better in terms of talking about their personal development compared to [how] we were. We didn't have an idea of what it was going to be like being a doctor.' (Tutor E)

Teaching was found to raise students' awareness of the issue and tutors' awareness of their own professionalism.

Effective learning methods

Learning activities that promoted critical reflection were found to be the most effective.

Small-group teaching

Small-group teaching in the early years of the curriculum was considered important to students' development. Students valued the continuity in VS of being in the same group, with the same tutor, throughout the year as it promoted a safe environment which encouraged discussion, the airing of different perspectives and critical reflection. Tutors considered the management of the group process to be among their most important tasks.

The course materials relating to professionalism sessions received a mixed reception from tutors and students. Although session objectives provided direction, the content was not always considered to be relevant. Students, however, found the notes useful for revision. Students' experiences provided material for reflection during these sessions, contextualised learning and brought sessions alive. Tutors sharing their experiences as both students and practising clinicians had similar effects. Media articles were used to prompt discussion and contextualise learning. The GMC's *Duties of a Doctor*²³ was found to be a useful learning resource. Tutors also promoted students' awareness of professionalism by encouraging critical reflection on everyday activities, such as attendance at teaching sessions, time-keeping and students' appearance during patient contact.

Curriculum integration

Teaching in other VS domains was considered integral to learning professionalism. Central to the effectiveness of integration during VS was having the same tutor lead the sessions throughout the year.

The provision of patient contact in the early years of the curriculum, in both the clinical and community settings, was felt to be particularly important. These activities motivated students, provided experiences on which to reflect and promoted integration of learning:

'When we were practising our communication skills [interviewing patients and simulated patients] you could consider confidentiality... It's good to mix because you're obviously being able to handle 2 things at once and putting them together... so you're seeing the bigger picture rather than just learning 1 thing then another separate thing.'
(Student B, focus group C)

A key element in the reflective process was debriefing by tutors, during which a climate of constructive

criticism of colleagues was fostered. This helped counteract the effects of negative experiences:

'My students reflected on being on the wards and being told to examine the ankles of a patient who was fast asleep. They learned from that. I asked them what concept [the doctor] was not showing, in terms of ethical principles, and they picked up on respect for autonomy and I was pleased they had picked it up and that they were shocked by what had happened because it was not acceptable.'
(Tutor I)

The other domains where tutors were particularly able to raise students' awareness and encourage reflection on issues of professionalism were ethics and communication skills. Other VS activities that involved reflecting on patient contact, such as the life history, community diagnosis and family projects, also promoted learning.

Tutors and students felt professionalism was not well integrated with PBL. Some students, on identifying professionalism issues in PBL scenarios, considered they should be left until VS sessions, which were viewed as being the most appropriate place to tackle such issues:

'PBL and VS are very separate things. You do get the odd question in PBL that people will say, "Should we [identify 1 of our learning objectives] about the ethical side of things?" and people are like, "Oh no, we don't want to do that." People see it as a waste of time. People see VS as the time to talk about things that just get left in PBL for the most part... So I don't think these 2 parts of the course integrate particularly well.'
(Student A, focus group C)

Tutors felt that students valued PBL more highly than VS. One of the factors identified was students' examination orientation:

'They're always asking me what they need to know... They tend to think about what they need to know to pass their exams, not what do I need to know to be a doctor.'
(Tutor G)

Portfolio and its assessment

Both students and tutors viewed the portfolio as both a learning tool and a method of assessment, although the students often didn't appreciate its importance as a learning tool until its completion.

The portfolio was considered to be a useful learning tool as it promoted reflection. The Thought-provoking Event, Ethical Case Study, Case Summaries and CV Production elements were considered to be its most effective components. There was, however, ambivalence among students about the formal structure of the Ethical Case Study and students who had entered medical school straight from school felt disadvantaged compared with graduate students when compiling their CVs. Tutors noted that many students left the production of the portfolio until the last minute. Some tutors encouraged students to complete the portfolio throughout the year and helped raise awareness of opportunities for reflection. Tutors also helped students appreciate the relevance of their portfolios to their future careers by linking it to the proposed revalidation process for practising doctors.

The portfolio assessment process was viewed as being ineffective. Tutors felt under-resourced in terms of time available for feedback and would have liked to provide 1-to-1 feedback. Tutors felt students did not value the portfolios as highly as coursework that contributed to their final examination marks. Tutors and students felt the portfolios should be formally assessed using criterion referencing and focusing on process rather than outcome.

The influence of the hidden curriculum

Tutors recognised the presence of the hidden curriculum by reflecting on their own experiences as students. Sharing their reflections with students helped raise students' awareness of its effects and provided reassurance to them. The influence of role models, both positive and negative, was consistently mentioned as a major component of the hidden curriculum:

'In 1 of my hospital sessions I went to an intensive care unit and the consultant who was taking us round was asking us to perform examinations on unconscious patients and obviously that's not very professional and a lot of people were very uncomfortable with that. We told our tutor and I think she e-mailed in... so obviously that was getting dealt with. I think it's not a very good example to be setting, so I think in that respect it was definitely a case of being shown how not to do things. It's still a learning process I guess.' (Student C, focus group C)

Positive role models were inspiring for students and were able to counteract the effects of negative role

models. Vocational Studies tutors were considered to be examples of positive role models:

'I think I've learned a lot from our VS tutors because you see them in clinical [practice]... you see how they interact with patients, you see, even when they are teaching you things, you can see part of their personalities.' (Student C, focus group B)

However, tutors considered that some PBL facilitators valued scientific knowledge above professionalism issues when they arose in scenarios. Some Year 2 VS tutors, from their responses, appeared to value clinical skills over professionalism teaching. There was evidence of the transmission of these attitudes to students:

'In PBL a lot of it is focused on the science of the problems, but invariably because of the hierarchy of the systems there are going to be social dimensions and I hear from students and other tutors comments, disparaging comments about the non-scientific dimensions of a problem.' (Tutor H)

There was also evidence of negative attitudes towards the portfolio transmitted by students who were further on in the curriculum.

Development of the theme in the later years of the curriculum

There was consensus on the necessity for students to continue to critically reflect on their professionalism during their increasing clinical exposure. Students envisaged applying what they learned in the early years of VS:

'[Professionalism] should be more clinically orientated... [for example,] if a person has to have an operation and there are positive aspects and negative aspects on both sides, how to weigh that up and how you might come to a decision... something more to do with clinical practice.' (Student D, focus group B)

The provision of feedback from clinical teachers was seen to be important for this process. Tutors felt it was important that students should continue to be offered the opportunity to reflect, which would require protected curriculum time, and that the links with revalidation should continue to be emphasised. Both tutors and students believed sustained exposure to positive role modelling to be important to students' continuing development:

Table 1. Assessment methods suggested by tutors

Portfolio assessment
Tutor/teacher assessment
Peer assessment
Patient assessment
Simulated patient assessment
Assessment of timekeeping
Coursework assessment
CV
Personal learning plans

'I think I learn most about professionalism by watching my tutors... whether [it is] good or bad. I think the important thing is that you reflect upon the part you recognise.' (Student D, focus group C)

Although the tutors agreed that it was important to formatively assess professionalism, they had mixed opinions on whether students could be summatively assessed. Most tutors felt a single assessment method would be inadequate and that a range of different methods should be used (Table 1). Students similarly felt that a single method would be inadequate, although they were less specific about which methods should be used.

DISCUSSION

The study was limited by the funding available and the politics surrounding the introduction of the portfolio, which prevented evaluation at the higher levels of Kilpatrick's model.²⁴ The student focus group composition was not as planned. However, despite the non-random nature of the groups, they were sufficiently representative in terms of gender, age and possession of a previous degree (Table 2).

Despite these limitations, the aim of determining tutors' and students' perceptions about the delivery of professionalism in the early years of a learner-centred, PBL, integrated medical curriculum was achieved. Evidence was also obtained that the hidden curriculum impacts on students' learning.

Table 2. Composition of student focus groups

	Average for study participants	Average for Years 1 and 2
Age (years)	19.7	19.8
Male : female ratio (%)	61 : 39	63 : 37
Previous degree (%)	11	14

The curriculum design is based on the principles of adult learning and is consistent with the recommendations of Maudsley and Strivens²⁵ and Eraut²⁶ on the acquisition of professional knowledge. The early years of the curriculum provide students with experiences that mimic their future roles, opportunities for reflection, and rehearsal of the skills involved in managing these experiences. It also encourages them to take responsibility for the outcomes of both their experiences and their learning. The potential theory-practice gap¹⁵ is minimised by the approaches taken in PBL and VS, which promote the acquisition of not only propositional knowledge, but also the procedural knowledge required for professional development. The small-group format provides a safe environment in which students can air, and be challenged on, their pre-existing perspectives and assumptions. This helps bring unsystematised personal experience under critical control.²⁶

The findings provide further empirical evidence of the importance of early clinical contact.²⁷ Students were motivated by these contacts, which helped contextualise and integrate their learning and promoted their socialisation into the profession of medicine. At this stage, students are entering the periphery of the community of practice that is the medical profession. Legitimate peripheral practice provides role models that serve as the basis and motivation for the learner's activity.²⁸ The students were able to identify positive and negative role models, and their characteristics, and to critically reflect, with the assistance of their tutors, on their influence.

Vocational Studies tutors were important role models for students. One of their roles was to manage the interpersonal dynamics that occurred during the exploration of students' personal attitudes. Although many of the tutors were generalists, their skills and boundaries in dealing with such issues cannot be assumed. The provision of training in awareness of interpersonal dynamics should be an integral and ongoing component of staff development.

Despite the post-positivistic approach to curricular planning, there was evidence that some tutors and PBL facilitators remained philosophically attached to the logico-rational approach, valuing 'scientific' knowledge and the mastery of traditional clinical skills above other types. The transmission of these attitudes, together with the lack of formal assessment of professionalism, in the context of a strong pre-existing examination orientation among students, is detrimental to their development as professionals. Faculty development, preferably using a bottom-up

approach along the lines of that described by Steinert *et al.*,²⁹ is required to tackle this issue and its knock-on effect on curriculum integration.

The suggestions for the development of the theme in the later curricular years recognised students' move towards fuller participation in the community of practice. By participating in the practices of the community, learners develop identity in relation to it. Learning and identity form together and role models can contribute powerfully to both aspects of formation.²⁸ Bandura³⁰ describes learning occurring in a milieu of constant, dynamic, reciprocal interaction among people, their behaviour and the environment. One of his important concepts is that of vicarious learning. Through observations of role models' actions, students learn behaviours and ways of being that look successful to them in the light of their own goals and experience and the rewards present in the environment.³⁰ In the dynamic environment of clinical practice, students will have many opportunities to learn from observing the behaviours of clinical staff. Given the decline in academic medicine against a background of changing working patterns in the National Health Service, controlling this environment will be increasingly challenging.

Professionalism can and must be assessed.^{13,18} This is particularly important in a culture where assessment determines the value placed on curriculum content by students. Tutors' and students' recognised both the difficulties associated with the assessment of professionalism and the move towards programmes of assessment aimed at assessing the higher levels of Miller's competence pyramid.³¹

Reflective practice, which was found to be important in the early curricular years, is integral to professional development at all stages.^{15,16,18} The changing environment of the later years will require students to become more self-sufficient as they will not necessarily have the ongoing presence of a tutor to raise awareness, encourage reflection and help integrate learning. The adoption of Harden's 3-circle model of learning outcomes³² would raise awareness of professionalism among all clinical teachers and encourage the institution of reflective practice that enhances lifelong learning and commitment to professionalism.³³

Implications for the course

The curricular design of the early years provides students with the opportunity to develop the knowledge required for professional practice. The

teaching methods and clinical experiences provided promote reflection, which is integral to professional development. However, negative attitudes and behaviours among teachers and role models can inhibit students' development and should be addressed. As students move towards greater clinical contact, the milieu in which they operate should be controlled to maximise the influence of role models, and opportunities for guided reflection should be sustained. The assessment of professionalism needs to be formalised and a range of instruments used.

Contributors: JG conceived and designed the study, was involved in data collection and analysis and wrote the paper. PC and JM were involved in the conception and design of the study, collection and analysis of data and contributed to the writing of the paper. AD was involved in the design of the study, data collection and analysis and contributed to the writing of the paper.

Acknowledgements: the authors would like to thank Robert Peat, General Manager of the Eastern Glasgow Local Health Care Cooperative, for his support, and Susan Goldie and Chere Beaumont for their assistance with transcriptions.

Funding: this study was funded by a grant from the Eastern Glasgow LHCC.

Conflicts of interest: none.

Ethical approval: this study was approved by the University of Glasgow Faculty of Medicine Ethics Committee. Informed consent was obtained from each participant.

REFERENCES

- 1 Calman K. The profession of medicine. *BMJ* 1994;**309**:1140–3.
- 2 Cruess SR, Cruess RL. Professionalism must be taught. *BMJ* 1997;**315**:1674–7.
- 3 Irvine D. The performance of doctors: the new professionalism. *Lancet* 1999;**353**:1174–7.
- 4 Medical Professionalism Project. Medical Professionalism in the new millennium: a physician's charter. *Lancet* 2002;**359**:520–2.
- 5 General Medical Council. *Good Medical Practice*. London: GMC 2002.
- 6 General Medical Council. *Tomorrow's Doctors: Recommendations on Undergraduate Medical Education*. London: GMC 2003.
- 7 Goldie J, Schwartz L, McConnachie A, Morrison J. The impact of 3 years' ethics teaching, in an integrated medical curriculum, on students' proposed behaviour on meeting ethical dilemmas. *Med Educ* 2002;**36** (5):489–97.
- 8 Swick HM, Szenas P, Danoff D, Whitcomb ME. Teaching professionalism in undergraduate medical education. *JAMA* 1999;**282** (9):830–2.

- 9 Wear D, Castellani B. The development of professionalism: curriculum matters. *Acad Med* 2000;**75**:602–11.
- 10 Ginsburg S, Regehr G, Hatala R, McNaughton N, Frohna A, Hodges B, Lingard L, Stern D. Context, conflict and resolution: a new conceptual framework for evaluating professionalism. *Acad Med* 2000;**75** (Suppl 10):6–11.
- 11 Lazarus CJ, Chauvin SW, Rodenhauer P, Whitlock R. The programme for professional values and ethics in medical education. *Teach Learn Med* 2000;**12** (4):208–11.
- 12 Stevenson A, Higgs R, Sugarman J. Teaching professional development in medical schools. *Lancet* 2001;**357**:867–70.
- 13 Arnold L. Assessing professional behaviour: yesterday, today and tomorrow. *Acad Med* 2002;**77** (6):502–15.
- 14 Howe A. Professional development in undergraduate medical curricula: the key to the door of a new culture? *Med Educ* 2002;**36**:353–9.
- 15 Kenny NP, Mann KV, MacLeod H. Role modelling in physicians' professional formation: reconsidering an essential but untapped educational strategy. *Acad Med* 2003;**78**:1203–10.
- 16 Gordon J. Fostering student's personal and professional development in medicine: a new framework for PPD. *Med Educ* 2003;**37**:341–9.
- 17 Hilton SR, Slotnik HB. Proto-professionalism: how professionalisation occurs across the continuum of medical education. *Med Educ* 2005;**39**:58–66.
- 18 Veloski JJ, Fields SK, Boex JR, Blank LL. Measuring professionalism: a review of studies with instruments reported in the literature between 1982 and 2002. *Acad Med* 2005;**80**:366–70.
- 19 Snyder BR. *The Hidden Curriculum*. New York: Knopf 1971.
- 20 Geertz C. Thick description: toward an interpretive theory of culture. In: Geertz C, ed. *The Interpretation of Culture*. New York: Basic Books 1973.
- 21 Knodel J. The design and analysis of focus group studies: a practical approach. In: Morgan DL, ed. *Successful Focus Groups: Advancing the State of the Art*. Newbury Park, CA: Sage 1993;35–50.
- 22 Morgan DL. *Focus Groups as Qualitative Research*, 2nd edn. Newbury Park, CA: Sage 1997.
- 23 General Medical Council. *Duties of a Doctor*. London: GMC 2001.
- 24 Kilpatrick D. *Evaluating Training Programs*. American Society for Training and Development 1975.
- 25 Maudsley G, Strivens J. Promoting professional knowledge, experiential learning and critical thinking for medical students. *Med Educ* 2000;**34**:535–44.
- 26 Eraut M. *Developing Professional Knowledge and Competence*. London: Falmer Press 1994.
- 27 Dornan T, Littlewood S, Margolis SA, Scherpbier A, Spencer J, Ypinazar V. How can experience in clinical and community settings contribute to early medical education? A BEME systematic review. *Med Teacher* 2006;**1**:3–18.
- 28 Wenger E. *Communities of Practice: Learning Meaning and Identity*. Cambridge: Cambridge University Press 1998.
- 29 Steinert Y, Cruess S, Cruess R, Snell L. Faculty development for teaching and evaluating professionalism: from programme design to curriculum change. *Med Educ* 2005;**39**:127–36.
- 30 Bandura A. *Social Foundations of Thought and Action: a Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice Hall 1986.
- 31 Shumway JM, Harden RM. AMEE Education Guide 25. The assessment of learning outcomes for the competent and reflective physician. *Med Teacher* 2003;**25** (6):569–84.
- 32 Harden RM, Crosby JR, Davis MH, Friedman M. From competency to meta-competency: a model for the specification of learning outcomes. *Med Teacher* 1999;**21** (6):546–52.
- 33 Frankford DM. Institutions of reflective practice. *J Health Policy Politics Law* 1997;**22**:1295–308.

Received 19 May 2006; editorial comments to authors 17 November 2006; accepted for publication 19 January 2007