Debate

An innovative approach to developing the reflective skills of medical students

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Abstract

Background: Development of the reflective skills of medical students is an acknowledged objective of medical education.

Description: Description of an educational exercise which uses an email-based process for developing the reflective skills of undergraduate medical students. Student quotations illustrate learning outcomes qualitatively.

Discussion: The process described is immediate, direct, linked to learning objectives, enables rapid responses to be given to the students individually, and is followed by group sharing of learning. It provides a rigorous and robust feedback loop for students. It is relatively economic for teachers and incidentally benefits curriculum design and evolution. The approach supports development of a reflective approach to learning.

Background

A broad aim of medical education is to develop autonomous professionals capable of self-monitoring their work in order to facilitate continuing professional development. To be effective, continuing professional development requires the exercise of several reflective and analytic skills. First, effective reflection on experience enhances the possibility that the professional will identify gaps in their knowledge or skills, or more subtly, identify attitudes prejudices or beliefs, which would benefit from further exploration. It requires a willingness to consider the possibility that events with an undesired outcome might have gone better had the professional either behaved differently or been able to invite the other party to engage differently with them. Second, it requires that they are willing and able to make a coherent plan to address any problems, whether remedially or developmentally. Third, having implemented such a plan, it requires that they identify what they have learned, and how that has better prepared them for the task in hand. Fourth, it requires that they periodically review and update their plan, and continue to learn from everyday experiences. This whole process requires skills of recording, analysis, reflection, synthesis, planning and implementation.

In this paper, we describe an approach evolved over the past 12 years to aid the development of these skills in preclinical students. It forms one strand in a third year undergraduate course with a focus on integrating knowledge, attitudes, emotions and behaviour for the development of an integrated ethical professional identity [1–4]. One explicit aim of the course is to facilitate the development of self-knowledge and empathy and the application of this learning professionally. As part of the course, students at-

tend 16 full or half day workshops with a range of content themes. The workshops are experiential [5]. The basic experiential method invites students to engage in an experience, to create some learning from it, and then through a process of structured reflection to identify what it is that each has learned and to apply this new knowledge thereby expanding the repertoire of possible solutions. This method is designed to aid the review and exploration of attitudes and assumptions, discovery of differences, and consideration of the implications of personal attitudes and emotions for professional behaviour and communication. To facilitate this process, a workshop climate characterised by flexibility, empathy, equality, tentativeness and openness is created, in which students can be non-defensive and highly participatory [6]. This space to experiment encourages learning from mistakes or from challenging, uncomfortable or upsetting emotional experiences. By group-based discussion this learning is shared and all benefit [7]. An essential step, which should not be overlooked, is to record the learning and in the process to reflect further on it [8]. It is the handling of the written evaluations by students of their learning from these workshops that forms the basis of the process described in this paper.

Schon [9] has described two different types of reflection. 'Reflection *in* action' involves the development of a capacity to self-monitor *during* an exchange and change tack effectively. The workshop experiences themselves build such a capacity for 'reflection in action'. 'Reflection *on* action' is the capacity to review an interaction after it is complete, and take lessons for future practice, which is the concern of this paper.

Description
All students are allocated an email address, and computer access. Prior to each workshop, the aims and learning objectives are emailed to each student. Within 3 days of each workshop, each student emails to the facilitators an evaluation of up to 750 words, linked to the stated learning objectives of the day, and indicates whether they think and feel that they have met them. In their evaluations, students are invited to consider:

'What did you learn from the exercises-

Emotionally (How did they affect the way you feel?)

Factually (What new information came from them?)

Intellectually (What understanding or insight did they yield?)

Practically (Are there things you will do differently as a result?)'

The initial course guidance to students about how to complete their evaluation teases out the multiple strands of reflective development achievable by the recording process:

• To record what happened, and how they responded to it with thoughts and feelings. This is a simple descriptive function, but it also builds up over the months into a record of their experience of the whole sequence of workshops, so they can look back and identify their developmental steps over a substantial period.

• To reflect on their own personal learning, and by naming it expand it, connect varied elements of the day and different exercises to the learning objectives, and make links to other learning opportunities on the course in lectures, seminars, reading and previous workshops (see Additional File [J&H.Evaluative methodology] Quotes 1 & 2). This is a synthesis function, which develops a habit useful for continuous professional development.

• To analyse how and why the exercises were effective (or not) in producing learning, and to make suggestions to facilitators for changes in the exercises or structure of the day in future, based on their experiences (see Additional File [J&H.Evaluative methodology] Quotes 3 & 4). This feedback develops understanding of the processes of learning from experiential opportunities, and of what suits the student's particular learning style.

• To get feedback from a facilitator, and thus engage in an individual and private dialogue about their learning, which is designed to encourage further reflection (see Additional File [J&H.Evaluative methodology] Quote 5).

It is made clear at the outset of the course that neither the workshops nor the student evaluations contribute to the summative student assessment. Students are reminded when writing their evaluations to be aware of group rules of confidentiality, and not to identify other students by name, but to use 'my partner' or 'in my group'. They are encouraged to experiment with ways to complete their evaluation. 'Stream of consciousness' is discouraged, however, because it lacks the element of intellectual synthesis. Some students keep an additional journal for a more personal record of that sort.

One facilitator prints out a copy of each student's evaluation, and responds to it with affirmations, comments, questions, reactions or challenges in writing, in a supportive personal and private dialogue format rather than a 'red pencil' one (see Additional File [J&H.Evaluative methodology] Quote 5). In this dialogue, students are encouraged to recognise that the workshop experiences are purposeful in relation to the day's learning objectives. They are challenged when their learning is stated generally, loosely or

minimally, and encouraged to sharpen their focus, or undertake the task with more commitment. It is perfectly possible to reply by email too, but usually we give out the annotated documents at the start of the next workshop, when the commenting facilitator provides a 'summary of learning' to the group, including a resume of the most general student themes, suggestions made to the facilitators for future changes, and any learning points that seem to require clarification or further comment. As they have their own feedback to hand, they can compare it with the general feedback and notice how their learning differs from or resembles that of others. Some students choose to share their written evaluations and feedback privately to further enhance mutual learning. Insofar as the facilitator in their summary places emphasis on some learning, the student also has a second opportunity to grasp those elements which may be worthy of further reflection. Although this summary is given by the commenting facilitator, it is assembled with input from all facilitators. This whole process thereby provides and integrates very useful feedback to the facilitators about, for example, whether any student could benefit from suggestions for further reading, or further discussion in person with a member of the course team, or even, if distressed, a recommendation to seek support from, for example, the student counselling service.

The workshop co-ordinator makes a confidential and anonymised file of the evaluations from each workshop and for each student, so the evaluations can be used for immediate reflection on how the course is progressing, and on individual developmental needs, as well as future curriculum development. Although it takes 2–4 hours to respond to the 20 student evaluations after each workshop, this is much more economical of time than 20 individual interviews. On rare occasions, a private dialogue via an email exchange can be sustained over a period, whilst a student wrestles with a particular developmental issue. In this mode, the facilitator becomes an ally and supports the student in their developmental process by a willingness to respond, by being a witness to their developing perceptions or opinions, and by acting as a role model of a practitioner willing to engage with complex personal or ethical dilemmas.

Results
Representative example quotations are given to illustrate the sort of dialogue in which we engage the students (see Additional File [J&H.Evaluative methodology] Quote 5), the perceived value (or limitations) of the process to the students (see Additional File [J&H.Evaluative methodology] Quotes 6 & 7), how the students use the workshops a launch pad for change (see Additional File [J&H.Evaluative methodology] Quote 8), the sorts of suggestions made by students to develop the workshops (see Additional File [J&H.Evaluative methodology] Quote 3 & 4), how reflective skills develop over the course (see Additional File [J&H.Evaluative methodology] Quote 9), and how students use the evaluations to plan for action against their own objectives (see Additional File [J&H.Evaluative methodology] Quote 10). Three extracts from the first term review evaluations are quoted below to illustrate how students synthesise, integrate and develop their learning over a period of time. Note how the evaluations also demonstrate that students aware that they are engaging in a process that is incomplete, that they may fail, but that they have confidence to use failure constructively and move on, a hall mark of effective reflection (see Additional File [J&H.Evaluative methodology] Quotes 11 to 12).

Students clearly value the written record that they create for the year and the reflective component embodied in it, since they return to it later in their clinical years (see Additional File [J&H.Evaluative methodology] Quotes 13 to 15).

Discussion
Self-awareness is a difficult skill to develop. It includes the development of an understanding of the self as an individual and as a professional in the making, and of any incongruities [3,4]. The evaluation process described here is used to assist students to identify and reflect on their attitudes, values, and personal preferences, so as to increase awareness of how they resemble or differ from the rest of the student group in respect of personal and family history, race, culture, sex, gender, sexuality, class and personality, and to identify what impact this awareness might have on their clinical practice. A student with a well-developed sense of self and a capacity for self-acceptance and constructive self-criticism is likely to be less at risk of later depression arising from the stresses of the medical doctor roles, and more likely to relate to patients and colleagues with enthusiasm, clarity, empathy and a robustness that arises from a reduced fear of embarrassment and self-consciousness. We are not aware that the approach described here has been tried previously with medical students. It does resemble the use of written evaluations by Levy [10] to monitor the development of self-awareness on a counselling skills training course. In that study, student participation was voluntary as the process was part of a research project, but response rates increased as the opportunities continued, and students were given five sets of trigger questions to which to respond at regular intervals. Questions were not planned in advance of that course, except for the first set, but emerged from hypotheses arising from the facilitator's understanding of course events, and from course objectives. She did give a report-back to students after collating the comments.

The increasing richness and the quality of the feedback from our students as the year progresses suggest that this method of evaluation is useful. All the elements of this carefully designed process contribute to student learning (as well as facilitator reflection and curriculum development), and do so relatively economically in terms of time and paper. Although developed by us in the context of personal and professional development, the approach is adaptable for wider uses. In many Universities and Medical Schools, student evaluation of course work is given via questionnaires or surveys, where it can easily become separated from reflection about the nature, complexity and mechanism of individual learning. This separation may, through use of computer summarising, facilitate quantitative measures, but it does not encourage or develop deep student reflection or student learning from the process itself. We also use questionnaires, but the information they provide is different. Questionnaire responses alone tend to emphasise dissatisfaction, which may skew institutional analysis and can encourage a culture of negativity and passive complaint. It also has more obvious benefit to future students than to those who actually respond.

The additional use of written evaluations of the sort described here gives a more balanced approach and, aiming to address issues of both course and student, is more learner-centred, and the students benefit from their own record plus the individualised responses. The introduction of emailing has made the process simple and efficient. It is made clear that evaluations are *expected* after every workshop and the few failures to deliver are investigated, thereby encouraging a reflective habit. Use of learning objectives as a focus against which to set responses encourages structured reflection rather than a diffuse waffle, and so also builds critical skills. Clearly, for large classes of students the work of responding individually would need to be divided amongst a panel of trained commentators in order for the task to be manageable. However, if a truly effective personalised commentary is to be attempted on a regular basis (an ideal to which the General Medical Council seems increasingly committed [11]), this approach seems relatively cost-effective for both staff and students. Our students suggest that it provides a useful preparation for clinical school, where the learning will be primarily from experience, and where the climate and culture are less likely to be supportive and affirming of structured reflection. We encourage students to build a periodic reflective review of their career development into their clinical years and to use each other as allies in this process where possible.

Competing interests

None declared

Author contributions

All authors contributed equally to this work

Additional material

Additional File

Appendix: Quotations
Click here for file
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Acknowledgements

References

1.　Johnson MH, Henderson P: **Acquiring and demonstrating attitudes in medical education: attitudes to homosexuality as a case study.** *Medical Teacher* 2000, **22:**586-592
2.　Johnson MH: **Exploring masculinity with male medical students.** *Sexual and Relationship Therapy* 2001, **16:**165-171
3.　Johnson MH: **Male medical students and the male body.** *In: Body lors and laws (Edited by: Bainham A, Sclater SD, Richards M) Oxford and Portland, Hart Publishing Ltd.* 2002, 91-103
4.　Henderson P, Johnson MH, Barnett M, Weaver S: **Supporting medical students to take responsibility for developing their communication skills.** *Medical Teacher* 2001, **23:**86-87
5.　Heron J: **The Facilitator's Handbook.** *London, Kogan Page* 1989
6.　Gibb J: **Defensive communication.** *Journal of Communication* 1961, **3:**142-149
7.　Kolb D: **Experiential Learning: Experience as a source of Learning and Development.** *Englewood Cliffs, Prentice Hall* 1984
8.　Cowan J: **On Becoming an Innovative University Teacher – Reflection in Action.** *Buckingham, UK, The Society for Research into Higher Education & Open University Press* 1998
9.　Schon D: **Educating the Reflective Practitioner.** *San Francisco, Jossey Bass* 1987
10.　Levy C: **Reflective Learning.** *In: Balancing Acts – Studies in Counselling Training (Edited by: Johns H) London & New York, Routledge* 1980, 67-81
11.　GMC: **Tomorrow's Doctors.** *London, General Medical Council* 1993

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