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# Alternative learning environments: what do they contribute to professional development of medical students?

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**SUMMARY** *Special study modules provide opportunities for students to develop lifelong learning skills and develop areas of interest. The GMC also recommends opportunities to study topics not included in the core medical curriculum. This paper reports the evaluation of modules based within alternative learning environments developed to provide students with experiences outside traditional medical, scientific or academic cultures. The attachment was highly rated as contributing to professional development, provided novel learning experiences, and was stimulating for both students and supervisors. All students achieved new skills that they felt were pertinent to their personal development. Assessment was by standardized pro forma, including generic transferable skills and module specific outcomes. Whilst overall assessment grades were comparable to similar course components, unease amongst both students and supervisors was expressed reflecting anxieties in the diversity of workloads and assessment. Attempts to standardize assessment across the diversity of modules did not reduce anxieties and potentially detracted from the learning experiences.*

## Introduction

Recommendations on the undergraduate medical curriculum from the General Medical Council (GMC) include a programme of special study modules (SSMs) (General Medical Council, 1993, 2002). This programme should ensure development of lifelong learning skills (transferable or generic skills) associated with opportunities to explore topics outside the core of the undergraduate medical curriculum (Macnaughton, 1997; Murdoch-Eaton & Jolly, 2000).

The SSM programme at Leeds involves modules of varying length which, as recommended by the GMC, are in “subjects directly related to medicine, whether laboratory based or clinical, biological or behavioural, research orientated or descriptive” (General Medical Council, 2002). Each has particular skill objectives. In the first year of the five-year undergraduate medical course, these are information retrieval and presentation; IT skills; and skills in analysis of data. Early in year two, the first SSM is a literature review project that leads students to examine and review the primary literature related to a particular medical or biomedical science topic. This builds on the skills of information handling and retrieval developed in year one. At this stage in their undergraduate career, students would thus have acquired competence in a number of transferable skills, developed an understanding through the core curricular course of the science underpinning medical practice and had early clinical exposure in both community and hospital settings.

Alternative educational climates can be motivating, and the mature learner wants progressively different types of

teaching, learning and environments (Roff & McAleer, 2001). It therefore seemed an ideal opportunity at the next SSM to allow students to gain broader experience in a subject not necessarily directly allied to medicine, and to be exposed to both different approaches to learning and different cultures from the medical/scientific/academic range they had been exposed to so far.

This paper describes the evaluation of the modules that were developed, with the aim that students should learn new skills, adopt new attitudes and acquire knowledge in areas outside the mainstream of medical education that would enrich and enhance their professional development.

## Method

### *Selection of SSMs*

Suggestions for modules were solicited at SSM teaching committees, which include student representatives. Suitable topics were identified and relevant potential supervisors contacted. Supervisors were required to complete a proposal form that outlined learning objectives, generic skills, learning and teaching methods and assessment proposals. Information contained in these forms allowed the committee to evaluate suitability. All modules placed emphasis on generic skills inherent in the overall SSM programme objectives (Murdoch-Eaton & Jolly, 2000; Whittle & Murdoch-Eaton, 2001).

Module selection by the students was undertaken after introductory presentations, written guides and opportunities to meet with the module supervisors.

**Special study modules developed** (see Appendix 1 for details)

### *Foreign language skills for medicine*

The Language Centre at the University offered modules in French, German, Italian and Spanish that were specifically designed for medical students. In addition to learning a specific language, students developed language acquisition skills that could be applied to any language.

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*Healthcare in a multiracial Britain*

This module explored healthcare issues in relation to minority groups.

*People and science: modern medicine in historical perspective*

This module enabled students to place current medical practice and instruments in an historical context by examining and interpreting historical sources. Members of the School of Philosophy delivered this module.

*Medicine and the police*

The aim of this module was to consider the interface between the two professions, and was delivered entirely at a local police college.

*Community-based projects.*

These projects were based within local community action groups.

*An introduction to theory and practice of counselling*

The independent university student counselling service provided a course on generic counselling skills.

*Working together: being part of the healthcare team*

The aim of this module was to explore issues related to the impact of values and beliefs on teamwork within a healthcare setting. Members of the School of Healthcare studies whose main teaching responsibilities are to nurses and other professions allied to medicine provided this module.

*Writing with wit and wisdom—communication by the written word*

Exposure to different forms of writing (journalistic, creative, narrative) provided students with an opportunity to consider written communication.

**Teaching and learning methods**

A wide range of teaching and learning methods was used in these modules. For example, the language module employed practical sessions with teaching staff and independent study in the Language Centre using Internet resources, video, computer-assisted language learning software, audio and

print materials. Other modules used seminars and discussion groups whilst role-play simulation was employed to develop counselling and teamwork skills. All modules included periods of self-directed study.

**Assessment**

Throughout the SSM programme, standardized assessment criteria (with clear descriptors of associated qualities and achievements) are used in order to ensure comparability between the different modules.

Assessment was in four domains: Process (including organization and time management), Skills acquisition (including developing new skills pertinent to the attachment), Information handling (including location and extracting pertinent information), Report (including standard of final presentation). The final assessment grade was based on achievements in these domains using clear descriptors of the standard expected. (The descriptors of distinction level and bare fail student are given in Table 1.)

Thus, all assessments included an evaluation of generic skill acquisition as well as a final report. The final report was in a form appropriate to the specific module including oral presentation, videotape, portfolios (written reports/descriptions of experiences), reflective journal and action plans for professional development.

**Evaluation**

Supervisor and student feedback was obtained directly by means of scored questionnaires and free comments to questions. Qualitative feedback was also obtained from structured student discussion groups and from student representatives. Feedback was analysed separately for each module and for the whole SSM period.

Qualitative data were analysed by looking for themes both within specific modules and across the whole SSM period. The responses are summarized in Tables 2 and 3.

**Resources**

Funding for these external placements was identified from SIFT allocations for SSMs as agreed with the Northern and Yorkshire Regional office, and from within the Medical School budget allocated to SSM teaching.

**Table 1.** Assessment grade descriptors.

Grade	Description
Distinction (A)	Evidence of excellent time management, organizational and team working skills (as appropriate to the module). Student has demonstrated an enthusiastic approach, and a clear understanding of the purpose of the module (not simply carried out instructions without thought). Evidence of rigorous self-reflection. Rapid acquisition of new skills. Excellent ability to locate, summarize and interpret information/data. Report (oral, written or poster) is clear and logically presented with a high standard for any figures, graphs etc. Clear evidence of understanding of possible clinical implications (if appropriate)
Bare Fail (E)	Evidence of poor time management and organizational skills. Student has shown a lack of enthusiasm, and has carried out tasks poorly or without real understanding. Limited evidence that new skills have been developed. Student has struggled, despite guidance, to locate, summarize and interpret information/data. Report (oral, written or poster) is poor, lacking a clear and logical structure and with some sections that are difficult to understand. No evidence of any self-reflection or understanding of clinical implications (if appropriate)

## Results

### Student achievement

A total of 230 students undertook this SSM. After completion of a selection form indicating preferences, 75% of students matched with their first choice.

The overall performance of students in this SSM period was impressive as judged by the grades achieved: Distinction 11%; Very good pass 29%; Good pass 41%; Bare pass 15%; Bare fail 3%; Bad Fail 1%.

These outcomes were compared with results from five other SSMs from years 1, 2 and 3, and showed no differences in distribution of grades (Mann-Whitney U test,  $p > 0.05$ ).

### Student feedback

Student feedback demonstrated a strong pattern of agreement for the questions “this SSM helped me to develop new skills” and “this SSM has enhanced my professional development” (Figure 1). The positive bias in response to these questions was evident for each of the individual modules; 89% of students would recommend their SSM to other students.

Whilst not apparent from the accumulated data in Figure 1, there were three modules where more than 35% of students agreed or strongly agreed that the perceived workload was excessive and in one of these 94% of students agreed or strongly agreed. Modules with more structured contact time and assessment requirements (especially the languages modules) were perceived to have an increased workload compared with those requiring more self-directed work or portfolios/reflective practice (Figure 1 and Table 2).

Qualitative feedback reflected satisfaction with the type of modules and experiences gained (Table 2). Commonly students recognized that they were being exposed to other methods of learning that would otherwise be unavailable to them, “learning things which are very different to the things

we are taught in the Medical School”. Students also commented that the chance to experience different learning techniques was also valuable and helped them to acquire new skills. Not surprisingly, students also appreciated the chance to set their own objectives and explore their own interests, and in many cases students recognized that the experience taught them valuable things about themselves that would reflect in future practice. The development of team working was highlighted by a number of students, as was “the chance to discuss and argue points of view—a chance that is seldom afforded to us”. The theme of student unease with differing assessment requirements was expressed frequently: “discuss assessments in other SSMs so they all have the same workload”. Conflicting views of the differing amounts of contact time between modules also emerged as concerning the students: “less work, more teaching” from one student, “maybe less tutor time and more time for writing” from another.

### Supervisor feedback

For most supervisors, this was their first exposure to medical students, and feedback reflected positive rewards from both the type of project and the student contact (Figure 2 and Table 3).

All supervisors viewed the experience as extremely rewarding, “direct contact with medical students in experiential teaching/learning, very enjoyable to see their development”, and “having motivated, hard-working students capable of coping with the pressure”. Supervisors also commented on the students’ “willingness to learn in new ways”, and their ability to “develop ideas and apply them to practice”.

## Discussion

The clear view that emerges from feedback is that students perceived personal benefits from these attachments and would recommend the experience to other students. The vast

## Student Evaluation

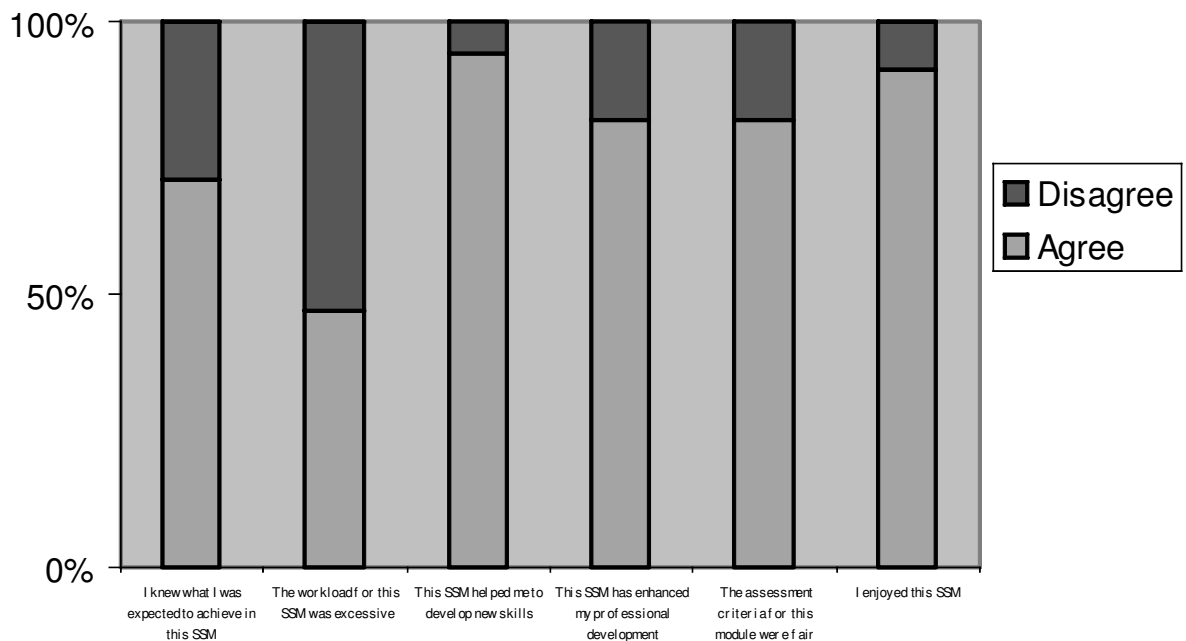


Figure 1. Student feedback.

**Table 2.** Qualitative student feedback—representative students’ comments on main themes.

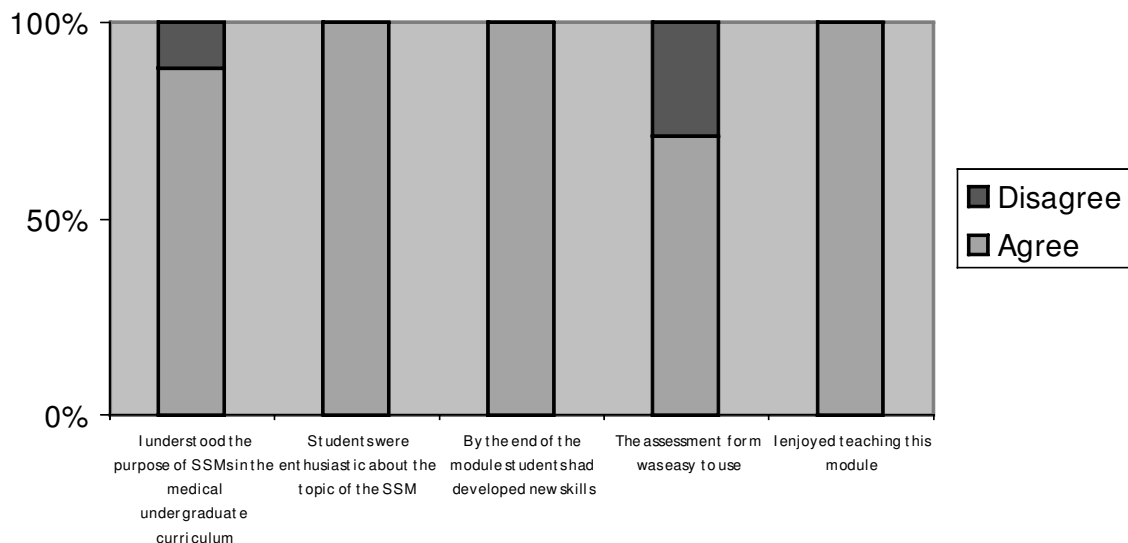
What was the best thing about this SSM	How could this SSM be improved
Learning new skills and having a chance to practise them	The SSM could be improved by having more specific assessment criteria
The journal was a good thing to do as it made you realize what you had learned and helped with self-awareness	Make this SSM part of core
Being able to take a step out of medical specific training—to look at a different area but which is related to medicine	Devote more time to this type of SSM
Seeing other bits of the university	Avoid overlap with core material, reduce workload
Doing something totally different—a breath of fresh air from medicine	Spread the SSM over a longer period of time to facilitate fitting in with other assessment deadlines
It was great to be in a different environment learning something new	Should be taught to the whole year, need more time to discuss interesting points
Wasn’t directly medical	More instruction and more formal teaching sessions
Chance to discuss and argue points of view—a chance that is seldom afforded us	Could be condensed

majority had developed new skills and considered that the SSM had enhanced their professional development. It could be argued that second-year students are at too early a stage in their medical careers to make a valid judgement on whether their future professional development had improved. However, it is probably an indication of the interest of the SSMs and the element of skill development inherent within each SSM that 82% were of the view that their professional development had been enhanced. Although not directly “medical”, the modules were designed to give students an insight into areas that may in the future prove useful to their careers. In particular with regard to ‘Medicine and the Police’ one student remarked that, “a lot of the things we learned, I think, should be taught to all junior doctors in preparation”. The success of this SSM block means that we will be offering it at an additional time to third years, and are developing further options.

Causes for concern that were highlighted by both scored questions and free comments were workloads, knowing what was expected, and degree of structure. Most supervisors were not familiar with the workload pressures of medical students and we shall be reviewing with them their module requirements. However, differing workloads within parts of the curriculum where students are doing different things from their peers often lead to anxiety and comparison, which is not necessarily valid. Students can confuse ‘contact time’ with ‘workload’ and not take into account directed vs. self-directed work. It is also an important learning objective for future doctors to develop strategies for coping with uncertainty and differences as part of the SSM programme (General Medical Council, 1993).

Assessment of any form of experiential learning with varying requirements, as in any report or portfolio reflecting self-learning, raises anxieties on the part of both student and

### Supervisor Evaluation



**Figure 2.** Supervisor feedback.

**Table 3.** Qualitative supervisor feedback—representative comments.

What was the best aspect of this SSM	How could this SSM be improved
Direct contact with medical students in experiential teaching/ learning—very enjoyable and rewarding to see their development	Longer period of time and not before Christmas
Having motivated hard-working students who are capable of coping with pressure	It would be better if students could devote a full two weeks to work on the SSM
Enthusiasm and humour of students	Run this SSM at a different time of year, get help with marking
Willingness of students to participate in experiential work	Meeting with other supervisors to exchange ideas for teaching, improved self-understanding about medical course
Teaching an engaged and enthusiastic group	Some instruction on assessment, and guidance on handling problem students

supervisor. An important aspect of such learning is the nature of personal objectives and reflection on learning; however, the necessity of imposing a structure for commonality of assessment will inevitably detract from the potential learning (Challis, 1999; Pitts *et al.*, 2001). A significant proportion of students (30%) felt that they did not know what was expected of them; most learners find the process of developing an appropriate portfolio and reflecting on experiences difficult, particularly in the early stages (Challis, 1999). The quantity of assessment material required within each module could also be different and also led to concerns amongst the students about the differing workloads, again demonstrating confusion of quality with quantity (Challis, 1999). A common pro forma with defined criteria was used in all modules in an attempt to ensure validity and reliability, yet to be flexible enough to encompass the range of subject matter and teaching methods. Despite these efforts, this method of assessment combining the individualized or portfolio approach with a standardized outcome was problematic as illustrated by the concerns expressed in feedback. Assessment based on a standardized, reductionist and comparative approach may result in measuring the irrelevant rather than the unmeasurable learning objectives and stifle the aims of the learning experience (Snadden, 1999; Pitts *et al.*, 2001). Our experiences of attempting to standardize the assessment process between such modules designed to develop a range of experiences may well be invalid. We shall be considering moves towards accepting ultimately that a simple final quantitative outcome, i.e. pass/fail, may be necessary, and that portfolio assessments around qualitative reflective outcomes are a more valid approach to the SSM programme. Educating the students (and supervisors) at the undergraduate level to make full use of this freedom of assessment will pose considerable challenges.

#### Practice points

- Alternative learning environments can be motivating for both students and teachers.
- Medical students experience cultures outside the traditional scientific, medical or academic exposure.
- Skill developments pertinent to personal development are enhanced.
- Assessment methodology should be sufficiently flexible not to detract from the learning experiences.

#### Notes on contributors

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**Appendix 1: Modules offered to students**

Module aims	Content
<i>Foreign language skills for medicine</i>	
<ul style="list-style-type: none"> <li>• Develop foreign language acquisition skills</li> <li>• Gain knowledge of modern technology and independent-study based language learning techniques</li> <li>• Develop communication and presentation skills in the target language</li> <li>• Develop skills in the target language, for use in a medical context</li> </ul>	<p>French, German, Italian and Spanish</p> <p>At novice, intermediate and advanced levels</p>
<i>Healthcare in a multiracial Britain</i>	
<ul style="list-style-type: none"> <li>• To equip doctors with the necessary skills to offer accessible, sensitive and appropriate care for people from minority groups</li> </ul>	<ul style="list-style-type: none"> <li>• Topics include types of disadvantage faced by minority groups, the barriers they face when dealing with health care agencies and the importance of culturally sensitive provision</li> <li>• Case studies include the experience of cancer amongst South Asian people, the experience of parents caring for a child with cerebral palsy and the service support to young people with haemoglobinopathy and their families</li> </ul>
<i>People and science: modern medicine in historical perspective</i>	
<ul style="list-style-type: none"> <li>• To develop skills of searching and analysing historical sources related to medical topics</li> <li>• Appreciate how personalities and personal relationships can influence the development of medical theories and practice</li> <li>• To develop skills of presenting arguments in open discussion</li> <li>• To be able to place current medical treatment and instruments in an historical context</li> </ul>	<p>The module concentrates on four historical case studies:</p> <ul style="list-style-type: none"> <li>• Introduction of the medical laboratory</li> <li>• The history of the diabetic patient</li> <li>• The midwifery forceps</li> <li>• The stethoscope</li> </ul>
<i>Medicine and the police</i>	
<ul style="list-style-type: none"> <li>• To explore the interface between the two professions with particular reference to areas where the two professions can help each other</li> <li>• To experience police training methods</li> <li>• To understand the principles of how the police operate</li> </ul>	<p>Topics include:</p> <ul style="list-style-type: none"> <li>• Interview skills</li> <li>• Domestic violence</li> <li>• Firearms and major incident investigation</li> <li>• Principles of police investigations</li> <li>• Self-defence</li> </ul>
<i>Community-based projects—voluntary organizations</i>	
<ul style="list-style-type: none"> <li>• To promote a holistic model of the individual and families within the community</li> <li>• To acquire knowledge of the difference in approach to healthcare by different groups in the population</li> <li>• To demonstrate an understanding of the role of health promotion</li> <li>• To demonstrate a sensitive and empathic approach to the needs and circumstances of people in the community</li> <li>• To discuss the role of other health and social care professionals in the care of patients</li> </ul>	<p>Students were attached to local community resources:</p> <ul style="list-style-type: none"> <li>• Addiction units</li> <li>• Local palliative services</li> <li>• Homelessness organizations (Big Issue)</li> <li>• Community services for travellers within the area</li> <li>• Refugee support units</li> </ul> <p>Project objectives were derived by the needs of the organization</p>
<i>An introduction to theory and practice of counselling</i>	
<ul style="list-style-type: none"> <li>• To introduce students to some of the main theoretical models used in therapeutic counselling, including their historical roots in scientific and medical thought</li> </ul>	<ul style="list-style-type: none"> <li>• The implications for and application to clinical counselling practice is emphasized throughout</li> <li>• Provide opportunities for students to develop a range of core counselling skills through experiential and practical work, and to reflect on the impact of various personal communication styles</li> </ul>

*Working together: being part of the healthcare team*

To help students:

- take an in-depth look at how they function as part of a team
- explore how their own and others' processes of communication, behaviour, attitudes, values and beliefs impact on different members of the team

- Discussion of the concept of 'teamwork' and the impact of collective and individual responsibility
- Analysis of group processes and dynamics
- Knowledge, skills and attitudes that enable an individual to work effectively as a team member
- Factors which hinder effective teamwork
- Practise in delivering and receiving constructive feedback

*Writing with wit and wisdom—communication by the written word*

- To enable students to recognize the importance of written communication in different contexts within medicine
- To enable students to study examples of different forms of writing (journalistic, creative, narrative) and practise these forms themselves
- To enable students to identify good writing techniques that will help them develop their communication skills in the future

Topics include:

- Patient notes
  - Communication between professionals
  - Patient narratives
  - Doctors as writers
  - Medical journalism
  - Humour and medicine
-