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Title: Student Choice in Medical Education

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"*The greatest educational opportunities will be afforded by that part of the course which goes beyond the limits of the core and that engenders an approach to medicine that is constantly questioning and self-critical*"

Tomorrow's Doctors, General Medical Council UK, 2002.

ABSTRACT

Medical education is evolving at a rapid pace and it is not possible to teach medical students all they need to know. Medical educators throughout the world have sought to change the way medical courses are delivered and to introduce a range of optional or elective subjects to allow students study areas of particular interest. These options are usually referred to as Student Selected Components (SSCs). These options provide students with a way to customise their own learning and to follow particular career interests. These electives are also a very useful vehicle for students to undertake research projects, particularly when they run concurrent to the core curriculum. SSCs can be used to develop diversity between medical schools as they can allow educators to develop modules in areas of particular strength at the individual institution. In the Medical School at University College Cork, students are presented with a menu of options in the first 3 years of the course which can be of 3 main types; options that go deeper than the core, those that are related to the core and those that are unrelated to the core. In this way, students are given the option to pursue a wide range of subjects which may be related to specific medical interests, to career aspirations or may simply help to broaden their development and educational experience.

INTRODUCTION

Medical Education is evolving at a rapid pace in Ireland and throughout the world. Medicine remains a popular profession and entry level requirements remain very high in all countries, making it a highly competitive discipline. Most courses in Ireland and the UK are of five years in duration though some shorter four year courses for graduates are now emerging. The trend in Medical education is to provide the 'core' knowledge to all students so that

they develop the requisite knowledge, skills and attitudes to become competent practitioners. Providing all the requisite core knowledge is becoming increasingly difficult given the rapid advances taking place in the field of medicine and science. In order to address this, medical educators throughout the world have sought to change the way medical courses are delivered. There is a general move away from the more didactic preclinical and clinical courses to a more integrated curriculum that introduces clinical contact from the outset and encompasses problem based learning and research led teaching from the outset. A range of optional or elective subjects have also been introduced in most medical schools and these provide an opportunity for students to further a particular interest area and to develop key generic skills such as research and communication skills. These options are usually referred to as 'student selected components'. Medical curricular reform has also seen the introduction of more diverse teaching, learning and assessment methods. The end of year exam burden for medical students is high and the move towards more formative and continuous assessment is a welcome move.

CHOICE IN MEDICAL EDUCATION

The idea of a core curriculum with options was first described in *Tomorrow's Doctors - a report on medical education published in the U.K.* in 1993. The options were first called Special Study modules to fit in with a modular curricular system. However, it soon became clear that not all curricula were modular and the way in which options were provided did not have to be in this format. Hence in the 2002 revision of *Tomorrow's Doctors* they were renamed *Student Selected Components* (SSC's). This document states that between 25-33% of curricular time should be devoted to SSCs and that at least 60% of SSCs should be in subjects related to medicine, whether laboratory-based, or clinical, biological or behavioural, research-oriented or in humanities related to medicine. SSCs should support the core curriculum and allow students to;

- learn about and begin to use research skills;
- have greater control over their own learning and develop self directed skills;
- study, in depth, topics of particular interest outside the core curriculum;
- develop greater confidence in their own skills and abilities;

- present the results of their work verbally, visually or in written format;

consider potential career paths through experience in different clinical environments.Hence the SSC programme can be seen as that part of the curriculum that allows students to have choice in their medical education and to develop the skills and attitudes necessary for a future of lifelong learning which will subsequently allow them to update their knowledge and skills throughout their professional careers. This means that many SSCs are expected to have a substantial element of self-directed learning incorporated, with a concomitant decrease in traditional didactic lectures and tutorials.

SSCs are generally of three main types:

1. The core in depth e.g. Genetics of human disease,
2. Related to or complementing the core e.g. Medical Computing, Art in Medicine
3. Unrelated to the core e.g. French, Irish, Italian (Other non-language examples?)

In this way, students are given the option to pursue a wide range of subjects which may be related to specific medical interests, to career aspirations or may simply help to broaden their development and educational experience.

Harden and Davis in their 1995 paper described how SSCs could solve many of the problems in medical education (1). They believed that when linked to a core curriculum the SSCs could:

- Provide students with an opportunity to study in greater depth an area of their choosing
- Facilitate the development of integrated themes giving a multidisciplinary and multi-professional direction to the curriculum
- Facilitate competencies such as communication skills
- Allow an extension of the range of subjects or topics covered in the curriculum. This allows students to sample possible areas of later specialism.
- Provide diversity between medical schools. A range of interesting SSCs may attract potential students and influence their choice of medical school.
- Facilitate a range of teaching resources
- Attract and reward both students and staff.

The structure of the SSC programme can take a number of formats and these are comprehensively covered by Harden and Davis (1). SSCs can be integrated into the core curriculum, run concurrently, run as intermittent blocks throughout the curriculum or run sequentially. In the Medical School at UCC, SSCs run concurrently with the core curriculum and SSCs are taken over one or two semesters in each year. This is particularly advantageous for research based SSCs as they can run throughout the whole academic year and it gives students time to apply for ethical approval and conduct a research project over a longer period of time. This is also particularly useful if students are participating in ongoing institutional research. Concurrent SSCs also allow students to participate in courses run by other schools in an institution e.g. the Sciences, Engineering, Arts, Business and Law. In UCC, we also allow our students to self-propose their own SSC and this has proved very popular with students who really engage with their chosen subject area and generally do very well in the end of year assessment. Examples of current self proposed SSCs by medical students in UCC include robotic assisted gynaecological surgery, the development of a video for patients on breast reconstructive surgery, the development of a novel method for communication skills teaching and the establishment of a unique scheme for delivering medical supplies to hospitals in developing countries. The SSC must be designed entirely by the student and they must ensure that any activities planned are feasible within their busy schedule. Students must submit a module plan to the SSC coordinator and arrange a meeting to outline the preparations and meetings conducted to set up the course. The student then has to write the learning outcomes for the module and the assessment method and date are set. All medical Students taking this option are given the UCC Learning Outcomes handbook to guide them through this process. This option is particularly suitable for highly motivated students and involves quite a lot of work at the beginning of the module. However students develop key transferrable skills during a module of this type which are iinvaluable for a future of lifelong learning.

It is clear from the literature that medical schools throughout Ireland and the UK have devised their own SSC programmes and there is great diversity in the content, duration and structure of the programmes offered. In the UK, a paper on the implementation of the

report *Tomorrow's Doctors,* undertaken in 2002 stated that all schools had implemented an SSC programme (2). However, the authors acknowledges that in some schools, SSCs were only found in particular parts of the course, some were of short duration and others lacked definition of objectives and assessment strategy.

A recent review of the SSC literature (3) has highlighted the types of SSCs on offer in UK medical schools. There are no reports of the SSC programmes available in Irish Medical Schools. Many of the SSCs in the UK are attractive and innovative, including for example, modules in health promotion, complementary therapy, ethics, medical illustration, literature and art in medicine (4-15).

In 2006 the General Medical Council issued a report called *Strategic Options for Undergraduate Medical Education* (16). This report surveyed GMC members including medical schools, academic groups, royal colleges, professional associations, regulatory bodies, other health service groups, patient groups, and charities. One of the specific questions asked of the respondents was 'whether Student Selected Components (SSCs) should become a larger part of undergraduate curricula'. Most respondents did not support increasing SSCs in the curricula. Some argued that between 25-33% was too much since it left little time in the curriculum for 'core' subjects. Other respondents felt the time should actually be reduced, partly so that students would then be able to make more realistic choices later in their training on the basis of learnt awareness of their own strengths and weaknesses. It was also difficult for some medical schools to offer real choice to students if 25% of overall curricular time was required.

It is interesting to note in this report that a criticism raised about medical education in some schools was that the curriculum was designed to suit the institution rather than the student. While there was a strong emphasis in the curriculum on 'patient centeredness' this rarely translated to 'learner centeredness'. Some respondents suggested that alternative pathways could be made available through medical education to suit individual learners, making SSCs a larger part of the curriculum.

Respondents also felt that SSCs could be used to increase inter-professional learning. When it came to specific questions on supporting the learner, many respondents highlighted the

need to support students to become self-learners, enabling them to recognise their own strengths and weaknesses. It was thought that, given the current large medical intake, not enough time is given to supporting and guiding students, particularly those who were having difficulties academically. It was also felt that medical schools should help learners to find ways of learning that 'most suit them and to help them identify genuine interests through Special Study Modules (SSMs) and intercalated degrees'. One medical school stated that:

'*The ability of individual schools to include specific strengths as themes within their curriculum (as SSCs) is an important element of diversity and strength in the UK system as a whole'.*

More recently, the Scottish Medical Schools SSC liaison Group have developed a consensus statement on the purpose of SSCs in medical education in Scotland (17). They state:

> *'Student Selected Components (SSCs) are an integral part of the undergraduate medical curriculum, contributing to the overall curricular learning outcomes and providing students' choice in studying, in depth, areas of particular interest. The principal learning outcome is the progressive development of skills in research, critical appraisal, and synthesis of evidence for maintaining good medical practice. The SSCs contribute to the development of a broad range of personal and professional skills, such as team working, communication, time and resource management, teaching and education skills, the ability to reflect and self-directed learning. They also provide opportunities to explore career options'.*

They also outline 12 useful tips for implementing an SSC programme in medical schools. They state that in order to make an SSC programme work, a number of key factors must be in place and these include:

1. A wide choice of subjects
2. Clearly defined learning outcomes for each SSC
3. Full integration into the curriculum
4. Guidance, resources training and support for staff and students
5. Motivation and commitment from staff and students
6. Group working – multidisciplinary and multiprofessional
7. Tutor diversity

8. Tutor training
9. Innovation and good ideas
10. Robust and flexible assessment
11. Course evaluation essential
12. Constructive summative and formative feedback to students

The Northern UK medical schools SSC consortium has formed a working party to develop a consensus on the common purposes and the learning outcomes achievable within a diverse group of medical schools and the assessable key tasks (18;19). A number of groups have tried to assess the key transferable skills possible in SSC programmes and this is particularly true of Professor Murdoch-Eaton's group in Leeds University (18-21). Murdoch-Eaton believes that the most important aspects that SSCs aim to develop in students are the attitudinal objectives – '*the need for active acquisition of knowledge, the capacity for self evaluation, ability to cope with uncertainty, acceptance of the need to contribute to the advancement of medical knowledge, and an awareness of the need for continuing professional and educational development*' (22).

OPPORTUNITIES IN THE SSC PROGRAMME

SSCs present a unique opportunity for Medical Schools to develop programmes that build on the strengths of the individual institution. This is particularly true in the case of research based SSMs. SSC present a unique opportunity for students to develop research skills during their undergraduate training. Research based SSCs enable undergraduates to become directly involved in the research work of the institution, experience what it is like to be a member of a research team and take part in cutting edge research. In UCC we have noticed that a significant proportion of students appear to be deliberately choosing SSCs that could potentially involve them in research or result in a publication.

SSC ASSESSMENT

Assessment of SSCs can prove challenging given the diversity of modules and approaches being developed. In a recent evaluation of an SSC programme (3) this issue was raised by students who felt that assessment should be on a pass fail basis. This was primarily due to

the perceived differing work loads attached to courses in the SSC programme and is an issue that has been discussed in the literature. Fowell (23) describes the situation very clearly in the following statement, *'….the very diversity and flexibility they welcome pose a number of problems for assessment of SSMs'.* Fowell's group has adopted an objective-based, criterion-referenced assessment for SSCs in order to ensure parity of assessment across the wide range of SSCs. There is an opportunity for the Medical school to introduce a new assessment scale for the SSC programme like this that takes account of the wide diversity in module types, disciplines, and tutors.

CONCLUSION

In conclusion, SSCs are an exciting development in medical education and the opportunities that exist are great in an era of rapidly advancing science. As curricular load increases, more and more elements of the traditional curriculum may have to be incorporated into this pathway. This has certainly begun to happen in the UK and as core curricular modules become more and more specialized, students may have to tailor their medical degree more carefully as they progress through the course.

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