MEDICINE, DENTISTRY AND VETERINARY MEDICINE

Principles of inclusive curriculum design

Anticipatory
Flexible
Accountable
Collaborative
Transparent
Equitable

Generic considerations

— cost and financial considerations;
— embedding student and staff well-being;
— promoting student engagement;
— use of technology to enhance learning;
— responding to different approaches to learning;
— avoiding stereotypes and celebrating diversity;
— making reasonable adjustments.

Introduction

It is the responsibility of the every member of staff within HE to respond to the requirements of equality legislation. The basic principle that can and should be universally responded to is that it is attitudes, barriers and other forms of discrimination within the system rather than individual characteristics or deficits that are the cause of disadvantage. Employing an inclusive approach is underpinned by the adoption of other principles of inclusive curriculum design, summarised in the adjacent text box and discussed in the introduction section of this guide available at www.heacademy.ac.uk/assets/documents/inclusion/disability/ICD_introduction.pdf

May and Bridger assert, in respect of developing an inclusive culture, "making a shift of such magnitude requires cultural and systemic change at both policy and practice levels" (2010: 2). In essence this change is represented by a shift in focus from responding to the 'needs' of individuals or specific groups of students to an approach that anticipates and plans for the *entitlements* of the evolving student population. Thus the onus is on institutions and subject communities to change and adapt their policies and practice rather than expect this of individual or specific groups of students.

There are many generic considerations of inclusive curriculum design, summarised in the adjacent text box, which are discussed in the introduction section. The focus of this section is on subject-specific considerations for those in those subjects aligned to medicine, dentistry and veterinary medicine. Here examples of innovation and effective practice are provided to demonstrate that effective practice for one group can and should be effective practice for all. The examples, resources and ideas included in this and other subject guides have come from the sector. They were obtained directly in response to a general request made to the sector during 2010, from a review of the HEA Subject Centres or from recommendations made by colleagues teaching in the specific subject.

Where there are examples in other subject guides that may be particularly relevant or worth reviewing for further adaptation these are flagged. However, notably inspiration and ideas for curriculum design can come from many sources, therefore reading strategies employed and ideas in other subject areas can be a useful source of new ideas.

Inclusive curriculum design: subject-specific considerations

Widening access and diversifying the professions

The three Medicine, Dentistry and Veterinary Medicine (MEDEV) subjects have been focusing on increasing the diversity of students studying Medicine, Dentistry or Veterinary Sciences and thereby diversifying the professions themselves. Considerable attention has been paid to addressing barriers in recruitment and admissions processes and in clarifying the competence and 'fitness' to practise standards implications set by the professional bodies (see Tynan, 2003).

An example from Medicine that could be adapted for incorporation into the Dentistry and Veterinary Sciences curricula is the University of Sheffield's Outreach and Access to Medicine Scheme (SOAMS), where medical students visit Year 8 students in secondary schools in deprived areas of Sheffield to provide clinical skills and health awareness sessions (Russell Group, undated).

The SOAMS project has a number of benefits for:

— widening access: by raising awareness of Medicine as an option and having current students acting as role models particularly in communities and areas where recruitment has traditionally been low;
— potential MEDEV students: by giving young people access to current MEDEV students at formative stages in the development of career aspirations and qualification choices;
— current students: developing skills such as communicating with different audiences and making medical information and research accessible to non-specialists. This is of particular relevance to medical students required to "teach effectively and act as a mentor to others" (QAA, 2002b) and dental graduates expected to "recognise and fulfil their responsibilities both as adult learners and as teachers" (QAA, 2002a).

See also Engineering, Languages, Linguistics and Area Studies, and Mathematics subject guides for other projects involving collaboration with secondary schools.

Ensuring students use a range of different learning approaches

There can be an implicit assumption that because the majority of MEDEV students have relatively similar prior education experiences and pre-entry qualifications that they will share similar learning approaches. However, this may not be the case and even if it is students will need to employ a range of learning approaches depending on the context, for instance memorising facts for exams and solving problems when faced with individual patients. Adopting a range of learning, teaching and assessment methods will enable all students, at different times, to study using methods with which they are confident and familiar to develop new skills. An awareness of different learning approaches and their application will be of benefit to all MEDEV graduates experiencing an element of teaching and mentoring in their professional careers.

> Newcastle University is developing web-based Dynamic Learning Maps that are "a fusion of formal curriculum maps, personal learning records, and community-driven maps". The project's purpose is to "enhance understanding and navigation of the curriculum and provide a means students to actively map, contextualise, reflect on, and evidence their learning". The Medical School has produced a map as an alternative way of producing the programme handbook and is working on a range of maps to support different curriculum elements such as anatomy and physiology, graduate skills framework, and medical specialities (McDonald, 2010). https://learning-maps.ncl.ac.uk/blog/post/a-quick-demo-of-learning-maps

> Out of our heads! OoOH! is an online exhibition of creative work produced by Medical students at the University of Bristol (Out of Our Heads, 2009). www.outofourheads.net/oooh/handler.php?page=homepage The purpose of integrating opportunities for students to undertake creative work into the curriculum was to "foster student awareness of the human stories that are everywhere in the enterprise" (Thompson et al., 2010: unpaged). Students are able to explore the stories of a range of actors – patients, doctors, family members, peers and themselves – using a diversity of mediums such as poetry, prose, drawing, film, dance and rap.

Preparing for practical and clinical work

In addition to generic graduate skills, MEDEV students need to acquire and demonstrate a number of professional competences and clinical skills (QAA, 2002a-c). Although considerable proportion of all MEDEV programmes are devoted

to practical and clinical work it is important to build in the use of approaches and strategies that will enable all students to have an equitable opportunity to develop the pre-clinical skills, knowledge and attributes required to undertake clinical work.

Virtual and simulated activities can offer MEDEV students the opportunity to acquire and hone practical and clinical skills prior to and as a supplement to work with patients or animals. This may benefit all students and in particular students lacking confidence or with restricted opportunities to acquire these skills before training starts.

Using haptic technology and simulated learning opportunities

Haptic technology enables students to simulate learning experiences that it might either be inappropriate for them to undertake on patients or animals at that stage in their training or that may be difficult for an assessor to view and appraise. Integrating opportunities to use these devices into the curriculum allows students to build confidence away from the pressures of working on 'real' patients as well as allowing greater flexibility in the timing and location of learning.

Given the emphasis on 'hands-on' training through supervised work on patients in Dentistry, the hapTEL Virtual Dental Laboratory project aims to create 'haptic and synthetic online devices' for use in the training of dental students and allied professions has benefits for all students wishing to practice clinical skills.

The range of Veterinary haptics that have been developed for teaching palpation-based examination include:

— the *Haptic Cow* – a virtual reality simulator that enables students to palpate a cow's reproductive tract;
— the *Haptic Horse* (Equine Colic Simulator);
— the *Feline Adbominal Palpation Simulator* (FAPS), which is a mixed-reality simulator utilising virtual reality and a physical model (Baillie and Kinnison, 2010) www.live.ac.uk/html/projects_haptic_01.html

Integrating teaching, learning and assessment using mobile technology

Tackling the isolation students may feel when on placement and encouraging students to reflect on their practice as a means of increasing their ability to see connections between theory and practice are examples of how mobile technology can support the learning of MEDEV students. Initiatives across the MEDEV subjects that seek to incorporate the use of mobile technology into the curriculum to provide additional support for students on the ward or in a placement include:

Mypad Mobile Learning Environment (MLE), which is a handheld device that veterinary students can use to "record, organise, access and reflect on the relationship between theoretical and practical learning experiences" (LIVE, undated). www.live.ac.uk/html/activities_myPad.html

The University of Leeds is using a number of iPhone apps to support medical students during clinical placements. These include *mini-CEX*, where assessors input their appraisal direct into the device, and *Progress File*, which students can use to note-take while on the wards and post direct to their e-portfolios (Myknowledgemap, undated). www.myknowledgemap.com/services-for-education/ mobile-learning/iphone-apps-for-medical-education.aspx

To ensure the use of technology within the learning process is inclusive, issues of access to and use of equipment need consideration at the design stage. While many students will have personal access to relevant technology such as smart phones, any developments that will require such access should be well publicised and consideration given to ensuring barriers, in particular financial and accessibility, are addressed prior to implementation.

The Business, Management, Accountancy and Finance, and Geography, Earth and Environmental Sciences subject guides provide examples of how technology has been used to diversify teaching methods.

Developing alternative exit routes

Students are accepted onto MEDEV programmes on the basis of their potential to acquire the skills, knowledge and attributes required for professional practice by the end of their training. The focused and prolonged nature of MEDEV education can make it difficult for students either no longer willing or able to continue on their programme. This may be because they have decided they no longer wish to qualify or practice in that particular profession, for academic reasons or influenced by a variety of other factors. An inclusive approach to curriculum design will ensure that:

— competence standards required for the programme are transparent from the outset;
— students have an alternative exit route – should it be required – to enable recognition of their achievements.

See the HEA's inclusion e-bulletin for further discussion of competence standards. www.heacademy.ac.uk/assets/York/documents/ ourwork/inclusion/ebulletin_1Competence_Standards.pdf