Designing an Integrated Biological Sciences and a Social Accountability Medical Curriculum

Helen Alice McMillan[2], Paul Orsmond[2], Remigio Zvauya[2]

Corresponding author: Dr Helen Alice McMillan H.A.McMillan@bham.ac.uk
Institution: 2. Birmingham University
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Abstract

The behavioural and social sciences are now universally included in undergraduate curricula in the UK and the General Medical Council sets guidance on the purpose of their inclusion. The literature however indicates that a divide exists between these 'medicine in society' topics and the biological sciences within the curriculum. This separation is seen both in terms of curricular time set aside for such topics, and the value placed on their inclusion by stakeholders. At the University of Birmingham, the Graduate Entry Course (GEC) programme has successfully integrated these topics into the undergraduate curriculum. The result is that our medical students learn, from early on in their career, that a working understanding of these topics is essential if they are to practice as holistic, social accountable doctors. The following paper presents and discusses year one of the graduate entry course, as a single case study, from which others may learn.

Keywords: Social Accountability, Integrated Curriculum, Medical Students, Social and Behavioural Sciences

Introduction

In recent years, there has been an increased recognition that medical students need to have greater awareness of diverse learning outside the "need to know" biological sciences. For example, medical students now need to have increased understanding of the complexity of patient illness and the intimate relationship that exists between the biological disease process and the social and behavioural influences on health and disease. They also need to be conscious of changes in doctor-patient relationships and be aware of medico-legal/ethical issues. This understanding has been augmented by the value that the GMC explicitly place on the learning of these so called 'nice to know' subjects (GMC, 2009; 2015). As Peters and Livia (2006) discuss, the General Medical Council (GMC) now places 'behavioural and social science on the same "need to know basis" as clinical and basic sciences'. These factors have shifted the emphasis for greater inclusion within the taught curriculum of the once considered "nice to know" behavioural and social sciences subjects. However, the reality as discussed by de Visser (2009), is that many
medical schools still appear to separate out the "need to know" biomedical sciences and the "nice to know" behavioural and social sciences. Even in seemingly more integrated medical curricula a disproportionately small amount of curricular space is dedicated to these subjects. Furthermore, this divide appears to be perpetuated by the influences of the hidden curriculum where a general disconnect between staff in the different faculties and a negative perception of the value of the social and behavioural sciences in medicine undermines their inclusion in undergraduate education (Litva & Peters 2008: Tabatabaei; Yazdani, & Sadeghi,. 2016).

Gonnella and Hojat (2012) saw the goal of those who practice medicine as 'to improve the physical, mental and social well-being of fellow human beings'. As such medicine has a social accountability which should be an integral feature of medical education. Social accountability as discussed by Woodland and Boelen (2012), places an obligation onto medical schools to direct their education towards the priority health concerns of the community and nation. This approach requires medical schools to consider the doctors’ performance as two separate components: that of content, for example doctors' knowledge and skill; and context (Gonnella & Hojat, 2012). This context stance requires medical schools to consider factors that influence patient outcomes such as, government regulation, collaboration of other health professional and patients’ culture and reward systems. Therefore, medical students, in terms of context learning, need to be aware of the inter-relationship that exists between a broad range of subjects, such as, public health, ethics, sociology and psychology, in order to understand the requirements of social accountability and subsequently to implement social accountability practices. As such, an integrated biopsychosocial model implemented inside a broad medical curriculum would seem suitable (Benbassat et al., 2003).

At Birmingham Medical School the graduate entry students learn, in an integrated fashion, that both biomedical sciences and the behavioural and social sciences are "need to know". This is how it is done.

Case study description

The Medicine Graduate Entry Course (GEC) at the University of Birmingham accepts approximately 40 life science graduates annually onto a 4-year MB ChB programme. This course runs an individualised programme of learning in the first year before students are fully integrated with students in year 3 of the 5-year MB ChB for clinical medicine studies. It is this first year of the GEC course which, unique in structure, offers students an excellent grounding from which they can pursue their medical practice in a holistic and socially accountable manner.

The medical curriculum at Birmingham Medical School is based on the Institute of Medicine (IOM) priority topic areas. The IOM recommendations address the concerns of social accountability and the learning of biological mechanisms. Whilst these priority areas are covered on both on the GEC programme and the 5-year MB ChB, they are implemented in a specific way in GEC due to the nature of the GEC curriculum design. Within their first year of study GEC students cover material equivalent to that contained within the initial two years of the 5-year MB ChB at the University of Birmingham. This material is covered in a number of specifically designed modules which encompass biological science and social accountability learning outcomes, the latter of which are referred to on our course as Medicine in Society (MIS). Early and regular exposure to clinical practice complements the students learning and a final required component is designed to bring together enhanced learning complexity by explicitly integrating aspects of the earlier modules to demonstrate the inter-relationship between the different states of health and disease.

A GEC student's week is divided into a number of key learning sessions. The core of the curriculum design is
Problem Based Learning (PBL) and students meet in groups of approximately 8 for 3 hours on a Tuesday and 2.5 hours on a Friday. Scenarios are given to student groups every Tuesday and students then proceed through a set process each week. Firstly unknown terms are isolated then key themes for the week identified. Students then proceed to create a mind map representing the groups’ existing knowledge on the topics before finally generating between 12 and 20 learning outcomes covering all aspects of the curriculum, to guide learning throughout the week. Each week a student chair is elected to help direct the group and a scribe to document discussions. A moderator or facilitator sits in with each group every week to support the students, ensure consistency of learning between groups and mediate group dynamics. In addition to the PBL meetings students are also given a limited series of lectures, which usually occur on Mondays and are designed to introduce and give an overview of broad topics. Furthermore, students are encouraged to attend weekly student-centred question and answer sessions with academic staff holding specialised knowledge in their field. These sessions are held on Monday afternoons and relate to the scenario from the previous week. They give an opportunity for students to ask for help on areas of learning that, despite self-directed learning and group discussion, they are still unclear about. To further integrate and augment learning, students have one day a week (a Thursday) in community based medicine (CBM) which introduces students to the world of clinical medicine and allows them to build competencies in communication and clinical skills. They also have regular small group contact on Wednesday afternoons with demonstrators from the anatomy department where they undertake a variety of learning opportunities including tutorials and prosectorium visits. Once during the year students are timetabled a hospital orientation day, where they spend a day shadowing a final year Medical student in the hospital and are encouraged not only to consider their role as a future doctor, but also, following discussions with patients, to reflect upon what it is like to be a patient on the ward.

Reflective practice and regular formative feedback is also of central importance to the GEC programme. Students’ receive ongoing group feedback during PBL sessions and individual moderator-student feedback occurs frequently during the year. Each student sees a moderator for feedback at the end of each module, after examinations and after a student has been chair. The aim of this is to guide future learning of curricular subjects, to support the personal development of the student during the year, and to reinforce learning. Engagement with MIS topics is explicitly discussed and social accountability topics are considered as part of the students’ academic, personal and professional development. The recent addition, during the first term, of a reflective essay has proven very successful from a MIS point of view. The task asks students to consider an interaction with a patient on the ward during their hospital orientation day and encourages them to contemplate what it is like to be the patient. In doing so students examine the issue of social accountability in the real world and can begin to make sense of their learning thus far.

Formative assessment, which happens in three separate stages during the course of the year, additionally ensures that adequate weight is given to the social and behavioural sciences.

Discussion

The GEC programmes’ explicit aims are to integrate MIS themed learning seamlessly into the curriculum in order to enable the students to develop a working understanding of social accountability by the time they enter the clinical years of study.

PBL scenarios, written as the stimulus for learning, are structured to allow students to explore biological and social accountability issues. Crucially, the PBL moderators – a mixture of both clinicians and non-clinicians - recognise the importance of the social accountability in terms of guidance for student discussion. They also maintain good working relationships with both biological science and MIS academic staff. In so doing, insights into social accountability issues, which include behavioural sciences such as psychology, are integrated into the learning
programme rather than being taught as isolated theories and concepts of the individual disciplines. This method is supported by evidence from the literature (Russell et al., 2004; Litva and Peters, 2008) and experientially, on this course, it enables rich and valuable discussion within the student PBL groups. The lectures, delivered by experienced academic faculty who are often research experts in their field, help to create an anchor from which the students can learn through self-directed and group learning and, whilst not always incorporated into PBL curricula, is a practice that is strongly encouraged in the literature (De Visser, 2009 and Benbassat et al., 2003). These staff, our ‘experts’, are also involved in the question and answer sessions where students can direct the session based on their individual and groups’ needs. This process also encourages thinking beyond that which can be conventionally found in textbooks and is of particular value in the MIS topics where the students are seeking to understand and make practical sense of the concepts discussed in the classroom.

Orsmond and Zvauya (2014) have shown that GEC students form a community of learners within their first year. As such, students look out from their community towards other members of different medical communities. This is particularly apparent when GEC students work with general practitioners and their anatomy demonstrators. The CBM clinical experience allows students to contextualise the learning that occurs in PBL in the real world. The PBL scenarios concern specific medical conditions which necessitate the engagement with aspects of social accountability that are encountered by students during their weekly CBM clinics. Here they are encouraged to talk with patients and experience the social accountability curriculum as a reality. Thus, in this, and in timetabling the early Hospital Orientation Day, the GEC curriculum design at Birmingham Medical School shows awareness of the benefits of early clinical experience both in learning development and role models (Dornan, et al., 2006; Littlewood et al., 2005). The value of this becomes especially evident when experiences from the clinics are often discussed in the PBL sessions, adding relevance to subsequent learning. These enriching experiences to the discussion often concern issues of social accountability.

**Conclusion**

Birmingham medical school has developed a GEC curriculum that allows the integration of the biomedical sciences and the social accountability curriculum in a "need to know" context. The social accountability agenda has been achieved by working closely with behavioural and social scientists in terms of lectures, small group teaching, expert sessions and examination preparation. The PBL scenarios have the social accountability themes weaved into their fabric and the moderators recognise the importance, of what we term, medicine in society. The early introduction to clinical experience allows students to recognise the social accountability agenda in practice. In taking this integrated approach to both the biomedical sciences and social accountability to facilitate medical student learning, GEC students at Birmingham Medical School recognise, at an early stage of their participation with the medical community, that professional medical practice must be understood in terms of the physical, mental and societal aspects.

**Take Home Messages**

- Behavioural and social sciences can be successfully integrated into the curriculum in early medical training.
- Early clinical exposure and frequent group discussion allows students the opportunity to make sense of their learning and to experience the social accountability themes as a reality.
- Staff involved in in the design of the curriculum and delivery must work together closely to ensure social accountability issues are addressed appropriately in the curriculum.
Notes On Contributors

Helen Alice McMillan (MBBS) is a PBL moderator on the Graduate Entry Programme and lecturer in the College of Dental and Medical Sciences, Birmingham University.

Paul Orsmond (BSc., MSc.) is PBL moderator on the Graduate Entry Programme, College of Dental and Medical Sciences, Birmingham University and lecturer at Staffordshire University.

Remigio Zvauya (PhD) is a PBL moderator, senior lecturer and year lead on the Graduate Entry Programme in the College of Dental and Medical Sciences, Birmingham University.

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Appendices

Declarations

The author has declared that there are no conflicts of interest.

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