Global health education
A transformative learning challenge in undergraduate medical education
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Learn from the mistakes of others. You can’t live long enough to make them all yourself.
Eleanor Roosevelt

Editor’s preamble
Transformative learning is a term coined by Jack Mezirow, who defined it as ‘the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience in order to guide future action’ (Mezirow 1996: 162). We can contrast instrumental learning and transformative learning as follows:

Instrumental learning is the acquisition of skills and knowledge (mastering tasks, problem solving, manipulating the environment – the ‘how’ and the ‘what’). In contrast, transformative learning is perspective transformation, a paradigm shift, whereby we critically examine our prior interpretations and assumptions to form new meaning – the ‘why’. This perspective transformation is achieved through (1) disorienting dilemmas, (2) critical reflection, (3) rational dialogue, and (4) action.¹

Raúl and Adrian discuss below how transformative learning has been used in a module for medical students and show how education can draw in influences from diverse directions in order to facilitate the challenging of ideas and preconceptions.

Introduction
In this chapter we reflect on the value of introducing transformative learning in an undergraduate module. This is illustrated by our experience of introducing innovative global health modules in England and the Republic of Ireland.

These modules were the result of partnerships between Skillshare International, a non-governmental organisation (NGO), and three medical schools. The partnerships led to the establishment of three modules in global health education, two in the UK
and one in the Republic of Ireland, which brought together the perspectives of an international development organisation, the academic expertise of the medical schools and the personal experience of professionals from different backgrounds, in health and development projects from Africa and Asia.

Our work contributed to the academic debate for teaching and learning, using new pedagogical approaches and fostering curriculum development for global health education. The programmes in each medical school had similar aims and learning outcomes and shared a pedagogical approach as problem-based learning, participatory and transformative learning techniques were deemed more appropriate for the themes and topics covered in our modules. However, they were structured in different formats according to the needs of the individual institutions. All aimed to give medical students opportunities to learn and reflect on their own views, attitudes and practices, as well as the contribution of their future career in their home country and overseas.

This chapter contrasts the value of an education paradigm based on concepts from sociology and anthropology, with more conventional ideas of teaching about biomedical and clinical science. It also brings new challenges for the evaluation of this type of educational intervention. We recognise that the conventional paradigm is essential for medical students to acquire the knowledge and skills to be good doctors. However, we argue that they will only gain the insight, attitudes and understanding to be globally competent physicians by using a transformative pedagogical approach.

Although we write from the perspective of educators of medical students, we believe that almost all of the issues and possible solutions we describe apply to the teaching of all healthcare professionals.

**Implementing global health and development courses**

In 2001 the University of Leicester Medical School and Skillshare International established a new programme for medical students who were interested in international development issues and their impact upon individuals and communities in developing countries. The new optional Health and Development Special Study Module (H&D SSM) opened in Autumn 2002. It consists of 42 taught hours in 12 half-day sessions and 84 hours of self-study and assessment writing. The success of the course has helped to build the capacity of the medical faculty to deliver global health education without further involvement of the international NGO.

In 2006 Skillshare International and Nottingham Medical School established the optional Global Health and Development Special Study Module (GH&D SSM) for medical students at the start of the fourth year of their studies, and it is organised as an intensive four-week course. As optional modules, these courses are only taken by around 10% of each year cohort.

As a result of these innovative programmes and to share best practice with other institutions, collaboration was established with the School of Medicine at Trinity College Dublin to deliver a one-week course, ‘Global Determinants of Health and Development’, which was delivered for the first time in February 2009. The success of this course led to a continuum course being offered until the present day. This was a significant
step forward in the development of global health education at the undergraduate level. It is the first extended course on global health to be compulsory for the whole student cohort. The course in Ireland has responded to the demand for a new workforce which meets the healthcare needs of individuals but also embraces the social dimension of medicine – in Ireland as well as the wider world – making resulting graduates a more sensitive and reflective health workforce for the population they will serve.

The orientation of all these courses recognised that in this century health systems are interdependent, their workforces are highly mobile, doctors and patients are more diverse than in previous generations and that there is a wider inequality in healthcare provisions. In all the courses the use of participatory approaches, problem based and transformative learning was used to generate dialogue, debate and stimulate thinking. The activities were led by NGO workers and academics with direct experience in the field.

**Orientation of global health education**

The model of global health education that illustrates this chapter draws from sociology and anthropology rather than the transmission of knowledge derived from biomedical and clinical science. These courses build on two schools of thought, one from the academic sector looking at global health, and the other from the international development sector looking at education in international development.

One of the key decisions was whether the course orientation was going to be ‘global health’ or ‘international health’. It was an important distinction to be made from the initial stages of planning the course. These terms are commonly used interchangeably; sometimes confused and contested. These are evolving fields of study and their theory and knowledge comes from a variety of disciplines. Consequently, there is no consensus on precise definitions. Global health education is widely rooted in social, political and economic paradigms applied to the analysis and further understanding of global determinants of health. This provides a deeper understanding of the causes of inequalities of healthcare provision. On the other hand, ‘international health’ encompasses practical interventions to manage diseases which have a global impact. We argue that ‘international health’ is dominated by the biomedical and clinical science oriented model.

The orientation of these courses was guided by the definition of global health proposed by Koplan *et al.* (2009). In that paper global health is defined as ‘an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide’. They explain further:

Global health has come to encompass more complex transactions between societies. Such societies recognise that the developed world does not have a monopoly on good ideas and search across cultures for better approaches to the prevention and treatment of common diseases, healthy environments, and more efficient food production and distribution. The preference for use of the term global health where international health might previously have been used runs parallel to a shift
in philosophy and attitude that emphasises the mutuality of real partnership, a pooling of experience and knowledge, and a two-way flow between developed and developing countries. Global health thus uses the resources, knowledge, and experience of diverse societies to address health challenges throughout the world. (Koplan et al. 2009: 1994–1995)

As these courses were implemented in partnership with an NGO, they were also designed to respond to development education principles, described in the European Consensus on Development:

Development Awareness fosters the full participation of all citizens in world-wide poverty eradication, and the fight against exclusion. It seeks to influence more just and sustainable economic, social, environmental, civil and political human rights based on national and international policies. (DEEEP 2004)

The aims, learning outcomes, themes and session topics were designed to contribute to global health and development education by emphasising the mutuality of learning from the contexts of both developed and developing countries.

The scope of global health within medical education

The scope of global health covers the analysis, reflection and discussion of issues emerging from the wider determinants of health. These are not limited by geographical, economic or political boundaries; they are influenced by individuals, communities and their immediate social context. These issues are, among others:

- national and international development;
- the role of international organisations such as the World Health Organisation (WHO), United Nations (UN), International Monetary Fund (IMF), World Bank (WB) and other international and local NGOs;
- relations between social context and the burden of diseases such as tuberculosis, malaria and HIV/AIDS;
- participatory approaches in resource-poor communities (including the relation between health and poverty);
- environmental changes due to human actions and the effect on health outcomes;
- access to health systems and services;
- access to medicines, drug development, deployment and delivery.

A common feature of these factors are social, economic and political issues that are beyond the direct control of medical settings and health workers; they determine the effectiveness of the medical interventions at individual, local and international levels. This helps students to contextualise the wider determinants of health, and the need to establish partnerships between resource-rich and resource-poor communities to
address such inequities. Without understanding of this context and the power relationships between richer and poorer communities, health professionals will be less effective. They will be unable to comprehend the reality and complexity of a patient who attends the local dispensary after a day of walking and leaving her livelihood unattended (Haq et al. 2000; Kumangai and Lypson 2009).

**Educational paradigms in global health education**

Global health education for medical students emerged from the recognition that doctors in the twenty-first century will practise in an interconnected world in which healthcare systems no longer operate in isolation. They are required to respond to similar challenges: infectious diseases with the capacity to spread around the globe very rapidly; lifestyles that produce epidemics of chronic illness and environmental degradation that reawakens the eternal threats to health from unclean water, poor nutrition and lack of shelter from the elements. Each country’s health system is competing with others for the best health professionals to provide care.

A traditional medical curriculum that only imparts biomedical and clinical knowledge and skills is limited in addressing these issues. In our case, the partnership between the NGO and academic institution produced innovative ways for students to learn, encouraged the use of new pedagogical approaches and transformative learning methodologies.

We give as an example of the difference in educational approach students learning about maternal and child health within the context of community participation. In the traditional curriculum students might be asked to assess the status of maternal and child health by reviewing existing reports, conducting an audit of vaccination in a health centre, organising a patient survey or attending mother and baby clinics. While these methods are appropriate, they may not reveal the hidden agendas and social status issues that are limiting access to care, which can include female illiteracy, disempowerment at home and in the community, social stratification and class. They may not identify whose voice is heard in the community. To unpack these issues role-play and simulation scenarios were used to expose students to the dynamics and agendas in play in different communities by asking them to take different roles and argue from the position they were given. In doing so, students established a dialogue and realised that for a woman to come forward, or for her voice to be heard in a community, she must feel safe and secure in doing so without confronting the current status quo. Similar simulation and role-play techniques were used to address issues on immunisation, access to medicines and infectious diseases.

Using problem-based learning techniques involved the use of case studies. For example, students in small groups were asked to propose a solution to the given problem of establishing child health clinics with limited resources. To ensure focus, the setting was a real town, providing background data. Each group was asked to present their proposal to the wider group from the perspective of different stakeholders: staff, patients and local health officials. The solutions were debated to find the best strategy.
In recent years a niche for global health at the undergraduate level has emerged in the UK. This new educational intervention was given impetus when the General Medical Council in the UK added the learning outcome *Discuss from a global perspective the determinants of health and disease and variations in healthcare delivery and medical practice* to the third edition of *Tomorrow’s Doctors* (GMC 2009: 16–17). *Tomorrow’s Doctors* set out the required learning outcomes that all UK graduates should achieve to become competent doctors.

In 1999 the Institute for International Medical Education (IIME) recommended minimum learning outcomes that medical students should demonstrate at graduation from any medical school in the world. The rationale for developing these was the pressure on the medical profession from constant, rapid changes from technological advance, cost containment and erosion of quality and equity in service provision. As a result the medical profession was, and remains, in danger of losing its humanist values. The IIME allocated these outcomes to seven domains. The two most relevant to global health education are *Population Health & Health Systems* and *Critical Thinking & Research* (IIME 2002).

### The need for transformative learning in medical education

During the second half of the twentieth century medical advances added to the notable improvement in health and longevity produced by clean water, sanitation and availability of food and shelter for the whole population, particularly in highly industrialised societies. Life span increased in all countries of the world, but the levels of inequality within and between countries also increased. While the main reason is the persistence of relative and absolute poverty, the ‘Inverse Care Law’ plays an important part (Hart 1971). This states that access to healthcare is least where the need is greatest. In contrast, distribution of healthcare resources according to market forces results in the ‘sale’ of unnecessary healthcare. On a global scale this means investment in ‘lifestyle’ medicines, such as drugs to combat obesity, while less is invested in the treatment of diseases affecting the poorest communities, such as malaria.

This growth of inequality in almost every country conflicts with the universally accepted ethical duty of health professionals to treat individuals equally. The need for health professionals to debate and deliberate options that better address the causes of inequity within society becomes inescapable. It has been recognised by a number of academics (Bloom 1998; Haq *et al.* 2000; Kumangai and Lypson 2009; Pruitt and Epping-Jordan 2005; Waitzin 1989) that advances in medical care have been enormous and beneficial. However, the training of the health workforce to respond to the changing social context and growing inequalities has not kept pace. Medical education needs to move forward from a model of medical education dominated by the application of biomedical knowledge, towards a more holistic model of undergraduate teaching that brings the social dimension to the core of the curriculum. This will necessitate input from different disciplines, for example anthropology and political economy. In addition, undergraduate medical education needs to recognise that effective healthcare can only be provided by multidisciplinary teams using a constructive
problem-solving approach to address the determinants of disease as well as providing treatments.

**Critical thinking through transformative learning in medical education**

Within medical education, global health education will benefit from innovative pedagogical approaches that support both the biomedical, scientific and the humanistic, socio-anthropological paradigm. This demands a shift in balance from a dominant biomedical or ‘andragogy’ model of teaching and learning in medical education, towards transformative learning approaches that support a high level of critical thinking in medical graduates. This will encourage graduates to develop the capacity to reflect, and to use evidence from research to modify their own practice.

The andragogy theory applies to medical education and it assumes that medical students, as other adult learners:

- are independent and self-directed;
- have various degrees of experience;
- integrate learning as demanded by their everyday life;
- are interested in an immediate problem-centred approach;
- are motivated by internal drives rather than external.

While this is true and has responded well to the biomedical model of medical education, one of the key challenges is to implement appropriate educational interventions that encourage a dynamic process in learning. This is particularly relevant when medical education is trying to foster ‘critical evaluation of existing knowledge’, a system-thinking approach to medicine that helps the graduate to continually improve and remain competent. This challenge highlights the need for more transformative learning approaches in medical education (Abela 2009; Bloom 1988; Brendel 2007).

As oppose to andragogy, ‘transformative learning’ is a development theory where ‘learning is understood as the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience in order to guide a future action’ (Mezirow 1996: 162 quoted in Taylor 2007: 173). Transformative learning is grounded in different schools of thought, the critical social theory from Frankfurt, Paulo Freire’s (1985) critical theory and in psychology studies from Boyd and Meyers (1988), among others. Critical reflection is an increasingly important learning outcome in medical education, to facilitate the critical evaluation of existing knowledge. To constantly improve, to remain competent in whatever social context the health worker is based, then it is important to address the balance between andragogy and transformative learning approaches in undergraduate medical education.

The underlying assumption is that given the nature of global health education, these courses would achieve more if their aims and objectives are delivered by transformative learning approaches or the combination of both – andragogy and transformative learning – within their plenary sessions and workshops.
Challenges for assessing transformative learning

Using transformative approaches brings a new challenge to evaluation of learning. How are we going to evaluate a process, using prior knowledge to construe a revised knowledge to guide a future action? The educational intervention that illustrates this chapter involves an interaction with facts, situations, ethical dilemmas, polices and ideological stand points. The learning is not measurable by quantitative means or by exam results. It takes place by a process of discussion, dialogue and bouncing of ideas between participants in these courses. If the courses are successful in producing transformative learning as well as increasing knowledge, we expect this to be reflected in attitude change among the participants.

Attitude has been defined as:

A learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object.

(Fishbein and Ajzen 1975 cited in Olthuis and Dekkers 2003: 929)

We assumed that attitudes towards issues in global health and international development would change as the result of opportunities to acquire knowledge; openly confront and exchange ideas between peers and with ‘experts in the field’; reflect upon issues that affect local and other communities. The courses used a range of educational tools such as open discussion, case studies and problem-based learning, simulations, debates, role-play, expert input in plenary and student presentations of their research into topics. A necessary prerequisite for attitude change is to change knowledge. However, this is not sufficient in itself. For the underlying ‘predisposition to respond’ to change the knowledge has to be relevant for the individual, who must interact with it and develop it further using critical reflection. Only then can we expect future actions to be different due to attitude change.

A key challenge faced in this educational intervention was to establish the nature and degree of attitude change in the students who undertook the courses. A common approach is to use Likert items to measure agreement with statements derived from the learning objectives of the course. There are a number of problems with using this method. Respondents tend to respond in a way that they believe is socially acceptable and allows them to be acquiescent in agreeing with the views of the teacher. Likert items are prone to another bias of central tendency where respondents ‘play safe’ by choosing the middle option. We developed an innovative method of analysing and presenting group responses to minimise these biases, which we have described as the ‘change step’ method (Hastings et al. 2012). This presents students’ responses before and after the course in a series of histograms. Important attitude changes by individuals within the group are revealed, which are concealed if responses are treated as numerical averages.

Despite this innovative approach we recognise its limitation in measuring a complex phenomenon such as the changes in attitudes held by a large number of individuals. A huge effort has been made to research the best methods of measuring knowledge
and testing skills of healthcare students as they progress through their courses. After a period of rapid change there is consensus on the best ways to do this. Much less research has been done to evaluate transformative learning and to measure whether it has the impact for which its proponents are aiming.

**Conclusion**

There are many challenges in advancing teaching and learning in medical education. New doctors require sound clinical knowledge, confident clinical skills, individual dispositions to deliver high-quality medical care and a deep understanding of the individual and the context in which medical care takes place. In response, undergraduate teaching has moved forward and has been as innovative as the advances in medicine itself. However, to address increasing health inequality, emphasis needs to be given to a learning process that equips future health professionals to use their existing knowledge and experience to guide future actions that address inequities in health.

The global health courses that illustrate this chapter faced difficulties from competing paradigms in medical education, course orientation, scope and evaluation of learning. These challenges are also compounded by shortage of teachers with the professional skills, experience and personal disposition to teach this topic. The belief that global health education should be central in the learning of all students remains a minority view. The validity and relevance of transformative learning in this field is still contentious.

In the wider context of education, we argue that any professional training (teaching, engineering, law, etc.) faces similar dilemmas as the one we presented here: teaching and learning that transform current practices for better, and has an impact in the individual and social wellbeing of people served by the professionals concerned.

**Note**

1 From https://sites.google.com/site/transformativelearning/elements-of-the-theory-1

**References**


General Medical Council (2009) Tomorrow’s Doctors, GMC.