

Podiumsdiskussion

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Over the last century, medical knowledge has grown rapidly: The Merck manual's first edition (1899) is a paperback with some hundred pages only whilst the 18th edition (2006) is an encyclopaedia covering almost 3,000 pages, an incredible amount of knowledge and facts!

“Education is about filling vessels and lighting fires. In relation to medical education, we have filled the vessels so full, that when the student picks it up it spills over and puts the fire out.”¹ Unfortunately, the 2003 reform of undergraduate medical education in Germany has been another step towards overfilling the vessels: The clinical phase of three years before the beginning of the final year includes more than 30 subjects and each of them needs to be assessed in an exam and grades are awarded to the students.² It is needless to mention that the psychometric values of these exams are often more than questionable. The “National curriculum” for medicine that Nippert just mentioned, to me appears like a syllabus rather than a curriculum and looks like the ICD-10 catalogue of diseases.³

Above all, assessment drives students' learning! In this aspect, the state examinations of the German IMPP institute can also serve as a bad example: Both of them – after the second year (the preclinical phase) and the final year (the practical year) – are compiled of 320 multiple-choice questions each.³ As early as 1990, Miller has developed his framework of assessment of clinical skills, known as “Miller's triangle”.⁴ Since then, many authors have shown that MCQs can only assess the lowest level of knowing and – if designed properly – the following “to know how” level. In Germany, the MCQs tend to assess very detailed factual knowledge and thus the students are only training to recall these facts in order to pass the exam.

Therefore we need to downsize the curriculum: the traditional accumulation of knowledge does not work anymore in modern science. In 1999 Harden et al. have shown in the AMEE Education Guides No. 14 on outcome-based education how a modern approach, based on modern adult learning theory could look like.^{5 6 7 8 9} Comprehensive lists of learning or instructional objectives in the past have proven to be too complex to handle and too difficult to keep up-to-date.¹⁰ Learning outcomes on the other hand can be clearly defined and are easier to identify with. These learning outcomes should be few in number, self-evident, and easily understood.¹¹

Various outcome-based curricula have been developed since.^{12 13 14 15 16 17} An international consensus of an outcome-based core curriculum as suggested by the International Federation of Medical Students' Associations (IFMSA) and the European Medical Students' Association (EMSA) in their “European Core Curriculum” or the MEDINE-Network's TUNING task force is needed to facilitate undergraduate mobility.^{12 16} Even within Germany, mobility is almost impossible after the 2003 reform; even when trying to move to a university some kilometres away means to need supplementary studies.

An international core curriculum could be also used as framework for any National curriculum in Europe. Countries and faculties could still preserve their unique profile and attract students.

Summing up, the idea of a spiral curriculum could merge all the necessities medical education is facing today: it can combine outcome-based education, integrated education and a two-cycle structure such as the Bachelor and Master structure, it can enhance mobility whilst still leaving room for national or local needs and it can help medical education in Germany fit the needs of tomorrow's healthcare!^{18 19 20}

¹ Dent J.A., Harden R.M. (Eds.). A Practical Guide for Medical Teachers, 2nd edition (2005), pp. 171-183

² Licensing Regulation for Doctors – Approbationsordnung (ÄAppO), Federal Ministry for Health (2002). Available online:

http://www.bmg.bund.de/cln_110/nn_1168248/SharedDocs/Downloads/DE/GV/GT/Gesundheitsberufe/verordnungen/Approbationsordnung-fue-Aerzte_englisch.templateId=raw.property=publicationFile.pdf/Approbationsordnung-fue-Aerzte_englisch.pdf

(accessed 14 October 2008).

³ Gegenstandskatalog für den schriftlichen Teil des Zweiten Abschnitts der Ärztlichen Prüfung (ÄAppO 2002 IMPP-GK 2). Institut für medizinische und pharmazeutische Prüfungsfragen (IMPP). Available online: <http://www.impp.de/pdf/gk2neu.pdf> (accessed 14 October 2008).

⁴ Miller G.E. (1990), The Assessment of Clinical Skills/Competence/Performance. *Academic Medicine* 65:S63-67

⁵ Harden R.M., Crosby J.R., Davis M.H. (1999). AMEE Guide No. 14: Outcome-based education: Part 1 – An introduction to outcome-based education. *Medical Teacher* 21:7-14

⁶ Smith S.R., Dollase R. (1999). AMEE Guide No. 14: Outcome-based education: Part 2 – Planning, implementing and evaluating a competency-based curriculum. *Medical Teacher* 21:15-22

⁷ Friedman M. (1999). AMEE Guide No. 14: Outcome-based education: Part 3 – Assessment in outcome-based education. *Medical Teacher* 21:23-25

⁸ Ross N., Davies D. (1999). AMEE Guide No. 14: Outcome-based education: Part 4 – Outcome-based learning and the electronic curriculum at Birmingham Medical School. *Medical Teacher* 21:26-31

⁹ Harden R.M., Crosby J.R., Davis M.H., Friedman M. (1999). AMEE Guide No. 14: Outcome-based education: Part 5 – From competency to meta-competency: a model for the specification of learning outcomes. *Medical Teacher* 21:546-552

¹⁰ Harden R.M. (2002). Learning outcomes and instructional objectives: is there a difference? *Medical Teacher* 24:151-155

¹¹ Dent J.A., Harden R.M. (Eds.). A Practical Guide for Medical Teachers, 2nd edition (2005), pp. 124-33; Elsevier Ltd.

¹² Hilgers J., de Roos P. (2007). European Core Curriculum – the Students' Perspective, Bristol, UK, 10 July 2006. *Medical Teacher* 29:270-275

¹³ Harden R.M. (2007). Outcome-Based Education: the future is today. *Medical Teacher* 29:625-629

¹⁴ General Medical Council (2002). Tomorrow's Doctors. Available online: http://www.gmc-uk.org/education/undergraduate/undergraduate_policy/tomorrows_doctors.asp (accessed 14 October 2008).

¹⁵ Simpson J.G. et al. (2002). The Scottish doctor – learning outcomes for the medical undergraduate in Scotland: a foundation for competent and reflective practitioners. *Medical Teacher* 24:136-143

¹⁶ Cumming A., Ross M. (Eds., 2008). Competences of European Medical Graduates. Available online: <http://www.bristol.ac.uk/medicine/docs/competences.pdf> (accessed 14 October 2008).

¹⁷ Frank J.R., Danoff D. (2007). The CanMEDS initiative: implementing an outcome-based framework of physician competences. *Medical Teacher* 29:642-647

¹⁸ Dowding T.J. (1993). The application of a spiral curriculum model to technical training curricula. *Educational Technology*, 33:18-28

¹⁹ Harden R.M., Stamper N. (1999). What is a spiral curriculum? *Medical Teacher* 21:141-143

²⁰ Harden R.M., Davis M.H., Crosby J.R. (1997). The new Dundee medical curriculum: a whole that is greater than the sum of the parts. *Medical Education* 31:264-271