

Assuring and maintaining quality in clinical education

Clinical teachers need to evaluate the quality and effectiveness of their teaching. Evaluation of teaching and learning generally occurs within quality assurance frameworks that have common features. Understanding quality assurance systems and evaluation methods will help clinical teachers to improve the student learning experience.

This article discusses how quality assurance systems used in medical and health professions' education function within an overall quality improvement agenda and introduces the most common tools used in the evaluation of teaching and learning.

Introduction

Higher and professional education in the western world has undergone rapid change. The expansion of student numbers, widening diversity and opening access, the impact of e-learning systems that facilitate distance learning, and increasing recognition of the importance of workplace learning have led to concerns over maintaining and enhancing educational quality across a diverse sector.

Addressing such concerns has led all establishments with educational missions, from schools to universities as well as institutions such as Royal colleges and post-graduate deaneries, to place greater emphasis on demonstrating:

- Quality improvement
- Accountability for spending public money
- Transparency of processes involving admissions, teaching and assessment
- The specification and achievement of competencies and outcomes
- Early identification and remediation of 'failing' students or practitioners.

The 'quality agenda' in clinical education has recently seen movement on a number of fronts towards explicit standard-setting,

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evidence-based education, metrics and indicators to measure continuous improvement, and the establishment of structures and processes that enable self-governance and monitoring. The quality agenda therefore impacts on all aspects of education at all levels from funding and regulatory bodies, through to educational providers and ultimately to teachers and learners.

What is quality?

'Quality' has been described in various ways in industry and in other areas such as higher education. A useful description is that provided by Harvey and Green (1993) (Figure 1).

Quality assurance refers to the policies, processes and actions through which quality is maintained, developed, monitored

and demonstrated (McKimm, 2009). The way in which quality is perceived has implications both for the way in which systems are set up and how quality is measured, including defining standards, performance criteria or learning outcomes.

Evaluation

A key element of quality assurance in education is evaluation (Figure 2).

Ramsden (1992) describes evaluation as: 'a way of understanding the effects of our teaching on students' learning. It implies collecting information about our work, interpreting the information and making judgements about which actions we should take to improve practice ... evaluation is an analytical process that is critical to good teaching'.

Figure 1. Defining quality. From Harvey and Green (1993).

As exceptional or excellent – quality is seen as something special or distinctive, demonstrating the highest academic standards or conversely, meeting a threshold standard

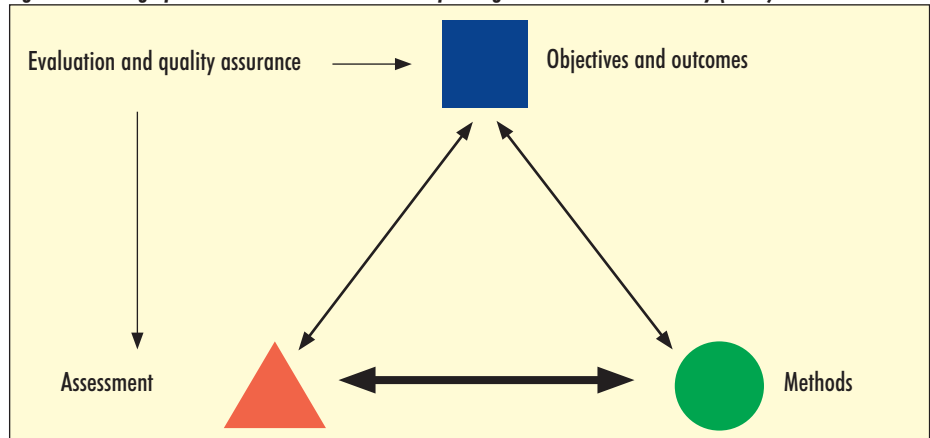
As perfection – here quality represents consistent or flawless outcomes. This 'democratises' the notion of quality, suggesting that if consistency can be achieved then quality can be attained by all

As fitness for purpose – in terms of fulfilling requirements or needs. In education, this view is usually based on the ability of an institution to fulfil its mission or of a programme to fulfil its aims. Quality here relates to the extent to which a product or service fits its purpose

As value for money – funding bodies and students increasingly expect a value for money approach. They want to know that the same outcome could not be achieved at a lower cost or that it is not possible to achieve a better outcome at the same cost

As transformation or enhancement – this view sees quality in terms of change from one state to another. In education, transformation refers to both the enhancement (value-added) and empowerment of students

Figure 2. Linking up the elements: the educational paradigm. From London Deanery (2008).



Kirkpatrick (1994) suggests that evaluation should be carried out at four levels: reaction (or satisfaction) with the learning process, learning (of knowledge and skills), behaviour or capability to perform skills, and results, impact, outcomes or transfer of learning to the workplace. Organizations are usually good at gathering information from and about students and programmes at the lower levels of evaluation but tend to be much less effective in using it to enhance the quality of their education provision.

Learners also commonly complain that nothing seems to change as a result of their feedback. This leads students to become resistant to exercises designed to elicit feedback, providing misleading data or refusing to participate. Teachers need to demonstrate and explain what is going to change as a result and also what is not going to change.

The quality assurance cycle

One of the outcomes of the quality movement has been the development of a specialized bureaucracy to ensure smooth operation of (often complex) quality systems including apparatuses for audit and accountability. Quality assurance systems at system, organizational or individual level typically operate within a cycle (Figure 3).

Quality assurance agencies expect staff at all levels in institutions (including classroom and clinical teachers) to gather data that allow them to demonstrate these steps

and the manner in which each step affects and feeds into the next.

Key features of the quality assurance process

Regardless of the agency or the object of scrutiny, there is a reasonably common approach to reviews, be they audit, approval or accreditation. The key features of quality assurance include:

- Self evaluation – usually through a review report in which the institution provides a self-assessment of its activities relating to the scope of the review
- External expert review conducted by an autonomous agency – usually involving documentary scrutiny and a visit by reviewers to the institution
- The public report – with commentary and recommendations
- Benchmarking – periodic reviews by the agency across the sector to identify common themes and issues.

While most review and evaluation systems are developed on the basis of promoting ongoing improvement, review systems need to be robust enough to stop underperforming institutions, subjects or programmes from receiving monies from governments or other funders or from taking students.

Systems of quality assurance in medical education

Health professional education occurs in a range of contexts, carried out by a variety of institutions and professional bodies.

The locus of control in these areas depends on whether the health professional is a student, trainee or independent practitioner. Although each health-care profession has its own unique set of educational structures and processes, there are similarities across the disciplines.

The undergraduate context

Students preparing for professional registration are generally enrolled in university programmes which, although relying on practicing clinicians for much of the teaching, remain under the control of universities and through them the agencies that have a mandate for audit. These agencies are primarily concerned with assuring governments that taxpayers are getting value for money and that graduates are fit for purpose.

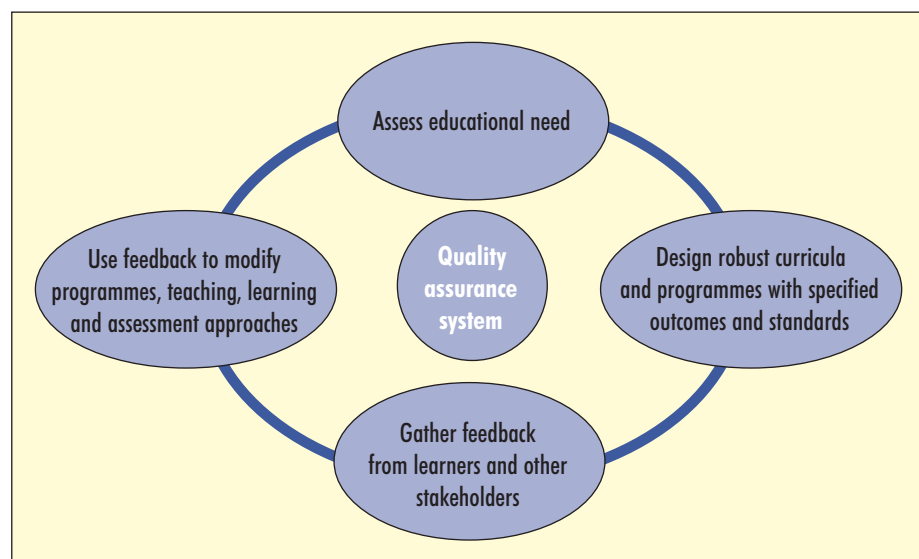
In the UK, undergraduate medical education is funded by the Higher Education Funding Councils and the Department of Health (to support clinical placements). Quality assurance is carried out by the Quality Assurance Agency and by the Department of Health through monitoring of funding streams that support clinical education. The Quality Assurance Agency is an independent body working across all higher education provision under contract from the Higher Education Funding Councils.

Professional and statutory bodies also have a role in the approval and accreditation of undergraduate programmes offered by universities to assure fitness for purpose of graduates. The General Medical Council manages this through the Quality Assurance of Basic Medical Education process (General Medical Council, 2009). These mechanisms assure professional bodies that programmes meet defined 'threshold' standards in terms of curriculum outcomes and delivery methods and that the provider institution has resources, systems and governance arrangements to ensure appropriate delivery of the approved programme. Initial approval and accreditation is followed up with a cycle of reviews and audits.

The postgraduate context

In the UK, the Department of Health is responsible for specifying the curriculum for foundation trainees and medical Royal colleges are responsible for determining

Figure 3. The quality assurance cycle.



the curricula, carrying out assessments for trainees in various specialities, revalidation and professional development. The responsibility for ensuring that the educational experience of trainees meets quality standards falls to the General Medical Council (which took on this responsibility when the Postgraduate Medical Education and Training Board merged with the General Medical Council in April 2010). Regional deaneries carry out quality monitoring and evaluation of educational organizations in their area.

Continuing professional development and revalidation

In terms of continuing professional development and revalidation, quality assurance processes are influenced by a number of policy shifts. These include further formalizing revalidation, recertification and licensing (quality assured by the General Medical Council and Royal colleges), a shift towards specification of competencies at all levels, a greater emphasis on educational and clinical supervision and formalizing staff and educational development (Swanwick and McKimm, 2010). In response to these shifts, new professional standards frameworks for teachers and supervisors are being introduced, adding another layer to the quality assurance processes (Postgraduate Medical Education and Training Board, 2008; Academy of Medical Educators, 2009).

The role of the clinical teacher

Although many organizations have central or departmental quality units or groups with a responsibility for ensuring that data are gathered, reports are submitted and reviews are carried out, the individual teacher plays a key role in assuring and improving quality. The professionalization of medical education places increasing scrutiny on all teachers and raises expectation about them. Review exercises are based on an expectation that individual teachers build quality assurance and evaluation processes into their own teaching practice. In particular they are concerned with the extent to which learning outcomes are aligned with teaching and learning methods, assessment methods and evaluation (Biggs, 1996), and the ways in which teachers act on misalignment in a continual review cycle (*Figure 2*).

Learners are at the heart of any educational review cycle. Gathering information about learners – their levels of satisfaction, engagement in learning and achievement of agreed learning outcomes or objectives – is the foundation of all quality systems. These data provide the best information upon which a clinical teacher might base his or her reflections on the need for and means of improving the alignment of outcomes, methods and assessment.

A good teacher needs to be in a position to gather information and to respond to it. In addition he/she needs to maintain the sort of records that will allow him/her to assure organizations and external agencies that he/she is gathering robust information and that the information is used to constantly scrutinize his/her assumptions about student learning.

Gathering and using feedback

One of the key elements of any quality assurance system is ensuring that the data are collated efficiently into a form which can be analysed and that they are presented appropriately. In order to achieve this we need to consider the most appropriate sorts of data.

Hounsell (2009) suggests that data should be gathered from a range of sources including:

- Feedback from students
- Self-generated feedback, e.g. gathered from audio or video observation
- Feedback from colleagues, e.g. peer evaluation
- Incidental feedback, e.g. attendance patterns, take up of options, attentiveness.

Gathering evaluative data from students plays an important role in tracking student satisfaction and engagement over time and can be effective at course, programme and institutional level. The majority of clinical teachers will be involved in formally evaluating learning and constantly gauge the progress learners are making and adjust their approaches to enhance this. For example, skillfully asking questions of learners to ascertain how much they have learned or areas of confusion gives the teacher the data he or she needs to alter approaches to teaching or lesson content (Morris, 2009). This reflective approach is a hallmark of excellent teaching which does not lend itself to formal systematization other than

through peer review and reflective portfolios maintained for professional development purposes.

In addition, other routinely held institutional data on assessment performance, admissions information or graduate employment may provide useful feedback on the quality and relevance of education.

The quality assurance ‘tool’ most commonly used at classroom level is the student feedback questionnaire, this typically considers either student satisfaction or learner engagement with the learning process. Satisfaction surveys are typically designed to gather data from learners about courses or teachers. Questionnaires designed to gather both quantitative and qualitative data tend to be the most common method of gathering this information. Student or trainee satisfaction data provides information to teachers and institutions about the way students feel about the learning processes in which they are participating. Such systems may be applied nationally. In the UK, the National Student Survey gathers information about all students in higher education and the Postgraduate Medical Education and Training Board carries out national training surveys of all medical trainees.

Satisfaction feedback is often criticized by those who believe that it emphasizes the wrong things if learning is the goal: a learner who is ‘satisfied’ or ‘happy’ still may not be learning. Student engagement questionnaires aim to ascertain the extent to which learning activities stimulate students to become engaged in educationally purposeful activities. Much work has been done by international agencies and consortia in distilling information. For example surveys developed in the US (the National Survey of Student Engagement – www.nsse.iub.edu) and Australasia (the Australasian Survey of Student Engagement – <http://ausse.acer.edu.au/>) provide information about the level of student engagement prompted by teaching.

A frequent criticism of feedback questionnaires is that they tend, because of the complexity of their design and administration, to be used at the end of the course in a form of ‘summative’ evaluation. Teachers cannot use the data to modify their approach to teaching or the emphasis of the course to benefit the learners directly, instead the benefit tends to be for future

learners. Students can become disenchanted with such systems as it is very hard to demonstrate that their feedback results in improvements. Also, because many of the data gathered from these exercises are quantitative, relatively large sample sizes are required to draw meaningful conclusions. For a reflective educator working with small cohorts of learners or seeking to make improvements on a day-to-day basis, this type of survey has reduced efficacy.

Many other techniques can be used to systematically gather learner feedback so as to make timely changes to teaching. Examples include small group instructional diagnosis (a facilitated small group discussion to provide feedback from learners to the teacher; Floren, 2002) and the 'one-minute paper' (Angelo and Cross, 1993) which can provide teachers with timely post-session information about what is working or not working for students.

Conclusions

Assuring and maintaining quality in clinical education is a complex process involving multiple agencies, institutions and individuals. Policy and practice agendas in education and health emphasize the need for continuous monitoring, review and evaluation of all processes from management systems through to day to day teaching activities. Clinical teachers may be involved in a range of data gathering and evaluation activities and play a central role

in gathering and using feedback from learners, peers and others to improve their teaching. The reflective teacher also uses opportunities for self-reflection and review to improve the quality of learning and teaching. **BJHM**

Conflict of interest: Professor J McKimm was commissioned by the London Deanery to lead on the development of the suite of e-learning modules from which these articles have been derived; Dr Barrow: none.

Academy of Medical Educators (2009) *Professional Standards Framework*. Academy of Medical Educators, London

Angelo TA, Cross KP (1993) *Classroom Assessment Techniques: A Handbook for College Teachers*. 2nd edn. Jossey-Bass, San Francisco, CA

Biggs J (1996) Enhancing learning through constructive alignment. *Higher Education* **32**: 347–64

Floren G (2002) Evaluating Teaching through SGID. www.miracosta.edu/home/gfloren/sgid.htm (accessed 24 March 2010)

General Medical Council (2009) *Overview of the QABME programme*. General Medical Council, London (www.gmc-uk.org/education/undergraduate/qabme_programme.asp accessed 17 March 2010)

Harvey L, Green D (1993) Defining quality. *Assessment and Evaluation in Higher Education* **18**(1): 9–34

Hounsell D (2009) Evaluating courses and teaching. In: Fry H, Ketteridge S, Marshall S, eds. *A handbook for teaching and learning in higher education: enhancing academic practice*. 3rd edn. Routledge, London: 198–211

Kirkpatrick DL (1994) *Evaluating Training Programs*. Berrett-Koehler Publishers, Inc, San Francisco

London Deanery (2008) The educational paradigm. www.faculty.londondeanery.ac.uk/e-learning/setting-learning-objectives/the-educational-paradigm (accessed 15 May 2009)

McKimm J (2009) Quality, standards and enhancement. In: Fry H, Ketteridge S, Marshall S, eds. *A handbook for teaching and learning in higher education: enhancing academic practice*. 3rd edn. Routledge, London: 186–97

Morris C (2009) Facilitating learning in the workplace. *Br J Hosp Med* **70**(1): 48–50

Postgraduate Medical Education and Training Board (2008) *Educating Tomorrow's Doctors - Future models of medical training: medical workforce shape and trainee expectations*. Postgraduate Medical Education and Training Board, London

Quality Assurance Agency (2002) *Subject Benchmark Statements: Academic Standards, Medicine*. Quality Assurance Agency, Gloucester (www.qaa.ac.uk/academicinfrastructure/benchmark/honours/medicine.asp accessed 26 February 2010)

Ramsden P (1992) *Learning to Teach in Higher Education*. 2nd edn. Routledge, London

Swanwick T, McKimm J (2010) Professional development of medical educators. *Br J Hosp Med* **71**(3): 48–52

KEY POINTS

- Quality assurance and evaluation activities are key to improving learning and teaching
- Student feedback is central to improving quality, but is not the only method or indicator
- Teachers can use a mix of formal survey questionnaires and informal feedback to improve teaching
- Evaluation is part of the 'plan – do – reflect – review' cycle of the reflective practitioner

London Deanery



This series of articles for clinical teachers was originally commissioned as a suite of e-learning modules for the London Deanery. Both the series and e-learning modules were designed and edited by Judy McKimm and Tim Swanwick.

The London Deanery e-learning modules for clinical teachers are open access and available at www.londondeanery.ac.uk/facultydevelopment

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