

Mainstreaming quality and safety: a reformulation of quality and safety education for health professions students

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ABSTRACT

The urgent need to expand the ability of health professionals to improve the quality and safety of patient care in the USA has been well documented. Yet the current methods of teaching quality and safety to health professionals are inadequate for the task. To the extent that quality and safety are addressed at all, they are taught using pedagogies with a narrow focus on content transmission, didactic sessions that are spatially and temporally distant from clinical work, and quality and safety projects segregated from the provision of actual patient care. In this article an argument for a transformative reorientation in quality and safety education for health professions is made. This transformation will require new pedagogies in which a) quality improvement is an integral part of all clinical encounters, b) health professions students and their clinical teachers become co-learners working together to improve patient outcomes and systems of care, c) improvement work is envisioned as the interdependent collaboration of a set of professionals with different backgrounds and perspectives skilfully optimising their work processes for the benefit of patients, and d) assessment in health professions education focuses on not just individual performance but also how the care team's patients fared and how the systems of care were improved.

The current methods of teaching quality and safety to health professionals are inadequate for the task. To the extent that quality and safety are addressed at all, traditional pedagogies are used, involving a narrow focus on content transmission from experts to neophytes, didactic sessions spatially and temporally distant from clinical work, and a linear approach to applying content in the form of quality and safety projects segregated from the provision of actual patient care. As is often the case when experts teach using traditional pedagogies, students' learning of specific content and its (acontextual)

application is appraised by quizzing learners, using questions that the expert knows, or believes she knows, the answer to. In response, we propose a transformative reorientation in which these traditions are challenged and new pedagogies enacted that mainstream quality and safety education for all health professions students.

TEACHING QUALITY AND SAFETY: CURRENT LIMITATIONS

The urgent need to expand the ability of health professionals to improve the quality and safety of patient care in the USA has been well documented. In this context, the predominant use of traditional pedagogies has a number of counterproductive consequences. First, the reliance on identified experts as teachers imposes a significant constraint because the cadre of health and safety experts is currently quite small. Second, the work of improving quality and safety, something a few professionals habitually do, is artificially differentiated and separated from clinical work, something everyone does. Third, frontline clinical teachers are excluded from safety and quality improvement initiatives, do not have their skills enhanced and, thus do not reinforce (and may unknowingly subvert), the teaching of the quality and safety experts. Finally, and perhaps most importantly, the emphasis on interrogating learners, a practice that has been described as the use of 'false questions',¹ can lead beginners to conclude that every question they encounter has a known and uncontested answer. This hidden message is problematic across healthcare, but is especially troublesome in an emerging discipline like quality and safety.



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A transformative reorientation in quality and safety education for health professions students has four critical features. First, quality improvement is part and parcel of all clinical encounters and is not treated as something different and separate from taking care of patients. Second, health professions students and their clinical teachers are co-learners, working together, along with patients and their families, to improve clinical outcomes and systems of care. Third, quality and safety improvement is envisioned as resulting not so much from a body of knowledge and set of skills possessed by individuals, but from the interdependent collaboration of a set of professionals with different backgrounds and perspectives skilfully modifying their work environment and optimising their work processes for the benefit of patients. Finally, assessment focuses less on what individual learners know and can do and more on how the care team's patients fared and how the systems of care were improved. In the rest of this paper, we explore these critical features and their implications.

QUALITY IMPROVEMENT AND SAFETY ENHANCEMENT AS PART OF CLINICAL WORK

'Learning how to do quality improvement and actually carrying out quality improvement are essentially one and the same; both are special forms of experiential learning.'²

Quality improvement and the enhancement of safety must be brought into the mainstream of clinical work. Some discussions of the 'quality chasm' imply that it can be eliminated and, once that is accomplished, we can move on to other things. This is untrue; healthcare can never be made error free or of perfect quality. Even if every safety and quality initiative currently contemplated were implemented and every implementation completely successful, we would still work in a field characterised by the necessity of taking action with incomplete information in highly dynamic and underdetermined situations.³ This inherent difficulty has been called a constitutive problem of the field.⁴ The constitutive problem of healthcare delivery (ie, we do not achieve a perfect state of health for all, at a reasonable cost or with an equitable distribution of resources) serves as the foundation for a conception of health professions education as 'field-building'. Thus the goal of health professions education should be to prepare all workers as 'improvers'.⁴ Learners focus not only on the individual patient in front of them but also on the systems of care that are the context for teacher–learner–patient–family interaction. As the airline industry has done, we must convert the field of healthcare to one in which everyone involved thinks about quality and safety all the time, whether they work in the outpatient clinic,

medical–surgical nursing unit, inpatient pharmacy or ICU. The improvement of safety and quality must be treated as an integral part of both the work and learning of all health professionals.

TEACHER AND STUDENT AS CO-LEARNERS—A NEW PEDAGOGY

The need for rapid improvement in the quality and safety of healthcare delivery around the world is immediate,⁵ yet efforts to transform the preparation of health professionals are stymied by faculty's limited expertise in both a) quality and safety science, and b) new pedagogies that can capitalise on their emerging competence. This situation requires that the challenges of developing faculty-experts in quality and safety and attending to the formation of the next generation of providers occur simultaneously. Pedagogies that make co-learning a central aspect of the educational experience hold great promise for addressing these co-occurring challenges. Co-learning, defined here as teachers, students, clinicians, patients and families learning together how care can be improved, interrupts the traditional, linear model of health professions education that separates objectives, content, method and evaluation.^{6 7}

In traditional teaching, teachers decide what is taught, when and how it is taught and how learning is to be demonstrated by students. The clinical situation is the mere medium in which student learning occurs. Although this model permeates the health professions, few teachers and students experience health professions education in such a 'conceptually neat and procedurally unambiguous' way (p. i21).⁸ More often than not, clinical learning is inherently context dependent, reflexive, evolving, and underdetermined and involves complex and multifaceted issues that both teachers and students must consider.

The complex and indeterminate nature of clinical learning not only belies the predetermination of what will be learnt in each encounter, but also raises questions about the utility of separating subject matter from teaching methods. Bingham¹ suggests, for instance, that when a teacher poses a question, *it does something to the subject matter at the same time that it queries the student*. If the question is a true question, it 'breaks open' the subject matter by showing what is still undetermined such that teachers and students together question their knowledge and understanding of the clinical situations they encounter and the possibilities for care. They attend to what they know and don't know, what they notice in a particular situation and what assumptions they are making as they devise a fitting response to a clinical situation. Because many faculty

members teach as they were taught, relying on traditional education methods,⁹ it is commonly the case that faculty members raise ‘false questions’ (p. 557),¹ by asking questions in ways that reinforce what is known (ie, a correct versus an incorrect answer—the correctness of which being determined by the teacher).

Yet, raising true questions is difficult because to raise a true question ‘one must want to know, and that means knowing that one does not know’ (p. 363).¹⁰ When a teacher asks a true question, she becomes a co-learner with the student. Importantly, asking true questions requires deference to the object of enquiry¹ rather than to either predetermined lesson plans or identified learning needs. As co-learners, teachers and students together persistently pursue questions around the clinical situation they encounter and how the care being provided can be improved at micro, meso and macro levels.¹¹ Embedded in such questioning is questioning even further¹⁰ or keeping the question in play. Thought of in this way, questioning is not merely an alternative method one can employ towards the same educational end (content transmission), but is a way of being in a practice situation wherein one consistently questions the possibilities for, and limitations of, practice.¹² Such pedagogies not only facilitate the acquisition of the knowledge and skills for systems improvement but also support the learners becoming professionals who persistently engage the constitutive problems of quality and safety.

The Carnegie Foundation for the Advancement of Teaching’s studies on *Preparation for the Professions*, has highlighted the importance of examining how faculty’s pedagogical practices influence the formation of those entering the field.^{13 14} Indeed, there is growing awareness among health professions faculty that how we teach is as important as what we teach. If the next generation of health professionals is to see improvement work as part of their professional identity, then the traditional, linear content transmission/application model of health professions education must be transformed. New pedagogies will build into health professions students a commitment to, and habit of, improvement.¹⁵

INTERDEPENDENCE AND DIVERSITY OF PERSPECTIVE IN THE CLINICAL WORKPLACE

A central tenet of clinical learning in the health professions is that neophytes learn from a rich array of sources, not just a single designated teacher.¹⁶ This has important and positive implications for interprofessional education (IPE). Improving quality and safety necessarily transgresses disciplinary boundaries and requires understanding of, and respect for, the perspectives and contributions of others in the clinical setting. All too

often well-intentioned efforts at IPE have simply brought the professional silos into close proximity, but the work processes are multiprofessional rather than truly interdisciplinary. That is, nursing students are still taught how to make nursing’s contribution by nursing faculty and so on. Within this approach to IPE the emphasis also commonly remains on teaching one professional to provide care for one patient. Creating new pedagogies that assist teachers and students to move to multiple professionals (and multiple professions) providing care for multiple patients is a necessary step forward.¹⁷ The care of patients, the learning of the students and the improvement of the system become intertwined goals in any setting.

But what of the significant foundational knowledge that already exists to support quality and safety work? How do experts participate in, and contribute to, this reorientation of health professions education? In our vision, experts and established foundational disciplinary knowledge are resources in the environment to be called upon when the issues that learners are tackling require it. For instance, most medical schools in the USA have incorporated significant clinical time in the pre-clerkship phase of medical school and use this early exposure to patients and patient care as the portal to foundational knowledge, including the basic sciences, and skills such as the physical examination. In other words, the encounter with patients needing medical care becomes the context within which ‘true questions’ arise and foundational knowledge is learnt and interrogated. In the same manner, learners in all disciplines could be introduced to concepts and procedures of safety enhancement and quality improvement as they encounter them in early contact with patients, thus preparing themselves to undertake original quality and safety work in subsequent clinical experiences. We believe that there is a ‘hidden efficiency’¹⁸ in allowing learners’ true questions to bring them to this knowledge base rather than delivering it in decontextualised didactic sessions, before they have experienced the settings, relationships and processes in which safety lapses and quality problems occur.

REFOCUSED ASSESSMENT

The emphasis on individual knowledge and skills that characterises health professions education and forms the basis of licensure and certification processes, works at cross-purposes with the need to improve systems and with the accountability for patient outcomes. Learners come to regard themselves as responsible only for outcomes under their direct individual control or, worse, may not regard themselves as responsible for outcomes at all, viewing clinical outcomes as the product of the

system (and thus beyond their control). In fact, of course, the one thing that matters above all else is the patient's outcome and experience. These therefore should be the centrepiece of any assessment programme. Vigorous attention to patient outcomes supports the learning of the traditional knowledge, skills and attitudes of the professions but also compels attention to processes of teamwork, and quality improvement, and to enhanced understanding of the nature of, and threats to, patient safety. The fundamental measure of educational success should be the ability to produce improved systems of care and improved patient outcomes *as part of* the educational process. Learning is thus focused on how the care delivery systems and patient outcomes and experiences within those systems are changed for the better because of its interaction with the educational process. Holding all learners accountable for patient outcomes creates the conditions, joint enterprise, mutual engagement and shared repertoire that characterise communities-of-practice.^{19 20}

We believe that a transformed approach to health professions education for quality and safety offers important benefits over traditional approaches. At the practical level, it mitigates the problems associated with the currently small cadre of true experts in quality improvement and safety enhancement. Quality and safety experts are efficiently used as resources, rather than charged with sole responsibility for content transmission. This is consistent with newer conceptions of how people learn²¹ and with a broader conception of expertise as resident in systems rather than in individuals.²² The reunification of pedagogy with subject matter, through utilisation of 'true questions' brings health professions learners and their teachers face to face with true quality gaps and actual problems in healthcare delivery. Learning how to honestly confront the failings of the care that we provide and developing the commitment to work to make systems and processes of care higher in quality and more reliable becomes an essential element in the professional development of learners and prepares them to address the constitutive problems of healthcare.

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REFERENCES

1. Bingham C. The hermeneutics of educational questioning. *Educ Phil Theory* 2005;37:553–65.
2. Batalden P, Davidoff F. Teaching quality improvement: the devil is in the details. *JAMA* 2007;298:1059–61.
3. Sheps S. Reflections on safety and interprofessional care: some conceptual approaches. *J Interprof Care* 2006;20:545–8.
4. Bereiter C, Scardamalia M. *Surpassing Ourselves: An Inquiry into the Nature and Implications of Expertise*. Chicago: Open Court, 1993.
5. IOM. *Health Professions Education: A Bridge to Quality*. Washington, DC: Institute of Medicine of the National Academies, 2003.
6. Robson S, Turner Y. 'Teaching is a co-learning experience': academics reflecting on learning and teaching in an 'internationalized' faculty. *Teach Higher Educ* 2007;12:41–54.
7. Diekelmann N, Diekelmann J. *Schooling Learning Teaching: Toward a Narrative Pedagogy*. Bloomington, IN: iUniverse Press, 2009.
8. Ogrinc G, Mooney S, Estrada C, et al. The SQUIRE (Standards for QQuality Improvement Reporting Excellence) guidelines for quality improvement reporting: explanation and elaboration. *Qual Saf Health Care* 2008;17(Suppl 1):i13–32.
9. Ironside PM. Creating a research base for nursing education: an interpretive review of conventional, critical, feminist, postmodern, and phenomenologic pedagogies. *ANS Adv Nurs Sci* 2001;23:72–87.
10. Gadamer H. *Truth and Meaning*. Translated by G. Burden and J. Cumming. New York: Crossroad Publishing, 1993.
11. Godfrey MM, Melin CN, Muething SE, et al. Clinical microsystems, Part 3. Transformation of two hospitals using microsystem, mesosystem, and macrosystem strategies. *Jt Comm J Qual Patient Saf* 2008;34:591–603.
12. Ironside PM. Using narrative pedagogy: learning and practising interpretive thinking. *J Adv Nurs* 2006;55:478–86.
13. Benner P, Sutphen M, Leonard V, et al. *Educating nurses: a call for radical transformation*. San Francisco, CA: Jossey-Bass, 2009.
14. Cooke M, Irby D, O'Brien B. *Educating physicians: a call for reform of medical school and residency*. Ed. San Francisco, CA: Jossey Bass, 2010.
15. Leach DC. Competence is a habit. *JAMA* 2002;287:243–4.
16. Billett S. *Learning in the Workplace: Strategies for Effective Practice*. Crows Nest NSW, Australia: Allen & Unwin, 2001.
17. Batalden P, Ogrinc G, Batalden M. From one to many. *J Interprof Care* 2006;20:549–51.
18. Schwartz D, Martin T. Inventing to prepare for future learning: the hidden efficiency of encouraging original student production in statistics instruction. *Cogn Instr* 2004;22:129–84.
19. Brown J, Duguid P. Organizational learning and communities of practice: toward a unified view of working, learning and innovation. *Org Sci* 1991;2:40–57.
20. Wenger E. *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press, 1998.
21. Bransford J, Barron B, Pea RD, et al. *Foundations and Opportunities for an Interdisciplinary Science of Learning*. In: Sawyer RK, ed. *The Cambridge Handbook of the Learning Sciences*. Cambridge: Cambridge University Press, 2006.
22. Engstrom Y. *The New Generation of Expertise—Seven Theses*. In: Rainbird H, Fuller A, Munro A, eds. *Workplace Learning in Context*. London: Rutledge, 2004.