Ten Global Challenges in Medical Education: Wicked Issues and Options for Action

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Abstract

Medical education and the health professions are facing multiple global challenges that are context specific yet are patterned across contexts. These challenges have been described as wicked issues that defy known solutions and are viewed differently by different people. Three simple approaches, inquiry, pattern recognition, and Adaptive Action, are presented as a way forward to tame wicked issues and take informed action.

Keywords Global challenges · Wicked issues · Inquiry · Pattern recognition · Adaptive Action

Introduction

Today, more than ever, knowledge of medical education is necessary but not sufficient. Medical educators and medical education face many challenges, most of which are not isolated events. Instead, they are dynamical complex patterns that are in constant motion, shifting and evolving due to their sensitivity to small contextual changes in the local environmental in which they exist. These patterns span the breadth and depth of faculty development, curriculum change, teaching, assessment, program evaluation, scholarship, research, and leadership. While they have always been intrinsic to medical education, they have been exacerbated by the Covid-19 pandemic. Ten global challenges that are context specific, at the same time, occur across contexts. They are briefly described and collectively characterized as wicked issues [1]. Three options for action to tame wicked issues are discussed.

Ten Challenging Issues in Medical Education

The implementation of various pedagogies is inextricably linked to human relationships. Table 1 lists ten examples of challenges that confront educators and students in their daily practices.

1. The pandemic has everyone's attention. It has further fragmented our lives through social distancing, face masks, lockdowns, and virtual/online communication. Medical education, already challenged to integrate an increasingly complex curriculum, has been broken into smaller pieces by the impact of the pandemic increasing the challenges related to integrated and cohesive learning. The pandemic has reduced the number of opportunities students have for clinical encounters. Increasingly, we are separated by time and space. The nuances of body language and sensitive interactions of expressions of communication are less accessible affecting all forms of exchange.
2. Quality in teaching has always been and will continue to be a challenge long after the pandemic has ended, especially in the clinical setting. Major face-to-face high stakes clinical assessments have shifted online affecting both their sensitivity and specificity. One has to wonder to what extent validity has been affected and what might be the impact on the quality of inferences being made about performance-based assessments. While small-group learning can shift to online breakout rooms, the dynamics of group discussions have been affected.
3. It seems paradoxical that medical education has changed significantly over the past several years, yet resistance to change among faculty members remains a constant issue in the academy. Continuing professional development among practicing clinicians remains a challenge in spite of educational advances in the academy. Expertise is a primary currency for identity in

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Table 1 Ten global challenges in medical education

Ten challenging issues in medical education

- 1.*The Covid-19 pandemic*
- 2.Quality in teaching
- 3.Resistance to change
- 4.Collaboration in education and practice
- 5.Too much to do, not enough time, not enough resources
- 6.Bias: gender, age, race, group, religion, status, specialty, experience
- 7.Competition among roles: teacher, clinician, researcher, administrator, family
- 8.Integration
- 9.Conflict between individual and group
- 10.Developing teaching and assessment capacity in medical educators

academic life, and any challenge to its space, time, and legitimacy generates tension.

4. Collaboration is difficult because it runs contrary to how health professionals are trained and how practice is remunerated. The currency of health professionals is independent practice and in research training is about being an independent investigator. Assessment of learners is based on individual performance and on the extent to which learners are capable of functioning independently. Promotion is based on individual achievement. Traditional concepts of leadership remain largely rooted in hierarchical hero-based models [2, 3]. Small-group learning has become a dominant format in medical education, yet assessment is still largely based on individual performance. Finally, competency-based and outcomes-based medical education emphasizes individual performance [4, 5].
5. There is too much to do, not enough time, and not enough resources. This is a chronic problem that will not go away. It is true for patient care, research, teaching, and administration.
6. Bias of all kinds continues to be a challenge in professional and social circumstances. Examples include gender, age, race, status, experience, specialty, religion, and geography, to name a few. Men continue to dominate leadership roles in academic life. Race is an issue everywhere in the world. There is bias based on expertise and specialty. For example, surgery and internal medicine often have higher value and voice in most hospitals and academies.
7. Fulfilling multiple demanding professional and personal roles is another continuous challenge. When I am a teacher, I am not being a researcher. When I am a clinician, I am not doing administration. When I am doing one job, I am not doing the other, and when I am doing all of them, I am not with my family. For post-graduate trainees, there is a tension between service and the provision of education among post-graduate trainees.

8. Integration in the curriculum among silos of disciplines and departments, specialties, and interprofessional and multidisciplinary work is a common seemingly intractable challenges in medical education. The traditional approach to integration of adding more courses to the curriculum leading to an overwhelming learning task for students and more work for teachers is not a viable solution.
9. Conflict between individuals and groups is a constant challenge in health professions institutions and health care. It is not uncommon in a problem-based curriculum that in some small groups, facilitators refuse to stop lecturing even when students complain that their learning is not student-centered.
10. Faculty development is a continuous challenge. Not everyone who needs it participates in workshops or capacity building activities. Commonly, such activities are voluntary and not a significant part of promotion decisions. Often, faculty development occurs as a single event without continuity over time.

Wicked Issues in Medical Education

Rittel and Weber (1973) described a new class of problems called “wicked issues” that are impossible to solve. These ten challenges in medical education are wicked issues. They are defined differently by different people and do not follow assumptions of linear causality. They are context dependent yet exhibit patterns across contexts (Table 2). For example, one such common wicked issue, collaboration in teaching and in clinical care, looks different to each person involved. The wicked issue of collaboration changes all the time. It is not an issue that ends because it is continuously sensitive to multiple conditions at the same time.

Wicked issues, especially those involving human relationships, are too big and have too many parts to manage all at

Table 2 Characteristics of wicked issues

1. Defined differently from different perspectives
2. Context dependent but patterned across contexts
3. Impossible to solve completely
4. Too many pieces to manage
5. No root cause
6. Too big to think of all at once
7. Unpredictable
8. Open to external influences
9. Previous solutions are not working now

[1, 6–8]

once, making it impossible to identify a root cause. They are non-linear and unpredictable. Finally, wicked issues are open to external causes and influences.

Three Approaches to Tame Wicked Issues

What to do when dealing with wicked issues? What is possible? Three approaches are suggested to tame wicked issues and make them more manageable: inquiry, patterns, and Adaptive Action.

Inquiry

All organisms inquire about and continuously sample their environment. Medical education and the health care professions depend on effective inquiry. Four behaviors promote inquiry in human systems.

1. Turn judgment into curiosity. Curiosity leads to learning. Judgment in the present context does not refer to summative assessment in which a decision is made based on evidence and experience. Instead, judgment refers to negative bias, early closure of a discussion before all the available information is shared, and everyone has had a chance to participate. It refers to deciding how you feel about something before you have explored it. Curiosity creates an open environment for students who want to learn. Leadership without curiosity fails all concerned.
2. The second challenge of inquiry is to turn disagreement into shared exploration. Differences are essential for progress and growth. They create the energy of change. It is how science challenges the status quo. Finding a gap in the literature or an unexplained difference leads to the formation and exploration of new hypotheses.
3. Turning defensiveness into self-reflection is the third challenge in inquiry. Sometimes, disagreement becomes personal, and individual identity can become confused

with a difference in perspective. Challenges in collaboration can lead to hurt feelings and defensiveness.

4. Turning assumptions into questions is the fourth challenge in inquiry. It is natural to make assumptions about how things work and for the reasons for human behavior. Finding and questioning our basic assumptions is the key to successful inquiry in medicine, science, and human relationships.

Thus, managing wicked issues benefits from inquiry, and inquiry involves curiosity, shared exploration, self-reflection, and questioning assumptions.

Patterns

There are static, fixed patterns like crystals and machines, and there are ever changing patterns like human relationships, collaboration, and the social determinants of health. We are concerned herein with the latter. A useful way to define patterns is to understand them as many interacting interdependent parts in which similarities, differences, and connections have meaning across time and space [9]. Thus, wicked patterns are not stable; they do not stay in one position. The pattern of a health care team behavior changes and adapts itself with each clinical challenge [10, 11]. Collaboration changes from moment to moment as do doctor patient relationships [12]. Recognizing patterns of wicked issues is facilitated by asking five questions:

1. What do you notice in general about this pattern?
2. So what are some exceptions?
3. What are some contradictions?
4. What surprises you?
5. What questions do you have?

Once a pattern is recognized, it can be named, opening up new possibilities for dialogue, exploration, and action.

Adaptive Action

Adaptive action is a way to take informed action in the face of the uncertainty of wicked issues. It consists of three deceptively simple questions, What? So What? and Now What? The first question, What? establishes the data, what is known, what can be observed, what has happened? It illustrates the similarities, differences, and connections that form the observed pattern? The second question, So What? goes to meaning and understanding. So what does it mean? So what is possible? So what are the options? It is the beginning of a hypothesis or an explanation. The third question is Now What? Now what will we measure, what will we do? What will we communicate? What will we design? What

will we teach? After an action is taken, a new situation and a new pattern appears, and the Adaptive Action process begins again iteratively with a new What?

Adaptive Action helps us to inquire about and perceive the pattern in a wicked issue. It leads to informed action based on understanding. When there are no satisfactory answers, when what has worked before is no longer working, then Adaptive Action is the best strategy to tame wicked issues and challenges in medical education.

Summary

Today, knowing about medical education is necessary but not sufficient. There are multiple real and significant challenges along the way to successfully implementing medical education. Ten common challenges can be characterized as wicked issues that appear as patterns without solutions. However, they can be tamed and managed through inquiry, pattern recognition, and Adaptive Action. Seeing these challenges as wicked issues and pursuing inquiry, pattern recognition and Adaptive Action provides a viable practical path forward.

Declarations

Ethics approval and consent to participate Ethical approval was not necessary or relevant.

Competing interests The authors declare no competing interests.

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