Prateek Sharma, Section Editor

Four Approaches to Reinvigorate Learning for the 21st Century Gastroenterologist

Brijen J. Shah,[1] Silvio W. de Melo Jr,[2] and Gary W. Falk[3]

[1]Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, New York; [2]Deparment of Medicine, University of Florida College of Medicine, Jacksonville, Florida; [3]Department of Medicine, University of Pennsylvania Perelman School of Medicine, Philadelphia, Pennsylvania

Medical education has traditionally been delivered in fixed blocks of time during one's professional career, often in static, live, learning venues. This scenario is quickly changing owing to the increased use of technology in medical education, a greater content to learn with less available time, as well as different generations of learners with their own unique educational preferences.[1–5]

A core mission of the AGA is to shape physician education during their entire career, extending to other members of the health care team, including nurse practitioners and physician assistants. All gastroenterologists should recognize the varied forces that are changing medical education today. This article explores recent trends in medical education and offers practical suggestions for how to incorporate them to be used by the gastroenterology community in a variety of settings including medical student, postgraduate, and continuing medical education.

The Changing Educational Landscape

Why the Change?

Several new forces have changed health care and the way medical education is now delivered. First and foremost, we have different generations of learners with their own unique learning preference.[6] Second, medical education is provided to a more complex health care workforce with physicians, nurse practitioners, physician assistants, nurses, and technicians all with singular education needs and less dedicated time for education.[7] Third, the volume and complexity of information to master has increased dramatically, leading medical education to evolve in the format, timing, and delivery of learning materials. Fourth, technology is now fully integrated into adult lives, transforming the ways in which adults learn.

Changing Generations, Changing Learning Styles

Today, we are educating 3 generations of learners. Baby Boomers prefer lecture-based learning in a classroom setting, the more traditional way that medical education has been delivered. Generation X individuals learn quickly and efficiently, with a preference for more flexible formats such as short live courses and print- or web-based learning. Their learning is enhanced by obtaining an additional "value" to the activity, such as a certificate that will lead to promotion, increase in patient referrals, or overall professional recognition. Millennials, the generation in medical school and graduate medical education today, gravitate toward experiential learning, team-based assignments, and new technology. Experiential learning involves growth in knowledge using real-world experiences, reflecting on these, abstracting lessons learned, and applying them to new situations. This approach is the opposite of traditional classroom-based approaches where concepts are taught and then learners go out and apply them in their lives.[8]

Evolving Approaches to Medical Education

Individualized Learning

The single biggest trend in medical education today is the move toward individualized learning. Although clinicians need a base of knowledge and skills to function, their practices evolve over time and therefore their learning needs are specific to their practice setting. This trend is anchored in Knowles' principles of andragogy, which includes the learner's involvement in the planning of education, draws on experience, has immediate relevance to their life, and is problem centered.[9] Each adult learner has preferences for how they learn best. Matching learning content with a preferred learning style optimizes the impact of learning. The development of an individualized portfolio to follow the progress of learning is a key outcome, which

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individuals, health care systems, and professional societies now require as part of ongoing professional development.

Like an artist's portfolio, a learning portfolio is a collection of the types of learning activities a health care professional has engaged in. The portfolio can be organized into the 6 major competencies of medical practice: medical knowledge, patient care, interpersonal communication, systems-based practice, professionalism, and practice-based learning and improvement. Some portfolios include a section on self-reflection and long- and short-term career goals. The portfolio serves as a repository of all course work, certificates of completion, continuing medical education, and special training programs the learner has engaged in as evidence of growth in these various domains.

This approach allows for educational activities to be aligned with individual learning needs based on curiosity and clinical practice. However, the challenge of individualized learning is that it requires the individual to maintain a log of all activities with self-reflection (certificates, measurement of practice data, examination scores). For this approach to be tenable for the duration of the gastroenterologist's career, there needs to be an easily accessible and durable technologic solution to capture this information. This approach has been used at Queen's University for graduate medical education where the portfolio includes learning plans, clinical question logs, case logs, and research scholarship.[10]

Practical Tips

1. When planning a meeting, conference, or any educational activity, offer different methods to deliver the information (lectures, webinars, videos, group sessions, etc) and ask the participants which method of learning they prefer to use.
2. Consider one low fee that would cover all different methods: live, on-line, lecture repository, and so on.
3. Consider conducting a prevenue and postvenue assessment of content retention.
4. Solicit comments and suggestions about the event as well as topics for improvement in the future, such as content, length, and format.

Workplace-based Learning

Workplace-based training is another major trend that delivers learning at the point of care and is task based. Workplace-based education is a key component in creating a learning healthcare system, outlined by the Institute of Medicine, to help us achieve safer, high-quality health care.[11] In these systems, complex care operations and processes are improved through team training, skills development, and creation of feedback loops for improvement and continuous learning. This trend involves reframing learning to include the entire health care team, using common problems, adverse events, and gaps in quality and value to drive opportunities for future learning and development.

In many ways, this approach has been used by individual learners and teams to drive learning. One learns more about the topics that challenge them on a day-to-day basis. This trend is easy to implement because it is what in front of us. If one is in a practice or setting where these data are not being gathered, it is harder to understand what one needs. These topics are unique to each practice or group of individuals; thus, it requires more coordination to implement it. An example of this approach would be a GI practice that sees that their adenoma detection rates are low. The group engages in learning what improves adenoma detection rates, creates a peer-based coaching program on better colonoscopy technique, and learns quality improvement tools to measure and track their improvement.[12]

Practical Tips

1. Identify educational gaps by identifying situations that gastroenterologists are struggling with at your Institution (such as the adenoma detection rate, as mentioned).
2. Offer short and objective sessions involving the group that ideally are team based.
3. Have a measurable outcome to close the loop back with the group after a set period of time. For example, we will meet again and 3 months and review our adenoma detection rate or how have we put this learning into practice.

Simulation

Simulation is an integral part of medical education today, particularly for gastroenterology. It is attractive to all segments of the education continuum: students, trainees, and practicing physicians. It allows for exposure to a new technique or perfecting one's abilities without the anxiety produced by an actual patient interaction. Simulation can be used in several forms: simulated patient interactions with an actor or dummy model; ex vivo models, either mechanical or animal based; virtual reality computer-based simulators; and live animal-based cases. It can be applied to demonstrate both cognitive as well as technical skills. Simulation is now a requirement for gastroenterology fellowship as mandated by the American Council for Graduate Medical Education. However, despite recommendations from the American Council for Graduate Medical Education, simulation is used by only approximately 42% of the gastroenterology training programs and only 15% require them before initiating clinical cases. The majority of gastroenterology program directors (65%) believe that simulation is a valuable teaching tool and is easy to use (76%). Barriers for implementation are cost (72%) and accessibility (69%).[13]

Simulation seems to improve endoscopic performance, particularly in novices, for upper endoscopy, colonoscopy, endoscopic retrograde cholangiopancreatography, and, to some extent, endoscopic ultrasonography.[14] A number of unanswered questions remain, however, such as, where should simulation be inserted into the gastroenterology curriculum? What is the optimal metric to quantify the learner retention? Does simulation justify the financial investment compared to the more traditional live teaching cases as is the case in the apprentice model? Does simulation lead to improved patient outcomes? Answers to each of