

What Traditional Lectures Can Learn From Podcasts

Holland Kaplan, MD
Divya Verma, MD
Zaven Sargsyan, MD

A growing trend in graduate and undergraduate medical education is to minimize the use of traditional lectures.^{1,2} Medical schools advertise their departure from lectures and transition to active learning formats, with some curricula removing traditional lectures entirely.^{1,3} Residency programs have also begun to employ flipped classroom and other interactive learning formats.^{4–6} These transitions are informed by demonstrated merits of more effortful learning,⁷ as well as the tendency of learners to stream lecture recordings remotely or miss lectures entirely.^{8–10} However, others argue that lectures continue to hold an important place in medical education, citing benefits such as historical efficacy, scale, efficiency, and exposure to diverse thinking styles and expertise.^{11–13}

Podcasts—downloadable audio files typically released as installments in a series—have become popular among medical trainees.^{14,15} Depending on the specialty, 35% to 88% of residents report listening to medically relevant podcasts.^{16–18} Professional medical organizations both endorse and produce medical podcasts, some of which garner as many as 200 000 downloads per month.^{19,20} Many students and residents prefer podcasts to other learning modalities,^{15,21–24} and emerging data support their educational value for development and retention of knowledge^{23–27} and practical skills.^{28,29} As one example of their impact, 72% of 356 responding emergency medicine residents reported that podcasts changed their clinical practice either “somewhat” or “very much,” although further research is needed to document higher-level outcomes.^{17,24} Trainees have also cited the benefits of podcasts beyond knowledge acquisition, including a sense of connection to local and national peers and faculty.²⁴

Podcasts and traditional lectures have many similarities. Like lectures, podcasts may appear to be designed to unilaterally transfer expertise and opinions to a large group of learners.³⁰ Podcast speakers cannot create dialogue with their listeners or employ

some of the typical active learning approaches that many new curricula embrace, such as team-based learning. However, there are also features that set successful podcasts apart, which could be applied to the design, delivery, and use of medical lectures to make them more effective.

Podcasts are portable and accessible anytime, which is important to modern trainees.^{24,31,32} They allow listeners to accelerate playback, pause to process and research topics of their interest, or skip topics they find familiar or less relevant. The popularity of asynchronous and accelerated playback has also been documented for lectures,⁹ suggesting that offering lecture recordings as often as possible may be prudent. Most podcasts are also shorter than traditional lectures, and their preferred length of 15 to 30 minutes corresponds with the typical adult learner’s attention span.^{4,17} Shortening the default 1-hour duration of lectures would better align with principles of cognitive psychology and may have practical benefits for trainees in busy clinical environments.

Many podcasts employ expert interviews and discussions among multiple hosts. First, this conversational format helps to share thought processes in addition to factual knowledge. Perhaps more importantly, it allows the hosts and guests to create a casual and friendly atmosphere by incorporating banter, humor, and personality. Trainees have cited this characteristic when describing the engaging nature of podcasts and their ability to engender a sense of connectedness with other members of the profession.²⁴ This is understandable when viewed through the lens of sociocultural learning theory,³² whereby social roles and norms are important modulators of learning. If listening to a podcast feels like attending an intimate gathering with a familiar talk show host and a national expert in the field, this perceived context may positively influence attention, credibility, and the tendency to adopt implicit lessons. The social aspect of using podcasts is further bolstered when residents discuss their content with peers or supervisors after the fact, which occurs often.²⁴

DOI: <http://dx.doi.org/10.4300/JGME-D-19-00619.1>

Whether by intent or as a consequence of the conversational format, podcasts also make frequent use of storytelling. The narrative format of communication is distinguished by its description of chronology, characters, and cause-and-effect, and it is effective in communicating about science.³³ Learning from narratives in medicine has been shown to promote sense-making, empathy, memory, reflection on practice, professional identity formation, and illness script development,^{33–36} and may even entail use of unique neural networks.³⁷ The use of narratives in podcasts may be aided by their audio-only format, as well as the frequent inclusion of topics such as communication skills, patient perspectives, challenges and joys of practice, and experiences of the speakers and their guests. Such perspectives may not be found when reading the same material independently, but can perhaps be incorporated into lectures. Finally, despite the inherent limitation of the medium, many podcasts are able to use some active learning strategies, asking the listener to pause playback in order to recall, manipulate, or interpret points of discussion surrounding cases or questions. Many of these techniques—from prompted critical thinking to the use of narratives—have been described and advocated in lectures as well^{4,5,34} but could be applied more broadly and consistently.

Although these hypotheses have theoretical and empirical bases, we must also consider whether it is the particular speakers and their overall performances—not the specific features described above—that make certain podcasts popular and effective. We have all experienced outstanding lectures, whether from a favorite teacher, at a national conference, or on a particularly interesting topic. Perhaps the online and open-access medium of podcasts simply allows for curation and dissemination of those products that most successfully execute principles of effective instruction—some known and others yet uncharacterized. The METRIQ Study Collaborators, an international group of educational researchers, has been developing tools to evaluate the characteristics, use patterns, and educational quality of online resources, including podcasts. This work may clarify some of the hypotheses above and contribute to curation and future improvements.^{38,39} Similar scholarship would help to advance our understanding of effective lectures as well, where only limited evidence and expert opinion guide current practices, assessment, and speaker training.^{4,39–43}

Learning from speech and storytelling is an inherent human skill. Despite the welcome addition of small group and active-learning sessions to medical curricula, lectures will continue to play a role. Further work is needed to study lecture effectiveness and

define best practices for various settings and outcomes. In the meantime, the characteristics of successful podcasts give some clues for optimizing the use of lectures: speakers should consider shortened duration, creative approaches to active learning, use of narrative and conversation, and offering flexibility of consumption when possible.

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All authors are with Baylor College of Medicine. **Holland Kaplan, MD**, is a Resident, Department of Medicine; **Divya Verma, MD**, is a Resident, Department of Medicine; and **Zaven Sargsyan, MD**, is Assistant Professor, Department of Medicine.

Corresponding author: Zaven Sargsyan, MD, Ben Taub Hospital, 1504 Ben Taub Loop, BCM285, Houston, TX 77030, 713.873.3560, zaven.sargsyan@bcm.edu