

“I heard it in a podcast”

How to navigate learners’ use of non-traditional learning platforms

It is no secret that non-traditional learning platforms such as blogs and podcasts are becoming more popular among learners. This article will help guide you with a 3-step approach to the trainee who brings up such material.

Rather than leaf through a textbook, many current trainees will open their favorite [RSS feed](#) or podcast app to find study material. In fact, Mallin et al. found that listening to podcasts outranked textbook reading as the preferred form of study among emergency medicine residents (35% vs 33.6%).¹ Regardless of your stance on blogs/podcasts, it is important to recognize that they are here and a part of our learners’ knowledge acquisition.

A trainee’s use of non-traditional learning platforms often comes to light while in our clinical work, with phrases such as “I heard X in a podcast” or “I read about Y in a blog and I would like to try it.” These statements can be off-putting, and our reflexive response is sometimes dismissive or condemning. This reaction often stems from one of the following:

- Lack of familiarity with the podcast/blog
- Lack of understanding in the topic matter
- Lack of comfort implementing practice change based on non-traditional resources

When we go with our knee-jerk reaction of dismissal, we invalidate the learner and their efforts, and miss an opportunity to teach them about the use of these non-traditional materials. We must recognize what is before us: a motivated student, doing independent learning, is asking us about practical application of new medical knowledge. Our response, ideally, is structured and supportive. With this 3-step approach, it can be.

Step 1: Validation

First, it is important to recognize the independent learning of the trainee and commend them for their application of this clinically.

Example: “That is so awesome you are finding time outside of your busy medical student/resident life to study independently! Even more kudos for trying to apply that to patient care. Awesome work!”

Step 2: Structured critique

Similar to how journal club teaches trainees how to critique an article, we should be offering the same skill set on how to assess a blog or podcast. Structured approaches exist, and I recommend that published by *Academic Life in Emergency Medicine*. This assessment is a 5-element approach to assessing a blog/podcast’s quality ([ALIEM Scoring Instrument](#)).

Example: “I’m not familiar with that specific blog/podcast. Just like the articles we review in journal club, it’s important to have a structured approach to critiquing these pieces. Luckily, someone has created an

assessment tool to help us. Why don't you send me the material and I'll send to assessment tool. We can then look at the material, appraise it with the tool, and reconvene on how to apply it to our clinical practice."

Step 3: Wrapping It Up

After you and the student have done some independent learning, it is important to close the loop. This, too, can be done asynchronously if time is an issue. In this conversation topics to address include:

- Issues with the use of the assessment tool
- Questions regarding the individual blog/podcast's quality
- Content review
- Clinical application

Example: "Thanks for bringing that podcast on stress testing to my attention. I thought it did well in 4 of the five areas in the assessment tool. The one area I had reservations was that it seemed to have a lot of expert opinion and less literature citation. We always have to be cautious there. How do you think this will affect your clinical practice?"

With some premeditation and structure, these challenging interactions can be turned very rewarding for both learner and teacher. For more information on learners' views on blogs and podcasts, look at *Independent and Interwoven*.³

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A Survey of the Current Utilization of Asynchronous Education Among Emergency Medicine Residents in the United States

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Abstract

Problem

Medical education is transitioning from traditional learning methods. Resident interest in easily accessible education materials is forcing educators to reevaluate teaching methodology.

Approach

To determine emergency medicine residents' current methods and preferences for obtaining medical knowledge, the authors created a survey and sent it to residents, at all levels of training throughout the United States, whose e-mail addresses were available via their residency's official Web site (June–December 2012). The eight-question voluntary survey asked

respondents about demographics, their use of extracurricular time, and the materials they perceived as most beneficial. The authors used descriptive statistics to analyze results.

Outcomes

Of the 401 residents who received the e-mailed survey, 226 (56.3%) completed it. Of these, 97.7% reported spending at least one hour per week engaging in extracurricular education, and 34.5% reported spending two to four hours per week ($P < .001$). Time listening to podcasts was the most popular (reported by 35.0% of residents), followed by reading textbooks (33.6%) and searching Google (21.4%; $P <$

.001). Residents endorsed podcasts as the most beneficial (endorsed by 70.3%) compared with textbooks (endorsed by 54.3%), journals (36.5%), and Google (33.8%; $P < .001$). Most respondents reported evaluating the quality of evidence or reviewing references "rarely" or less than half the time. A majority (80.0%) selected the topics they accessed based on recent clinical encounters.

Next Steps

The results suggest that residents are using more open access interactive multimedia tools. Medical educators must engage with current learners to guide appropriate use of these.

Problem

The information age is changing the way knowledge is disseminated and accessed.

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The age of the chalkboard, PowerPoint slides, and hourlong lectures is fading as the medical education learning environment becomes more technology based. Although seemingly lagging behind other fields in higher education,¹ medical educators and learners are beginning to use asynchronous education as a means to tap into the Millennial Generation's preferred means of information consumption.^{2,3} Asynchronous education is a student-centered modality of teaching which involves sharing online learning resources and promotes peer-to-peer interactions.⁴ Growing evidence indicates not only that asynchronous education is preferred by learners but also that it is more effective.⁵ A recommendation from the Council of Residency Directors (CORD) Academic Assembly Conference Alternatives Workgroup in 2008 echoes this effectiveness: "A deliberate mixture of synchronous learning activities and asynchronous learning activities is ideal."⁶

Free Open Access Medical Education, or "#FOAMed" as it's referred to on Twitter, is a term coined by Mike Cadogan via the medical blog Life in the Fast Lane.⁷

This blog, along with many others like it, and a handful of free and paid podcasts, plus Twitter, iTunes U, Vimeo, and YouTube, appear to be rapidly changing medical education. Resident conferences are often augmented with podcasts and online sources rather than home reading assignments. To illustrate, residents from the University of Utah are now discussing research studies introduced on podcasts or electronically before the studies are published formally as journal articles.

Mel Herbert, founder of one of the first medical podcasts, EMRAP, recently tweeted, "Traditional texts are dead."⁸ This sentiment appears to be pervasive amongst the youngest and most influential learners and educators. Studies have shown that online resources such as UpToDate and even Google are quicker and more accurate than either books or databases of journal articles (e.g., PubMed) for researching clinical questions.⁹

Millennial Generation learners appear to be bringing about a paradigm shift in medical education. Podcasts and online resources for asynchronous learning are

growing exponentially as evidenced by the three million plus downloads of the EMCrit (Emergency Medicine Critical Care) podcast and the more than 15,000 subscribers to EM:RAP (Emergency Medicine: Reviews and Perspectives). Yet there has been little research to determine the prevalence of asynchronous education amongst emergency medical residents. This preliminary study attempts to quantify the degree to which emergency medicine residents use and prefer educational resources.

We hypothesize that a survey of current emergency medicine residents will show that a majority use open access multimedia resources as opposed to traditional learning methods for extracurricular education.

Approach

Study design and population

This study was performed at the University of Utah between June and December 2012 with institutional review board approval. We created a survey and sent it via SurveyMonkey (Palo Alto, California) to residents ($n = 401$) at all levels of training. The residents were working at 12 different residencies representing not only geographical locations throughout the United States but also both public and private institutions and diverse social environments. We chose the residency programs according to the availability of resident e-mail addresses on their Web sites. Rather than administer the survey through a program director, we sent the survey directly to each resident's e-mail address, which allowed us to send reminders (as many as 10) to those who did not respond. All responses were anonymous.

Survey content and administration

Residents and faculty at the University of Utah designed the survey to address areas of education they felt were not recognized by standard didactic and emergency medicine residency education. The survey was pilot tested with other residents at the University of Utah who did not write the survey to assess for validity, clarity, and an understanding of the survey questions. We used Utah residents' responses to the survey only for pilot testing and did not include them in the final data set. The survey,

designed to take fewer than five minutes to complete, consisted of eight questions eliciting information on resident demographics, on how residents spend their extracurricular time (especially in regard to educational endeavors), and on which educational materials they perceive as the most beneficial (See Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A188>). Completion of the survey was voluntary, and we provided no compensation or incentives for participating.

Data analysis

We evaluated results using descriptive statistics and the chi-square test statistic for categorical variables. We considered a P value of $\leq .05$ to be statistically significant. We used GraphPad QuickCalcs software (version 2014, La Jolla, California) for all analyses.

Outcomes

Of the 401 residents invited, 226 residents (56.3%) from 12 emergency medicine residencies completed the survey. Almost all of the respondents (97.7% or 216/221) reported spending some time (at least one hour) per week engaging in extracurricular education. About a third of the residents (34.4% or 76/221) indicated that they spend two to four hours per week ($P < .001$). When asked to indicate the percentage of time they spend on specific educational materials, respondents reported that of their time spent learning, they spend the greatest amount of time listening to podcasts (mean: 35.0%), followed by reading textbooks (33.6%) and searching Google (21.4%; $P < .001$). Despite the similarities in time spent between listening to podcasts and reading textbooks, residents felt that podcasts were the most beneficial use of their time. Of 219 respondents, the most (70.3% [$n = 154$]) endorsed podcasts as beneficial, followed by textbooks (54.3% [$n = 119$]), journals (36.5% [$n = 80$]), and Google (33.8% [$n = 74$]; $P < .001$).

The majority of residents reported that they evaluate the quality of evidence or review the references "rarely" or less than half the time. To be specific, of 217 residents, 36.4% ($n = 79$) "rarely" review the citations or references, and 5.9% ($n = 13$) never do ($P < .001$).

Interestingly, most residents (80.0% [176/220]) reported choosing the topics they accessed on the basis of recent clinical encounters. Other residents (31.4% [69/220]) reported selecting topics on the basis of the podcast/blog schedule, and some (29.1% [64/220]) choose extracurricular educational topics on the basis of the assigned didactic residency conference schedule ($P < .001$).

A large majority of responding residents, 81.4% (175/215; $P < .001$), reported using EM:RAP for extracurricular education. Residents also reported regularly accessing UpToDate (73% [157/215]) and EMCrit (52.6% [113/215]; see Figure 1).

Next Steps

Our data suggest that emergency medicine residents prefer listening to podcasts (70.3%) as opposed to reading textbooks (54.3%) or reading journals (36.5%). Although these peer-reviewed sources of information are usually considered more academically sound by scholars, they do not seem to be the preference of our learners. Furthermore, a majority of learners evaluated the sources presented in Internet-based educational material only half the time or never. This finding suggests a need for educators to guide Millennial Generation learners in the appropriate use and critical appraisal of the multimedia and Internet-based resources they are accessing to acquire knowledge.

A growing body of free and open access educational materials means that students must develop a filter that allows them to assess the quality of information. Such a filter may be the greatest tool we, as trained educators, can give to the current generation of learners.

A large majority of residents, 80%, use recent patient encounters to decide what information to review. This finding, suggesting that learners prefer information and education relevant to their daily practice, has implications for how educators choose to design resident conferences and schedules. Many residencies use a strict didactic schedule, based on a rotating curriculum designed to cover all areas of emergency medicine. Our data suggest that self-learning activities, under educator direction, may be ideal for covering topics that

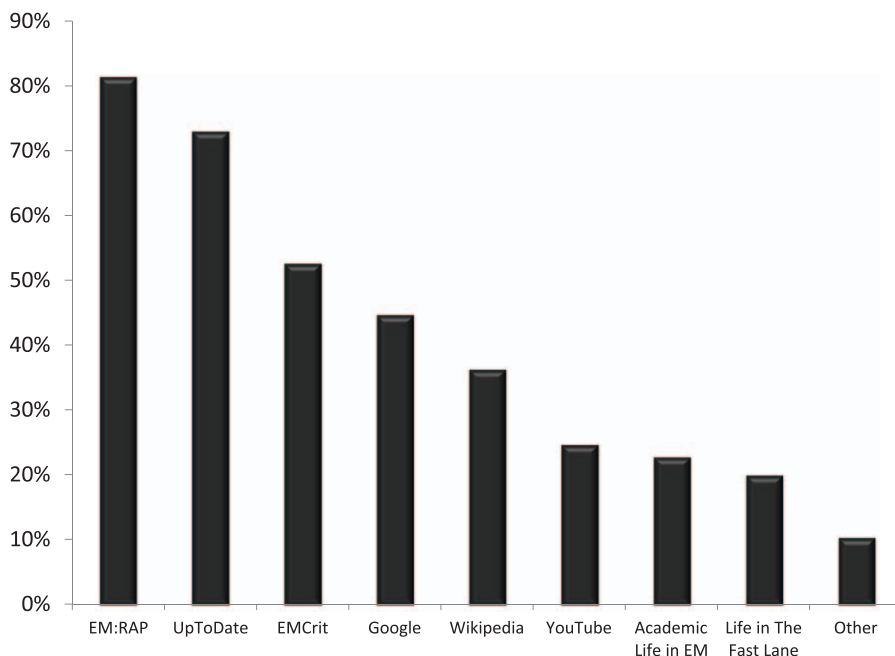


Figure 1 Use of asynchronous, online educational resources by emergency medicine (EM) residents in 12 residency programs, 2012 ($P < .001$). This graph displays the most common resources used by the 216 residents responding to the survey who were asked to “Click all that apply.” Other includes RESUSME, ERcast, EM Updates, Smart EM, theNNT, EM Literature of Note, Ultrasound Podcast, and iTunes U. EM:RAP indicates Emergency Medicine: Reviews and Perspectives; EMCrit, Emergency Department Critical Care.

the residents themselves find important or that relate to their recent patient encounters.

The CORD released recommendations in 2008 from the Academic Assembly Conference Alternatives Workgroup regarding asynchronous learning.⁶ They defined asynchronous learning as “individualized learning, away from small or large groups of similar level learners.” Our data suggest that medical learning may be moving toward electronic multimedia resources such as blogs and podcasts, and away from traditional resources such as textbooks and journal articles. The CORD report recognizes varied advantages and disadvantages of both synchronous and asynchronous learning modalities and, as mentioned above, recommends “a deliberate mixture of both.”⁶ CORD’s recommendation to include asynchronous learning in the educational curriculum of emergency medicine residency programs will likely further the use of multimedia and electronic resources for extracurricular learning and asynchronous education.

A delicate balance exists between educating learners in the modality they

find the most useful and developing modalities that address the issues seasoned educators believe to be the most important. More research needs to be performed to identify the optimal balance between “just-in-time” learning and traditional methods of education.

Although medical education appears to be moving toward disseminating information through online means, medical educators should not infer that textbooks and journal articles are no longer important. In general, the peer-reviewed content of these publications is superior in quality to that found on many blogs, podcasts, and online resources. However, the trend may suggest that the medical education community will see a significant transition of traditional texts to online venues, which may appeal to millennial learners. This change could be the best of both worlds.

There are several limitations to this preliminary study. Specifically, this was a small survey sent to only 12 residency programs. Although we did consider broader dissemination of the survey, many residencies were unwilling to provide us with resident

e-mail addresses, therefore limiting our access to the residents for reminders. We suspect our 56% response rate is due to resident physicians’ busy schedules and our inability to monetarily support their participation. We do not suspect significant variability in responses from those who did not complete the survey, but there is the possibility that residents who use traditional educational materials such as textbooks and journals are underrepresented in this survey. In addition, the survey methodology did not allow us to collect qualitative data explaining how or why residents used different resources. Future research involving interviews and/or focus groups should be performed.

Our findings clearly reveal a group of emergency medicine residents who prefer online blogs and podcasts to journals and textbooks as sources of information. As medical educators, we should consider incorporating the use of online sources into our traditional educational environments. We have the responsibility to be facilitators of knowledge. Now, more than ever, our job is to teach residents how to critically assess the quality of resources and the validity of their evidence. Finally, residents seem to prefer to learn about subjects based on recent patient encounters, which suggests that including self-directed learning and resident-inspired topics in the traditional didactic schedule could allow residents to spend time on educational topics most important to them.

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