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Abstract Educators in health professions education should know about current issues and emerging trends related to their roles and the field at large. This knowledge informs scholarly work and helps identify best practices to adopt, pitfalls to avoid, and role models to emulate. The literature and expert opinion suggest a four-stage approach for educators to maintain their knowledge of best practices: PLAN, PULL, PUSH, and PLAY. This paper proposes strategies to show how a deliberate approach, supported with technology, may make the overwhelming task of staying up-to-date in the ever-changing field of medical education more manageable and personally rewarding.

Keywords Faculty development · Educational scholarship · Medical education · Technology enhanced learning

Background

Consensus exists that educators in the health professions should know about current issues and emerging trends related to their roles and the field at large [1]. This knowledge, typically acquired from reading journals in one's field and engaging with the professional community, informs scholarly work [2–4] and contributes to career advancement [5, 6]. Additionally, knowing about educational trends and initiatives helps identify best practices to adopt, pitfalls to avoid, and role models to emulate [6].

In practice, "keeping up" challenges most of us, given the avalanche of information available on the Internet and elsewhere. It takes technical expertise to locate pertinent information quickly, while filtering out unnecessary or inaccurate information [7], and self-discipline to carve time from busy schedules to organize and read selected materials habitually [8]. Furthermore, those new to the field of medical education may not know about the key journals, resources, and professional organizations available to educators. There are guides that describe how to search electronic databases to answer specific questions [9–11] and locate journals applicable to health professions education [9, 10, 12, 13]. Yet, these guides, while informative, do not offer educators advice on how to identify, prioritize, and process the essential information needed to remain current while balancing competing personal and professional responsibilities.

In this paper, we offer educators strategies to help keep informed of best educational practices and trends in medical education. Our intent is to show how a deliberate approach, supported with technology, may make the overwhelming task of staying up-to-date more manageable and personally rewarding.

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Methods

We searched a variety of electronic databases (PubMed, ERIC, PsychInfo, etc.) to locate articles describing how

medical educators can maintain their fund of knowledge of ever-changing educational practices in medicine and higher education. Then, two of us (SBB and SU) sought expert opinion from participants at the 2014 meeting of the Society of Directors of Research in Medical Education (SDRME) held in Charleston, SC. At this meeting, 22 medical education experts from different institutions located in North America and Europe formed small groups to define "being current" with the medical education literature and discuss strategies/tools to keep abreast of educational trends/practices. Groups recorded their responses onto flip charts for subsequent large group discussion. We distributed a summary of key points (via e-mail) to all SDRME participants afterward to confirm the accuracy and comprehensiveness of their recommendations.

The literature and expert opinion suggested a four-stage approach that medical educators could use to assess their information needs (PLAN), glean or seek multiple resources purposely (PULL or PUSH), and engage with the education community (PLAY) in order to stay up-to-date with educational trends and practices. This paper proposes strategies for each of the PLAN, PULL, PUSH, and PLAY approaches (Fig. 1).
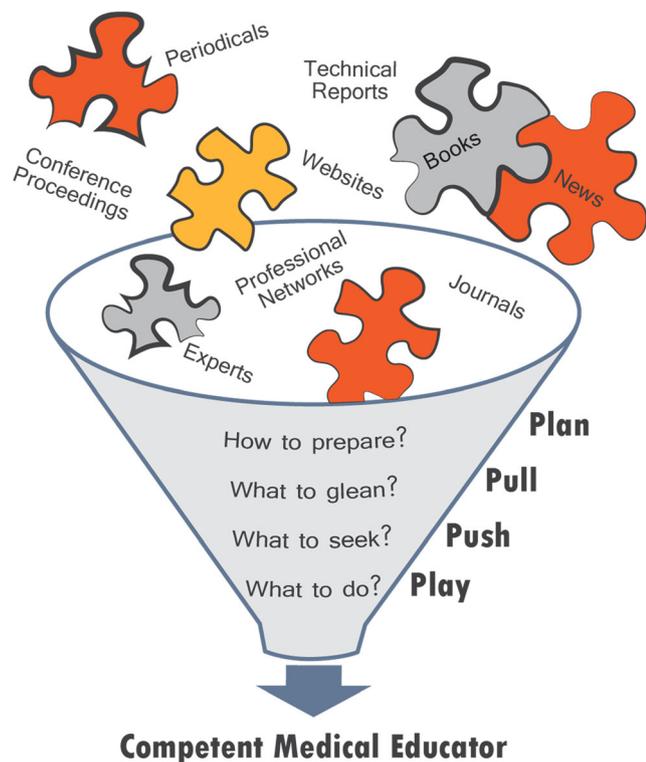
Fig. 1 Our model follows a fluid process that educators can use to define information needs (PLAN), glean or seek multiple resources purposely (PUSH and PULL), and engage with the education community (PLAY) in order to stay abreast of educational trends and practices required for competence

PLAN: How to Prepare?

No. 1—Define What "Keeping Up" Means to You

An essential first step is to create a personal statement detailing the information required for your professional development [7]. Consider the following questions and then write a brief statement to delineate the scope of topics you can realistically monitor. What knowledge do you need for your role? What matters at your institution? What topics interest you? Do you have an area where you would like to specialize? Do students or colleagues regularly ask you questions about certain topics? Are there scholarly projects you want to pursue that will require you to learn more? What gaps exist in your current understanding of best teaching, learning, or assessment practices? What new mandates or trends may affect your work or institution that you would be embarrassed not to know? SDRME members recommend focusing first on "breadth" (conversant with a variety of topics) and then "depth" (thorough understanding of a specific topic). You can always modify your personal statement as your learning needs or interests change [7].

No. 2—Identify Relevant, High-Yield Resources

Most of us are time-pressed and need to select resources for independent study that provide essential rather than superfluous information if we want to make this process feasible. Journals will likely provide the best source of the latest educational research while organizational Web sites typically feature technical reports, mandates, or conference proceedings. Established repositories are also available that provide reports of "hot topics" in health professions education (AMEE guides), comprehensive reviews of educational literature (Best Evidence for Medical Education and Campbell Collaboration), peer-reviewed instructional materials (MedEdPortal), and recommended article collections (MedEdWorld). Gain familiarity with available resources in medical and higher education (Table 1) to select and prioritize the resources you intend to monitor regularly. For instance, to identify appropriate journals, review journals' Web sites to judge their caliber (acceptance rate, impact factor, etc.) and content (descriptive reports, original research, etc.). Does the journal utilize peer review to improve article quality? Does the journal publish articles on topics that align closely with your personal mission statement and professional work? To what extent does the journal publish timely articles with sufficient credibility, accuracy, and depth? You may want to consult with a librarian or mentor for suggestions of high-yield resources. SDRME members advise scanning the contents of both medical education and higher education journals to maintain "breadth" of knowledge. We recommend selecting three to five peer-reviewed journals within your field and one to two journals

Table 1 Select resources for educators in medical education

Medical education journals	Higher education journals
Academic Medicine	Assessment and Evaluation in Higher Education
Advances in Health Sciences Education	Assessment in Education: Principles, Policy, and Practice
Anatomical Sciences Education	Educational Assessment
BMC Medical Education	Educational Leadership
British Medical Journal	Journal of Adult Education
Canadian Medical Education Journal	Journal of Educational Research
Education for Health	Journal of Faculty Development
Education for Primary Care	Journal of Higher Education
Evaluation & the Health Professions	Journal of Instructional Development
Journal of Continuing Education in the Health Professions	International Journal of Teaching and Learning in Higher Education
Journal of Graduate Medical Education	Quality in Higher Education
Journal of Health Professions Education	Research in Higher Education
Medical Education	Studies in Higher Education
Medical Education Online	Studies in the Education of Adults
Medical Science Educator	Teaching in Higher Education
Medical Teacher	The Review of Higher Education
Perspectives in Medical Education	
Postgraduate Medical Journal	
Teaching and Learning in Medicine	
The Clinical Teacher	

Repositories

AMEE Guides (http://www.amee.org/publications/amee-guides)

MedEdPortal (www.mededportal.org)

MedEdWorld (http://www.mededworld.org)

Best Evidence for Medical Education Collaboration (http://www.bemecollaboration.org/)

Campbell Collaboration (http://www.campbellcollaboration.org/resources/links_education.php)

Multimedia Educational Resource for Learning and Online Teaching (http://www.merlot.org/merlot/index.htm)

Proquest for dissertations/theses (http://www.proquest.com/products-services/dissertations/)

Team Based Learning Collaborative (http://www.teambasedlearning.org)

Associations, Foundations, and Organizations

Academy of Medical Educators (http://www.medicaleducators.org)

Accreditation Council for Graduate Medical Education (https://www.acgme.org/acgmeweb/)

American Association of Colleges of Osteopathic Medicine (http://www.aacom.org/)

American Educational Research Association: Division I (http://www.aera.net/DivisionI/EducationintheProfessions%28I%29/tabid/11137/Default.aspx)

American Medical Association (http://ama-assn.org)

Association for Medical Education in Europe (http://www.amee.org/home)

Association for the Study of Medical Education (http://www.asme.org.uk/)

Association of American Medical Colleges (https://www.aamc.org/)

Association of Standardized Patient Educators (http://www.teambasedlearning.org/)

Canadian Association for Medical Education (http://www.came-acem.ca/default_en.php)

Carnegie Foundation for the Advancement of Teaching (http://www.carnegiefoundation.org/)

Educational Council for Foreign Medical Graduates (http://www.ecfmg.org/)

Foundation for Advancement of International Medical Education and Research (http://www.faimer.org/)

General Medical Council (http://www.gmc-uk.org/)

Generalists in Medical Education (http://www.thegeneralists.org/)

Institute for International Medical Education (http://www.iime.org/)

Institute of Medicine (www.iom.edu)

International Association of Medical Science Educators (http://www.iamse.org/)

Liaison Committee on Medical Education (http://www.lcme.org/)

Table 1 (continued)

National Board of Medical Examiners (http://www.nbme.org/)
National Board of Osteopathic Medical Examiners (http://www.nbome.org/)
Specialty-specific groups (i.e., Clerkship Directors of Internal Medicine, etc.)
World Federation of Medical Education (http://www.wfme.org/)
Other
Conference proceedings (often posted on websites of professional organizations)
Periodicals like the Chronicle of Higher Education (http://chronicle.com/section/Home/5)

outside your field to scan routinely. You can always expand your reading if time permits [14, 15].

No. 3—Develop Your Strategy

The behavior modification literature emphasizes "preparation" as a prerequisite for adopting healthy behaviors [16]. Reflect on strategies likely to promote healthy reading habits given your learning preferences and time limitations. Do you like to read in blocks of time, during quiet periods in the office, or in a location with few distractions? Do like to access materials electronically or do you prefer "hard copies" of documents located in a nearby manila folder? Do not try to "squeeze out time…into stolen moments" as Laine and Weinberg caution [7]. Instead, develop a deliberate "plan-of-attack" in which to protect or plan time to read already identified resources (see no. 2).

In addition to scheduling reading time, consider shortcuts to streamline your independent study. Assign priority to original research or peer-reviewed reports as these are more likely to provide you with new information with fewer methodological flaws [14, 15]. For journal articles, read titles and abstracts and then discussion and conclusion sections to judge article quality efficiently [17]. For books, scan the table of contents, skim the chapter of interest, and skip the rest [18]. If an article or chapter captures your attention, set it aside for when you have sufficient time to read it critically—a task that will likely require multiple readings.

PULL: What to Glean?

No. 4—Monitor Hot Topics

Staying up-to-date requires gaining knowledge about multiple topics. One strategy to achieve breadth is to focus on topics others will likely discuss at networking events or conferences you attend. Even if you cannot attend a meeting, much can be gleaned from a conference agenda, in particular from the titles and descriptions of a presentation. Presentation titles often encapsulate a take-home message or highlight a challenge that, taken together, give you a sense of the direction in which the field is heading and may help you select readings that you have PULLED or which are PUSHED to you. Often, trends

can be discerned from recent review articles and publications, including book titles and dissertation/thesis topics (Table 1). Perform a quick search to monitor the titles of recently published books (Google) or the topics of dissertations and theses (ProQuest). You can also gain insights of information relevant to your personal statement (see no. 1) if you engage with or follow social media (see no. 12). All of these venues should provide insight on important hot topics.

No. 5—Conduct Periodic Literature Searches

To enhance your depth of knowledge, perform periodic literature searches, utilizing major databases, on the topics outlined in your personal statement (see no. 1). We identified several papers describing the mechanics for searching electronic databases [9–11, 13]. For instance, Haig and Dozier authored two Best Evidence in Medical Education (BEME) guides [9, 10] offering recommendations and examples on how to search the health professions literature (i.e., applicable databases, specific search strategies, etc.) that you may want to consult.

No. 6—Look Outside Your Field

Resist the temptation to restrict your searches to the medical education literature (or for that matter, PubMed); instead, expand your knowledge by searching in broader areas. If you are working on topics relating to affective issues, such as self-efficacy or motivation, expand your search to include the social sciences literature (e.g., PsychInfo or Web of Science). If you are exploring methods to capture the attention of your learners, explore the higher education or adult education literature (e.g., ERIC). Topics on leadership may benefit from a survey of publications in business, management, or marketing databases (e.g., Business Source Premiere). The goal is to select resources and materials that contribute to both the breadth and depth of your knowledge.

PUSH: What to Seek?

No. 7—Subscribe to Relevant Resources

As information technology affords us greater access, it has become exceedingly easy to subscribe to an unmanageable

number of resources. It is essential to have a system for selecting which resources to PUSH—that is, what should automatically come to you [13, 17, 19]. Subscribe to electronic tables of contents (eTOCs), Really Simple Syndication (RSS) feeds, and alerts (Table 2). Electronic TOCs provide a free method to scan pertinent journals/publications within and outside your field. RSS feeds and alerts PULL content from various sources and PUSH this information to you. At a minimum, selections should provide new information or content that aligns with your interests and professional work.

No. 8—Follow the Experts

In addition to having "hot topics" pushed to you, identify experts in your field and elsewhere to follow. Experts have a proven track record of high-quality scholarship worth reading, as they often publish prolifically in specific areas over time. Monitoring their work will give you a critical review of a topic, examples of practices to emulate, and unanswered questions to explore. List the names of those who frequently publish in the journals you read or present at the conferences you attend. Which experts or authors outside your field provoke your thinking? Reviewing the reference lists of journal articles and book chapters (ancestry searching) may also help you identify the names of experts that you may not already know.

After generating a list of potential experts to track, obtain more information about them and their work from Web-based author profiles (Google Scholar, ResearchGate, etc.) or citation index services (e.g., http://webofknowledge.com). These resources offer rich information, well beyond manual ancestry searching, in that they provide a more complete profile of the nature and impact of an expert's work (i.e., list of others who cite an expert's work, complete report of expert's co-authors, etc.). Finally, create alerts (see no. 7) to follow the "thought leaders" whose scholarly work aligns to your personal statement (see no. 1).

No. 9—Use Technology to Get Organized

Subscribing to feeds and alerts is only part of the process; you should also decide how to organize what you collect. The extent to which the PULLED or PUSHED content supports the task of staying up-to-date will depend upon your organizational preferences. Fortunately, there are many tools designed specifically for this task. However, achieving maximum efficiency may require different tools. For instance, organizing feeds requires software that uses aggregation technology to collect content from outside sources into a single web space. Retrieving information is maximized with tagging and filtering features. Saving articles and other resources is

Table 2 Overview of resource types

Resource	Description	Examples
eTOC	Electronic table of contents provide exactly what the name implies, e-mail version of a table of contents. These typically come as lists of hyperlinks to recently published works in the given journal. Some journals offer the option to filter those by criteria such as *latest issue* or *most popular*.	Journals (Medical Education); publishers (Elsevier—through Science Direct)
RSS	RSS (Really Simple Syndication) feeds are most widely used to distribute news. The application of a feed is limitless; it can deliver a wide range of resources including electronic tables of contents (eTOCs), blogs, podcasts, and videos. An RSS is typically sent to an e-mail, newsreader, or feed aggregator where it displays a brief summary of the content with a hyperlink to the full source. Note that while RSS feeds and alerts can be directed to email services, not all providers support such features. For example, Microsoft Outlook supports RSS feeds and alerts; however, Gmail supports alerts, but not RSS feeds.	Journals (Academic Medicine); databases (PubMed); Organizations (AAMC); publishers (Springer—through Springer Link); ePublishers (HighWire); news sites (Inside Higher Ed); conferences (AERA)
Alerts	Alerts are not as widely used as RSS. Alerts forward links to recently published works, based on user predefined terms. For example, you can create an alert for a broad area like medical education or specific areas of interest, such as assessment. You can also consider creating alerts for specific hot topics (e.g., Entrustable Professional Activities), specific individuals, or those who cite your publications.	Google Scholar Alerts. A current limitation is that it only supports e-mail subscriptions.
Social media	Social media provides a less conventional, but powerful way to gather information and connect with other professionals. You can gain access to current trends, professional communities, or interest groups. Use hashtags to find information on topics of interest (e.g., #meded). Additionally, there are a variety of hashtags associated with the conferences, talks, and events.	Twitter, LinkedIn, Google+

best conquered with content management tools. For this reason, we describe this strategy in more depth.

Organizing content with feed aggregators or readers should be your bare-bones approach to using technology for organizational purposes. Opt to use an aggregator to send selected content into your inbox. This practical alternative to collecting alerts and feeds will provide you with a central location to receive multiple types of resources instead of relying solely on e-mail. Both feed aggregators and news readers are applications that serve the same function to collect, organize, and access pushed content into an external, easy-to-use Web-based interface. Their Web-based nature increases access and supports most operating systems and mobile devices. There is an abundance of free aggregators; currently, popular choices include Feedly (http://feedly.com/apps.html) and Dig Reader (http://digg.com/reader).

Retrieving the content that you have aggregated should be quick, efficient, and independent of your ability to recall the content's name or location. To achieve this, make tagging part of your organizational habits. Tagging refers to the process of assigning descriptive keywords to pieces of information for retrieval purposes. Tagging is the backbone of searching and maximizes retrieval speed. Tags can be assigned to virtually any type of electronic data (e.g., documents, images, videos, and Web sites). These tags are then saved with the source as "metadata" and become searchable by those terms. While tagging is supported by most applications, it is not a stand-alone feature. You will typically tag while performing other tasks. For example, you can add tags to MS Word documents or Adobe PDF files as you create or save content. Social bookmarking applications (e.g., Diigo, Delicious, Gather) take tagging to the next level by allowing you to create libraries of tagged content (Web pages), which you can also share with colleagues. An alternative to tagging alone involves the use of content management applications, which brings us to the third part of this recommendation.

Choose a content management application (i.e., reference management software) to organize your information. Reference management software (RMS) applications save, organize, search, and use content of any type, thereby making organized content accessible through Web-based synchronization. RMS applications (e.g., Mendeley, Zotero, EndNote, RefWorks, and Evernote to a limited extent) allow you to gather and sort content centrally (e.g., journal articles, electronics books, PDF documents, personal files, presentations, images, and notes). Many interface with word processing programs making the insertion of citations in scholarly work a breeze. Given that the primary function of RMS is to save and search, tagging becomes a supportive feature rather than a main feature. RMS search capabilities are similar to Google. You can type any term, or part of a term (e.g., title, author, year, key term, publisher, and tag), and the RMS will populate matching content found in your library. Tags provide the added flexibility

to search by categories; in this type of application, you can view tagging as a folder that allows you to *group* concepts. Keep in mind that software applications move in and out of favor, so it is important not to place too much emphasis on the RMS itself, but focus on the functions they offer.

PLAY: What to Do?

No. 10—Develop a Professional Network

Keeping up with the field cannot be done in isolation and requires you engage with others who share your interests. Being involved in a professional network locally, regionally, and nationally is not only enjoyable but also helps you determine what information you should focus on for your professional development (see no. 1). Interacting with peers constitutes the social side of the medical education profession, which can be, at times, a solitary vocation depending upon your access to colleagues with similar roles. Wenger describes a "community of practice" as a process of social learning where people, who have a common purpose and passion, share ideas, collaborate, and explore innovations [20]. These interactions can occur informally through online venues or deliberately at professional meetings. Such meetings are not only a source of new ideas but, if well planned, also give you a sense of the current "hot topics" in the field (see no. 4). Participating in professional organizations is an effective way to develop your professional network, to stay "connected with your discipline" [21], or to be exposed to a topic outside your area of expertise. As you become more engaged with a broader educational community, you are well positioned to advance yourself as an educational scholar by building upon the work of others, and subsequently, contributing back to the community [5].

Alternatively, you can create your own local "community of practice" in the form of a journal club [22]. Journal clubs can be conceived in many formats, including online journal clubs, but have in common that a group of practitioners comes together periodically to review recent publications so participants can stay apprised of current literature that may have implications for their practice. Recommendations for successful in-person and virtual journal club have been suggested [23, 24]. A good practice, in our experience, is meeting in an informal setting (such as in a colleague's home) and include wine and cheese to promote attendance as well as a lively discussion!

No. 11—Review and Support Scholarship of Others

It is considered good academic citizenship to volunteer to review journal manuscripts, conference submissions, and grant applications. Writing a thoughtful review and providing constructive feedback takes practice and time. Fortunately,

guidelines have been developed (https://www.aamc.org/members/gea/167684/guide_for_reviewers.html) and the rewards of reviewing are invaluable. The authors whose work you choose to review are, in effect, your "scouts" of recent literature. Assuming they have adequately prepared their work, they describe the state of the field on which their scholarship builds, which typically coincides with your areas of interest and expertise. As your "proxy," they organize the information in their literature review, perhaps illuminating new work with which you were not familiar, or encouraging you to explore new territories.

In a similar vein, serving on graduate students' thesis and dissertation committees or mentoring others in conducting research will expose you to specific, perhaps unfamiliar, areas in the literature—not to mention the gratifying experience of promoting the professional growth of others.

No. 12—Engage with Social Media

Nowhere is information shared and communities mobilized more rapidly than in social media. They can be equally distracting and rewarding as they allow you to participate in worldwide conversations with strangers and renowned scholars alike and help you identify "trending topics." Social media is not for everyone, and you need to find a platform that suits your needs and preferences. If you can glean meaningful lessons from 140 characters and share yours in equally sparse "microblogs," consider using Twitter (https://twitter.com) to follow specific thought leaders and colleagues (see no. 8) or share resources with others [25]. Dashboard applications (e.g., TweetDeck, Hootsuite, TweetCaster, and UberSocial) can help you organize social media streams into categories to make browsing more efficient (Table 2).

If you are more verbose, other platforms like LinkedIn (http://www.LinkedIn.com) may be more suitable. Many have special interest groups targeting specific content areas or may utilize hashtags to follow specific individuals, topics of interest, or conferences. Listserves are the predecessors of social media and some are still thriving (e.g., DR-ED: http://omerad.msu.edu/dr-ed/). Through broadcast e-mails, you can participate in lively discussions and, in the process, learn what is occupying the field. Regardless of the platform, with social media, you can quickly reach out to a vast network of peers and encounter individuals you otherwise would have never met (and sometimes wish you never did!). Helpful suggestions for using social media, including cautionary notes, have been described elsewhere [26].

Conclusions

Staying up-to-date is worthwhile given the potential contributions to your career and work as a medical educator even though the task, at first, is overwhelming given the vast amounts of information available on the Internet and elsewhere. We propose strategies, gleaned from the literature and medical education experts, to help you realistically acquire and maintain the knowledge essential for your work as a health professions educator. You do not need to adopt all of the strategies proposed in this paper. Instead, select those that align with your personal mission statement and learning preferences. Keeping current is a journey rather than a destination. You will gain valuable insights regardless of the paths you choose to navigate or the detours you try to avoid.

References

1. Srinivasan M, Li ST, Meyers FJ, Pratt DD, Collins JB, Braddock C, et al. "Teaching as a competency": competencies for medical educators. Acad Med. 2011;86(10):1211–20.
2. Glassick CE. Boyer's expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching. Acad Med. 2000;75(9):877–80.
3. Beckman TJ, Cook DA. Developing scholarly projects in education: a primer for medical teachers. Med Teach. 2007;29:210–8.
4. Crites GE, Gaines JK, Cottrell S, Kalishman S, Gusic M, Mavis B, et al. Medical education scholarship: an introductory guide: AMEE guide No. 89. Med Teach. 2014;36(8):657–74.
5. Simpson D, Fincher RE, Hafler JP, Irby DM, Richards BF, Rosenfeld GC, et al. Advancing educators and education by defining the components and evidence associated with educational scholarship. Med Ed. 2007;41:1002–9.
6. McGaghie WC. Scholarship, publication, and career advancement in health professions education: AMEE Guide No. 43. Med Teach. 2009;31:574–90.
7. Laine C, Weinberg DS. How can physicians keep up-to-date? Annu Rev Med. 1999;50:99–110.
8. Haynes RB, McKibbon KA, Fitzgerald D, Guyatt GH, Walker CJ, Sackett DL. How to keep up with the medical literature: I. Why to try to keep up and how to get started. Ann Intern Med. 1986;105(1):149–53.
9. Haig A, Dozier M. BEME guide no. 3: systematic searching for evidence in medical education – part 1: sources of information. Med Teach. 2003;25(4):352–63.
10. Haig A, Dozier M. BEME guide no. 3: systematic searching for evidence in medical education – part 2: constructing searches. Med Teach. 2003;25(5):463–84.
11. Maggio LA, Tannery NH, Kanter SL. AM last page: how to perform an effective database search. Acad Med. 2011;86(8):1057.
12. AAMC-GEA-MESRE Section. Annotated bibliography of journals for educational scholarship Washington, DC: Association of American Medical Colleges. 2014. https://www.aamc.org/download/184694/data/annotated_bibliography_of_journals.pdf. Accessed 8 Sep 2014.

13. Poirier T, Behnen E. Where and how to search for evidence in the education literature. The WHEEL. 2014. doi:10.56888/ajpe78470.

14. Haynes RB, McKibbon KA, Fitzgerald D, Guyatt GH, Walker CJ, Sackett DL. How to keep up with the medical literature: II. Deciding which journals to read regularly. Ann Intern Med. 1986;105(2):309–12.

15. Haynes RB, McKibbon KA, Fitzgerald D, Guyatt GH, Walker CJ, Sackett DL. How to keep up with the medical literature: III. Expanding the number of journals you read regularly. Ann Intern Med. 1986;105(3):474–8.

16. Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. Am J Health Promot. 1997;12(1):38–48.

17. Citrome L, Moss SV, Graf C. How to search and harvest the medical literature: let the citations come to you, and how to proceed when the do. Int J Clin Pract. 2009;63(11):1565–70.

18. Slusarski SB. Enhancing professional development through reading professional literature. Anaheim: Paper presented at the annual meeting of the American Association of Adult and Continuing Education; 1992.

19. Shaughnessy AF. Keeping up with the medical literature: how to set up a system. Am Fam Physician. 2009;79(1):25–6.

20. Wenger E. Communities of practice: learning, meaning, and identity. Cambridge: Cambridge University Press; 1998.

21. Hitchcock MA, Anderson WA. On whose shoulders we stand: lessons from exemplar medical educators. Adv Health Sci Ed Theory Pract. 2008;13(5):563–9.

22. Quinn EM, Cantillon P, Redmond HP, Bennett D. Surgical journal club as a community of practice: a case study. J Surg Ed. 2014;71(4):606–12.

23. Lee AG, Boldt HC, Golnick KC, Arnold AC, Oetting TA, Beaver HA, et al. Using the journal club to teach and assess competence in practice-based learning and improvement: a literature review and recommendation for implementation. Surv Ophthalmol. 2005;50(6):542–8.

24. Lizanrondo L, Kumar S, Grimmer-Somers K. Online journal clubs: an innovative approach to achieving evidence-based practice. J Allied Health. 2010;39(1):e17–22.

25. Forgie SE, Duff JP, Ross S. Twelve tips for using twitter as a learning tool in medical education. Med Teach. 2013;35(1):8–14.

26. Kind T, Patel PD, Lie D, Chretien KC. Twelve tips for using social media as a medical educator. Med Teach. 2014;36:284–90.