Harvest the Low-Hanging Fruit: Strategies for Submitting Educational Innovations for Publication

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The field of medical education, including graduate medical education (GME), is fertile ground for creativity. With more outlets for medical education scholarship than ever before,[1] the national discourse should be flush with descriptions of educational innovations.

However, there are many medical education innovations that are never submitted successfully for publication, and educators often are derailed at various points in the writing and submission process. To address this problem, we present opportunities and strategies for educators to conceptualize and articulate their innovations for scholarly outlets. Ultimately, we encourage educators to "harvest the low-hanging fruits" of their innovative efforts.

What Is Innovation in Medical Education?

Innovations can take many forms, including curricula, assessment tools, or faculty development programs, and they are usually initiated to solve an existing problem or to improve education. A group might identify new tools[2] or creative opportunities[3] to help residents meet the Accreditation Council for Graduate Medical Education's scholarly activity requirements. An institution might report on a new assessment strategy for interns' encounters with standardized patients,[4] or a novel leadership curriculum for chief residents.[5]

Although medical education innovations are diverse, a thorough literature search that fails to yield a similar approach is often a good indicator that the new approach is in fact *innovative*. On the other hand, sometimes an educational intervention may be new to a particular level of learner or to a specialty, but has been previously published as a research or innovation report. For example, an educator might modify a published intern "boot camp" from one surgical specialty for another. Or, a simulation manager may have taken an existing objective structured clinical examination, originally developed for senior residents, and modified it for junior residents or medical students. Many journals would not consider these "adapted" interventions to be novel enough to be published as stand-alone papers, since new approaches, rather than new audiences, are how journals often define innovation. Nonetheless, these adapted innovations are important (eg, they can be used to further validate an approach in a different population) and can still be disseminated through other outlets, such as MedEdPORTAL (www.mededportal.org) or MedEdWorld (www.mededworld.org/home.aspx).

Why Should Innovations Be Published?

Published innovations benefit all stakeholders in medical education. Learners benefit from new and creative educational approaches; institutions benefit from gaining access to potential solutions for their local problems; and faculty benefit, first, from peer discussion and review of their work, and second, from the record of scholarship and associated professional recognition. Also, for innovations to have a broader positive impact on education, they require replication, publication, and additional study before they can be adopted as mature interventions.

Kanter[6] articulated several guidelines to describe innovations for publication. For example, he recommended adequately describing (1) the problem that the innovation is intended to solve, (2) the stakeholders involved, and (3) the generalizability of the problem to other institutions. He also suggested that authors list other potential solutions or ideas for the problem, as well as articulate why their particular innovation was the best choice. A more complete synthesis of the innovation and the innovation process can provide greater benefit to the field of medical education.

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BOX Key Points

- The field of medical education, including graduate medical education, is fertile ground for creativity, yet many innovations are never submitted successfully for publication.
- Educational innovations can take many forms, including curricula, assessment tools, or faculty development programs, and they are usually initiated to solve an existing problem or to improve education.
- Published educational innovations are beneficial to all stakeholders in medical education, including learners, faculty, and institutions.
- Strategies for writing educational interventions include (1) finding a mentor; (2) organizing a writing team; (3) approaching all activities in a scholarly manner; (4) planning your schedule for writing; and (5) staying current and celebrating successes.

Where Are Innovations Published?

One characteristic of innovations is that they can be described in many different ways and for many different dissemination outlets (TABLE). In sifting through these options, consider the audience most likely to value this innovation, such as undergraduate or graduate medical educators, specialty-specific educators, or nursing educators. If the innovation is a curriculum for residents, faculty might find more value from being able to immediately access and implement the curriculum, rather than from reading an article that describes an early evaluation of the curriculum. At the same time, if the innovation is a disruption or change in process, an article that provides a full examination of the innovation and its development may be beneficial to readers.

Why Aren't Innovations Published?

Sometimes faculty members do not recognize the value of their innovation, and may not consider their work worthy of publication. Other faculty members may not know how to organize the writing of their innovation in a way that is meaningful to a scholarly audience. To address this challenge, Kanter's[6] editorial is a useful resource for faculty. However, writing about innovation often presents additional barriers, such as initiation of the novel intervention before outcomes have been considered, use of volunteer subjects in the first iterations of the intervention, small numbers of participants, and limitations in study design such as lack of a comparison group to demonstrate that differences are due to the intervention.

Other barriers to publishing innovations are related less to content and more to the typical barriers to academic writing. Faculty members report lack of time, lack of funding, and lack of expertise with scholarly writing as barriers to publication.[7]

What Are Some Strategies for Writing Innovations?

The barriers to writing about an innovation are similar to those that plague other forms of scholarly writing. In this section, we provide several strategies for writing culled from the literature[8] as well as from our own experiences. For each strategy, we also present institutional considerations that may provide a more systematic solution for educators.

Strategy 1: Find a Mentor

Academic writing is no easy task, even for the most motivated and prolific scholars. Considering how health professionals are trained and their daily responsibilities, it is understandable that many are unprepared to author well-written, compelling innovations reports.[9] A writing mentor can help. Writing mentors can be peers, but more often they are senior faculty members with a record of publication success. Mentors can help with the technical aspects of writing—how to clearly write about an innovation and how to navigate the publication process—as well as with organizing and regulating one's time and motivation. Thus, finding a mentor within one's own institution makes sense. Good writing mentors can also be found at regional and national education meetings.

Some organizations foster formal mentoring programs designed to help junior faculty navigate the intricacies of academic medicine, including publishing. Institutions may find value in hiring PhD-trained educators, whose graduate training includes a great deal of writing and editing, to work with faculty. Institutions can also partner with writing centers or labs at local universities.

Strategy 2: Organize a Writing Team or Community of Education Scholars

Beyond a mentor, educators are encouraged to identify a writing team or community of education scholars. As Yarris et al[7] found in their consensus workshop on overcoming barriers to publishing productivity, building communities around education scholarship facilitates the sharing of member resources as well as their knowledge and skills. These communities also help members stay motivated and accountable to agreed-on writing deadlines.

TABLE
Examples of Various Outlets for Disseminating Educational Innovations and Other Scholarly Products

Feature Title	Journal	Word Limit	Description
Educational Innovation	*Journal of Graduate Medical Education*	2000	A description of a new approach or strategy in GME that has been implemented and assessed at a minimum with feasibility and acceptability
Perspectives	*Journal of Graduate Medical Education*	1200	Evidence-based opinion that can describe an innovative GME educational approach
New Ideas	*Journal of Graduate Medical Education*	650	Novel GME approach that has been implemented at least once and appears to be successful; numbers of participants may be small and outcomes may be preliminary; annual call and publication
Insights	*Clinical Teacher*	800	Structured reflection
How We . . .	*Medical Teacher*	2500	A description of an idea or topic in medical education that's been implemented, and a reflection on that process
12 Tips	*Medical Teacher*	3200	Practical tips or advice, potentially as the result of an innovation
Really Good Stuff	*Medical Education*	500	Lessons learned through innovation in medical education; annual call and publication
Short Reports	*Journal of Interprofessional Care*	1000	Innovation or research in progress that affects interprofessional education or practice
Last Page	*Academic Medicine*	1-page	Visual display of a concept, idea, theory, or process
Developments	*Teaching and Learning in Medicine*	2000	Innovation or development in medical education
N/A	*MedEdPORTAL* (from the Association of American Medical Colleges)	N/A	Curricula, workshops, courses, and tools, with an instructor guide
N/A	*MedEdWorld* (from the Association for Medical Education in Europe)	N/A	Curricula, workshops, courses, tools, and research papers

Abbreviations: GME, graduate medical education; N/A, not applicable.

Writing communities can take many forms, from local writing groups and larger institutional communities (eg, academies for medical education scholars) to regional and national groups that form around topics of interest within a professional organization (eg, the Association of American Medical Colleges Group on Educational Affairs). Turner and colleagues[10] described their local "community of practice" around clinical teaching. They note that "the group was formed to share ideas, to reflect on teaching experiences, and to transmit new knowledge to other clinician-educators within our pediatrics department."[10] The end result was a clinical educator handbook, which is a great example of transforming everyday teaching into educational scholarship. Organizing an institution-wide scholarship group can bring together a diverse group of educators. This variety in perspectives can facilitate valuable conversation, feedback, and support beyond that of an individual's department. Such a diverse group also can pool resources and identify opportunities for collaboration.

Regardless of their forms, effective writing communities require strong leadership. A good leader keeps the group on task, runs an efficient meeting, and motivates the group by example. Furthermore, the group's productivity often depends on development of a clear statement about the group's purpose, the role and commitment of its members, and the frequency of meetings.

Strategy 3: Approach All Educational Activities in a Scholarly Manner

In 1997, building on the seminal work of Boyer,[11] scholars from The Carnegie Foundation for the Advancement of Teaching developed 6 shared themes referred to as "standards." The 6 standards describe high-quality scholarship, which is characterized by (1) clear goals, (2) adequate preparation, (3) appropriate

methods, (4) significant results, (5) effective presentation, and (6) reflective critique.[12] From a practical perspective, these 6 standards are a useful framework for guiding a rigorous and scholarly approach to the work of medical educators.

For example, *establishing clear goals* before one sits down to develop a new curriculum includes clearly defining the basic purpose of the work, stating the overall objectives, ensuring they are realistic and achievable, and identifying questions about the curriculum that the broader medical education community cares about. Similarly, *adequate preparation* includes a thorough review of the relevant educational literature, as well as a compilation of the necessary references and resources to inform and improve the curriculum.

Approaching one's work in a scholarly manner also includes making one's work (1) public, (2) available for peer review and critique, and (3) able to be reproduced and built on by others.[13] Publishing an educational innovation is 1 way for medical educators to advance teaching as scholarship. The paper by Turner et al[10] provides a practical example of how clinician educators transformed clinical teaching into teaching scholarship.

From an institutional perspective, organizations can foster a scholarly approach by identifying or training administrative staff, such as librarians, data managers, and statisticians, with medical education and medical education research experience. Given the nuances of medical education research,[14] having knowledgeable staff who can efficiently search the literature and synthesize data helps to move research and publication forward. Furthermore, collaboration with Institutional Review Boards on specific templates and processes for medical education protocol submissions can make the Institutional Review Board submission process less cumbersome. Developing a template or specific guidelines for medical education protocol submissions may benefit all parties involved.[15]

Strategy 4: Plan Your Schedule for Writing

An old adage asserts, "If you want to run faster, run faster." Similarly, if you want to write more, you need to write more. Often, the problem is finding time. One way to make time for writing is to include it on the calendar. Just as a meeting goes on the calendar, so too should time for writing. Although we prefer a minimum of 1 hour for writing, studies show that even 15 minutes weekly can be sufficient for progress.[8,16] Also, educators should not become discouraged by *very rough* first drafts: often the best ideas come later, during the revision phase. The key to beginning your writing, in our experience, is to write without regard for grammar, structure, or flow, considerations that should come later. Getting started, even with just a few lines or paragraphs, will often focus the project and create momentum to see it through.[16]

Strategy 5: Stay Current and Celebrate Successes

Reading what others are doing can stimulate ideas for educational innovations. As medical educators, we have an obligation to contribute to the literature and spread the word on best practices and lessons learned, with the goal of education quality improvement. Reading every health professions education journal clearly is not possible. Instead, educators can ask their library to set up a saved search on a specific area of interest, for example, GME and outcomes, resident wellness and resiliency, or predicting performance and standardized tests. Such searches will automatically send related articles to one's e-mail inbox as the articles are published. Some educators may also wish to regularly peruse the table of contents for a single medical education journal, often available electronically from their library. In addition, Twitter groups can alert subscribers to journal articles and other relevant materials in their area of interest (eg, @JournalofGME, @AcadMedJournal, and @WBmeded).

Another consideration is to start a medical education journal club or health professions education grand rounds. Here participants showcase their own innovative work and that of others. These activities create a community of education scholars (see Strategy 2), keep participants updated on recent publications, and foster new ideas and motivation to contribute to the literature.

By formally recognizing educational scholarship, such as educational innovations, institutions give a message to faculty and departmental leadership that these activities are worthy of blocked time. Offering formal recognition demonstrates to faculty that such work is valued. There are many ways institutions can offer such recognition. For example, institutions can offer medical education or teaching awards, highlight educators' work in a public forum, and make educational scholarship a key component of promotion and tenure decisions.

Final Thoughts

Educational innovations are being continuously developed by undergraduate and graduate medical educators, as well as by others, to address important

problems, create efficiencies, and improve curriculum. These innovations have the capacity to improve the quality of experiences for everyone—if they are shared. For readers, published educational innovations provide a fresh perspective and often represent an opportunity to improve education at their own institutions. For those who create educational innovations, the publication process can be intimidating.

Planting the seed of the educational innovation, seeing it grow in one's institution, and keeping it alive can be challenging, yet advancing the educational innovation to publication is an opportunity to harvest its low-hanging fruit.

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