

## Tips for Junior Doctors and Medical Students: Writing and Publishing Undergraduate Textbooks

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### To the Editor,

Acknowledging that a life of learning is without end, we might assume that a doctor will amass a body of knowledge and experience sufficient to publish. However the timing of such an undertaking is debatable with some believing that medical textbooks published by junior doctors (broadly defined as doctors within their first four years of postgraduate training) or medical students is a step too far. Entering the world of medical textbook publishing is a daunting prospect for many. The skills necessary to publish an undergraduate textbook, in a profession one has only recently entered, are seldom taught. Unsurprisingly, junior-led publications remain an alien concept in many professions, not just medicine.

How then can junior-led publishing be postulated as a good idea? What could possibly convince juniors to rise to this challenge? Medical textbooks have traditionally taken a paternalistic approach, written by senior clinicians for the benefit of juniors. Although this model works, it places significant teaching pressures on senior doctors, and leaves the potential contribution of juniors untapped.<sup>1</sup>

Evidence shows that motivated juniors are effective teachers, utilizing their recent experience as learners to relate to current students.<sup>2</sup> In 2011, a systematic review of 19 studies assessing medical students as teachers concluded that peer-teaching in undergraduate medical programs was comparable to conventional teaching in selected contexts.<sup>2</sup> Reasons identified for the success of junior-led teaching include approachability of the tutors, their enthusiasm to teach, and the ability to deliver information on a similar cognitive level to students in their 'zone of proximal development'.<sup>1</sup>

Considering the existing evidence showing juniors to be effective clinical teachers, we hypothesize that similar advantages could be transferable to juniors writing and contributing to textbook chapters as well as to students as readers of junior led publications. In our experience, juniors seem to benefit directly from participating in the publishing process. Writing textbooks allows juniors to update their clinical knowledge with regard to common, everyday scenarios. Furthermore, converting complex ideas into language that new learners can understand improves editing, writing and teaching skills. Such benefits in professional development have been demonstrated in many junior-led teaching settings,<sup>4</sup> but not yet in publishing. Contributing to a textbook also comes with a sense of achievement, knowing that if it is successful, there will be a high degree of student engagement with the product. In addition, wider skills develop, such as leadership, time management and teamwork that come from working on large projects. By participating in textbook production and publication, juniors stand to not only consolidate their medical knowledge, but to also reinforce and develop their role as educators early in their medical careers.

'The Unofficial Guide to Medicine' project group is a publishing group led by doctors who have created a 'flipped publishing' model, meaning that textbook concepts and content are led

by juniors, not seniors.<sup>5</sup> Seniors still have a crucial role in this model as reviewers for factual accuracy, rather than primary writers. The 'flipped publishing' model introduces a new paradigm to publishing whereby juniors lead the publication of a textbook by planning, authoring and editing the content from the beginning of the publishing process to printing the final product. This approach has enjoyed much success, with textbooks from this series being added to national curriculums, being positively reviewed by medical journals, and showing a positive impact on the professional development of contributors, both in terms of general writing skills, and clinical skills.<sup>5</sup> Contributors have noted that the process 'helps to learn new topics and practice teaching by way of writing', helps 'develop ability to communicate complex ideas' and that being 'mentored by other juniors that have gone through the same process' was very valuable.<sup>6</sup>

Drawing heavily on our experiences and this approach, in this article we provide guidance for juniors wishing to contribute to an undergraduate medical textbook.

### **Tip 1: Engage with textbooks as a reviewer before attempting to write one.**

By critically analyzing an existing publication, you will gain insight into the writing and publishing process. This can be achieved by critically reading a manuscript in a journal, becoming familiar with current textbook styles, or more formally as a student panel member for publishing companies. Publishing companies frequently advertise for student reviewers and panelists on their websites. Experience reading and analyzing published textbooks is central to understanding how complex ideas are explained to learners. This includes the choice of language, as well as the use of features such as case studies to make material more digestible. Engagement with the textbook should go beyond just the written words and include developing an understanding of the graphic design and layout. Developing a critical awareness of textbooks undoubtedly prepares you for becoming an actual textbook author.

### **Tip 2: Establish a partnership with a publisher or develop a realistic self-publishing model, taking into account likely costs.**

To get a book from conception to the hands of your readers will often require the assistance of a publisher, or substantial personal financial investment to cover the costs of illustration, graphic design, proof reading, marketing, and initial printing. A publisher will take on these costs, and give you advice throughout. Publishers will expect formal submissions of proposals. Expectations vary from a single page containing a basic outline of the contents to a much more thorough application outlining i) the book contents ii) the unique selling points of the book iii) the target audiences and iv) full, written, example chapters. However, the major disadvantage of submitting to a publisher is that they may not be willing to accept your idea, and if they do, they are likely to limit your creative control over the product, including limitations on the number and type of images allowed. If you do decide to self-publish, you may consider producing a purely online textbook, or recruiting a sponsor to help reduce costs.

### **Tip 3: Have realistic expectations of fellow juniors.**

It is unlikely that you will be able to recruit a large cohort of

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highly experienced juniors in the field of publishing. However, other criteria can be used for recruitment. Consider keeping the project open to those that are enthusiastic, ambitious, and hardworking. Textbooks often require a considerable time commitment. Those that work with you must recognize this and be willing to commit to a potentially unpredictable workload. Furthermore, they may not be fully aware of the process in terms of book submission, such as copy editing, proof reading, and graphic design. Therefore, it is important to ensure that everyone is briefed about the process and what will happen with their work. We recommend the generation of 'author guides', comprising of a simple list of the requirements, and advice for authors. Regular communication between editors and authors to identify and address problems is central.

**Tip 4: Start small when delegating roles to new writing colleagues.**

The reasons for this tip are two-fold. Firstly, juniors who have not previously been involved in such a large project, either as contributors or editors, might have difficulty anticipating their commitments. By starting with small roles, editors can develop insight into what they might be able to expect from junior contributors. Secondly, starting small allows for an apprenticeship in textbook publishing for competent junior contributors, regularly getting feedback at each stage. When encouraging new juniors to contribute, small roles to delegate initially might include inviting contributors to offer feedback on current and possible future textbooks. This will not only help with review of coinciding projects, but it also allows an initial measure of their level of commitment and ability to contribute. Reviewers who show promise may then progress to become authors. This could be facilitated by providing them with templates to draft short sections of textbook chapters. Authors who show promise could then be offered the opportunity to co-edit a subsequent textbook.

**Tip 5: Collaborate with senior colleagues throughout the process.**

Juniors will often have limited experience in medical education and therefore less confidence in the material they produce. This could result in reduced reliability of output with oversimplified explanations or even incorrect information. Consequently, juniors may have to do a larger amount of research, and require several drafts of their work to be reviewed. Errors can be difficult to detect and the process can be very labor intensive if the project is solely junior-led.

Senior colleagues can help address this deficiency in knowledge and experience through their expertise and acquired clinical acumen. Therefore, it is helpful to ask seniors to approve the factual accuracy of the text at various stages along the production process. The value of bringing this strength of knowledge to an inexperienced junior writing group cannot be underestimated. Senior clinicians may also be involved in undergraduate courses, influence recommended reading lists and therefore be in a more authoritative position to help promote a publication.

**Tip 6: Develop a basic understanding of effective learning methods.**

The difference between being an effective clinician and being an effective teacher is a clear understanding of how students

learn. Reflect on the methods and styles used by your own educators, considering who was able to impart information to you, and compare what they did differently to other teachers who were less successful. The same reflection process can be undertaken for textbooks and internet sites you may have used.

Formal training in medical education is underpinned by gaining knowledge of learning theory. Understanding how adults learn effectively is invaluable when compiling textbooks. Depending on personal interest and time commitments, this theory could be studied simply by reading one of the core texts on medical education,<sup>7</sup> attending a short course, or even working towards a postgraduate qualification in medical education. Medical education theory will also help develop insight in giving effective feedback. This will be an invaluable skill to maximize the quality of the work undertaken by your fellow contributors.

**Tip 7: Use social media to your advantage in accessing your target audience.**

The advances in modern technology, including the internet, smart phones and social media, makes this the most exciting time to be involved in medical education. You are likely to have more experience in using social media than your seniors! Social media permits close, convenient, and continued interaction with the diverse student community, in a way not available to previous generations. Advertising is instant and can be free through social media sites such as Facebook and Twitter. These sites also offer direct communication to your reader group, which provides an ideal opportunity to ensure the product reflects the needs of students. By creating an online community centered around your publication, it will give the sense that it is being created 'by juniors for juniors'.

**Tip 8: Take advantage of your recent student learning experience to ensure the textbook relates to medical students.**

Juniors are, or have recently been medical students themselves, and can harness this strength in their writing. They are well-placed to understand curriculum content, and also to identify key areas of student difficulties. Juniors are likely to write with a focus on broader concepts, directly relevant to their clinical practice, rather than the minutiae of a given subject. Language is likely to reflect that used by juniors to understand difficult concepts. However, this needs to be balanced against the risk that junior contributors might focus on material needed for passing exams. Remember to ensure that your publication does not neglect areas relevant to clinical practice, which are less well-represented in medical school examinations.

**Tip 9: Seek input from juniors at every stage of textbook development.**

If you are writing a textbook for juniors, it is important to ensure that each element is appropriate for juniors. The target audience is best-placed to identify and communicate gaps in education that current textbooks fail to address. We therefore recommend involving juniors in every aspect of the development process including suggesting new titles, reviewing content, graphic design and approving the final printed text before publication. Recruiting contributing juniors can potentially be achieved through personal contacts or through social media. More junior input allows the book to appeal to a wide student

audience. In practical terms, this enables rapid and continual improvement of content in response to student needs or expert reviewer feedback. However, contributions by many authors may require significant editing and a larger time commitment before final submission of the manuscript. Being aware of these strengths and limitations will ensure both the authors and the publishers have realistic expectations of when the manuscript will be submitted.

**Tip 10: Cater to modern learning modalities.**

Undergraduate medical teaching has gone through dramatic transition over recent decades, with a move away from traditional lectures and learning factual material by rote towards simulation and e(electronic)-learning. Textbook material can be interactive within e-books and online formats, and content should embrace this. Examples include embedding videos in text, allowing students to discuss content in online forums (which can also provide invaluable insights for future editions) and having hyperlinks throughout the text to improve navigation. Speak to your publisher about what is possible and incorporate new technology into the content of the book.

**Tip 11: Ensure all work is original and have zero tolerance for plagiarism.**

Juniors may rely more heavily on reading other learning material, compared to seniors with a vast wealth of accumulated knowledge. This exacerbates the potential risk of accidental or even deliberate plagiarism of the text, clinical photographs and medical illustrations. These issues might not be immediately apparent to juniors. Give clear plagiarism guidelines to all contributors and make it explicitly clear to authors that plagiarism cannot, and will not be acceptable. We suggest anti-plagiarism software, such as TurnItIn (which is commonly used in universities, [www.turnitin.com](http://www.turnitin.com)), be used to identify overlap and plagiarism in all text prepared for publication. Such software, and any legal advice, is not free, so factor this as an essential cost to ensure credibility and to prevent future litigation. If using clinical photographs, consider generating a standardized consent form and ensure appropriate permissions are obtained. For example, in the United Kingdom all images taken by National Health Service (NHS) staff are owned by the NHS, not by the person who took the photograph.

**Conclusions**

Junior doctors and medical students have demonstrated their ability to be effective clinical teachers, yet their potential in writing textbooks has not been fully harnessed. These tips on how to write and publish a textbook provide practical guidance on how to contribute to the growing phenomenon of junior-led medical education. 'The Unofficial Guide to Medicine' project was conceived as a new approach to developing and publishing textbooks for medical students that puts juniors at the forefront of every aspect of the publishing process. This 'flipped publishing' model has enjoyed great international success.

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