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**SPECIAL ARTICLE**

**Flipped Publishing: A New Paradigm for Medical Textbooks**

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**ABSTRACT**

Medical textbooks remain an integral component of the undergraduate education pathway. These texts are traditionally prepared by senior clinicians or academics, based on their long experience of the subject matter. Medical students and junior doctors are commonly asked to review these books, but often have little role in influencing the content. This article will discuss the opening of a new paradigm in medical publishing, whereby students and junior doctors (juniors) take the lead in planning and producing the content of their textbooks with senior clinicians taking the role of reviewer.

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## Introduction

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Medical textbooks remain an integral component of the undergraduate education pathway. These texts are traditionally prepared by senior clinicians or academics, based on their long experience of the subject matter. Medical students and junior doctors are commonly asked to review these books, but often have little role in influencing the content. This article will discuss the opening of a new paradigm in medical publishing, whereby students and junior doctors (juniors) take the lead in planning and producing the content of their textbooks with senior clinicians taking the role of reviewer.

This flipped publishing model has been highly successful with the "Unofficial Guide to Medicine" Series. The first textbook in the series, "The Unofficial Guide to Passing OSCEs", involved 37 juniors as authors, alongside 38 expert reviewers. Feedback has reflected the value of the involvement of juniors, with one student commenting that the book was *"formatted in a similar way to how most people make notes themselves"*. Four further titles have been released, with over 21, 000 book sales to date, and evidence of benefits for both those reading and those writing the books alike (1).

## The Role of Textbooks in Medical Education

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For generations, textbooks have had a crucial role in the learning process at medical school. Teachers will often recommend specific textbooks in their lectures or course reading lists, expecting students to use such books to consolidate knowledge gained in class. The textbooks are generally considered as an accurate and comprehensive source of information that are essential to grasping both the depth and breadth of medicine.

However, in recent times there has been a rapid rise in alternative learning media including e-learning resources such as online tutorials and smartphone applications. They have gained great traction with students due to their portability, accessibility and convenience. Additionally they have the benefit of being constantly updated, unlike textbooks, which due to production costs are generally only updated every five years. These novel approaches have been shown to play a key role in improving learning efficiency (2). However, although these new learning media are gaining popularity, students still consider traditional textbooks central to medical education

(3). This is evidence that the traditional senior led approach is adapting to changing student demand.

## The Senior-Led Approach

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Most textbooks are planned, authored, and edited by a senior academic or clinician. They bring the asset of many years of accumulated expertise, knowledge, and experience in their specialist discipline. They are also likely to be involved in regularly teaching medical students and potentially medical curriculum design and often have formal qualifications in medical education. Therefore they have the potential to relate their teaching to both (i) current best practice and (ii) current curriculums. The established reputation of senior clinicians is more likely to result in textbooks being bought by libraries, being incorporated into reading lists and being recommended by other members of the teaching faculty, many of whom will be like-minded colleagues.

An inevitable consequence of all these undoubted assets is that senior authors have only distant experience of the initial stages of engaging with their subject. This leads to a potential disconnection between the written text and current trends in curricula design and new approaches to learner engagement. Specifically, there is a risk that seniors may over emphasise the complexities, without reinforcing the specific challenges that early learners struggle to understand. Seniors may also give overly theoretical information, without giving juniors the practical guidance that they may be in search of.

## Advantages and Disadvantages for Senior Authors

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Seniors gain significant benefits from publishing. Any textbook with an established publishing house demonstrates credibility as a teacher, both for the author and for the institution they are attached to. The textbook will help supplement any teaching which they do. Relying on other clinicians' textbooks may cause confusion if the textbook does not fully reflect the lecturer's perspective on best teaching or clinical practice. There is also a wider fulfilment that comes from being able to teach junior colleagues beyond your immediate face-to-face reach, and in collaborating with a wide range of teachers across disciplines that help you put the book together. The biggest disadvantage is perhaps the time commitment, with many textbooks taking several hundred hours to complete. The real time required

to complete a textbook is rarely recognised in clinical or academic contracts, placing an inevitable strain on the individuals involved.

### The Junior Led Approach

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A new paradigm in medical publishing is now emerging. This involves more junior authors planning, authoring and editing the content. Seniors are then brought in as reviewers to ensure factual accuracy.

In contrast to seniors, the forte of juniors is their recent exposure to the medical curriculum. This means that juniors are well placed to relate to their peers, and can write in a language understandable to them as recent learners. Anything that is written can also be contextualised around current medical students and junior doctor learning needs, utilising their recent experiences revising for undergraduate assessments. Furthermore, juniors arguably have a much greater understanding of the role of textbooks in medical education, having recently been heavily reliant on them for medical school. This may mean that juniors are perhaps better placed to identify gaps in the textbook market than seniors.

There is also clear evidence that peer-led and peer-delivered medical education, including publication, is not only effective but is comparable to conventional methods. Yu et al's 2011 systematic review of 19 studies of peer-assisted learning (PAL) concluded that "peer-teaching and PAL activities, implemented in a highly selective context, can achieve equivalent student learning outcomes when compared to the conventional teaching methods" (4). This evidence suggests that junior-delivered teaching may have a larger role to play in medical education than previously recognised.

However, juniors are unlikely to have significant publishing or teaching experience. Not only does this make it difficult to write a textbook, but it also makes it difficult to get commissioned for a textbook, or for the textbook to be featured on a recommended reading list. More importantly, if juniors are unfamiliar with the process, it may lead to copyright or plagiarism concerns. There is also a possibility that juniors may be more fixated on material to pass exams, rather than performing well clinically (6). This may compromise overall knowledge, but may not stop students purchasing such books if their primary concern is exam performance.

Additionally, although junior authors have been shown to be effective clinical teachers, a supplementary role for seniors is clearly desirable (6-8). This is essential to ensure factual accuracy of information, as well as broad context. This ensures that the potential advantages of junior-led writing are preserved, whilst also ensuring accurate sign-off for final content.

### Advantages and Disadvantages for Junior Authors

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Through the process of writing a textbook, juniors gain a great deal for their future role as medical professionals. This can be divided into gains in skills and knowledge, and enhancement of their CV. Firstly, researching and writing a textbook re-enforces key concepts for authors. They also have an opportunity to receive direct feedback on their work, which facilitates development of their writing and editing skills. These elements of professional development are supported by research in near-peer teaching (7-9).

Establishing a relationship with a publisher will also place them in a strong position when they are looking to publish other textbooks in the future. As the bottle necking effect increases competition for many specialties, achievements such as textbook chapters and publications are becoming ever more desirable.

In Cate's 2007 publication on the benefits of peer-led medical education they propose that peer-led teaching can prepare physicians for their future role as educators (10). Contributing to medical textbooks therefore not only enhances personal learning but perhaps also reinforces the idea of doctors being educators earlier on in their career. Disadvantages to authors include the significant time commitment the process will require, particularly given the amount of support a junior is likely to require for a first title. Medical students have exams and job applications to consider, which will all need to be balanced with textbook writing. Good time management and organisational skills are critical.

### Conclusion

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Textbooks remain a vital resource for the medical students of today. Although the wealth of experience seniors bring is of immense value, juniors have the potential to add significantly to the

medical textbook library. However, defining their role should be considered carefully, with juniors likely to require far more guidance than senior authors. This includes factors such as plagiarism regulations, but also keeping seniors involved to ensure factual accuracy of information. Therefore, although juniors lack the clinical expertise and

writing experience of seniors, they may offer a pragmatic, relevant perspective due to recent curriculum exposure. "The Unofficial Guide to Medicine" Series is an example of how this model has been successfully implemented, and it continues to attract both junior authors, and senior reviewers alike.

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