E-textbooks: opportunities, innovations, distractions and dilemmas

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Given huge advances in information technology over the past 20 years, why do students still use textbooks when there are much better ways to deliver courseware digitally?

This article explores the evolution of the textbook and examines why, despite huge investments by publishers, today's students are spending less on textbooks and are not yet using electronic resources to replace them, relying instead on free handouts and Google. This is in stark contrast to the progress that has been made in professional markets where publishers like Thomson, Reed and Wolters Kluwer now derive the majority of their revenues from digital products and services. Academics, it is argued, need to embrace digital courseware solutions, librarians need to offer new services and market themselves more effectively, and publishers need to think beyond e-books to deliver superior learning solutions.

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Introduction

Despite enormous advances in technology, the textbook is still the way most undergraduates receive their core course content.

This article examines how the textbook has evolved into its present form and asks whether it is still relevant to contemporary students. It briefly discusses the economics of textbook publishing and ends by highlighting some innovations, distractions and dilemmas as well as some opportunities for publishers, educators and librarians.

Background

The first question to be considered is: what is a textbook? It is essentially a teaching and learning resource that matches the course requirements as far as possible. It follows a logical sequence; for example, in introductory economics, supply and demand is usually taught before European Monetary Union. The textbook is a synthesis of current knowledge, not a primary research tool or a contribution to cutting-edge thinking. It usually includes various supplements which are increasingly delivered online, and it contains pedagogical features designed to make it accessible and attractive to readers.

For students, a textbook is a learning aid to help them get through the course. For educators, it is a tool to help them teach the course. In the past, textbooks were just that – books with a lot of text in them. Learning was not meant to be fun. Textbooks looked quite boring, including none of the whizzy graphics or fancy features that they do today.

During the late 1980s, editors decided to add colour and diagrams to textbooks which, as a result, started to look more exciting. Of course, improvements did not stop there. Not wanting to be outdone by publisher A, publisher B decided to add a lecturer's guide, and pretty soon publisher C added books of tests. Then publisher A realized that his textbook was looking rather tired compared with his rivals' offerings and decided to publish a new edition with much higher specifications than the previous one. So he invested in full-colour

printing throughout with dramatic diagrams, glorious graphics and fantastic photography.

By the 1990s, computers started being used by ordinary students in their everyday work – not just by geeks. So publishers decided to add software to the ever-growing textbook package. Floppy disks made a brief appearance as textbook supplements; they were followed by CD ROMs and, by the late 1990s, websites.

With each new edition the books became larger and larger, with an increasing number of supplements and pedagogical features, until at last the textbook evolved into the form that we know today. For courses with large numbers of students, any given textbook contains numerous bells and whistles and represents an investment for publishers that runs well into seven figures. As a result of this 'arms race', only publishers with good access to the US undergraduate market can now afford to publish a fully featured textbook.

Economic aspects

The forces shaping the evolution of the textbook have much more to do with economics than with pedagogical effectiveness. Thirty years ago, on a printing of 10,000 copies, the variable costs of royalties and printing were about one third each, while the fixed costs of typesetting, permissions, design and manuscript preparation made up the other third. Today, the share of revenue taken by author royalties has not changed much, and neither has the share taken by printing even though images are now mostly four-colour throughout, compared with monochrome thirty years ago. The fixed cost elements have increased in number to include art, research and extras such as test banks.

Today's students get much more for their money than students did in the past, and yet there is a lot of evidence to show that – at least in the UK – they are buying fewer and fewer textbooks. A recent Publishers Association survey of most of the leading textbook publishers clearly shows that the UK textbook market has remained static over the last three years in value terms, with an absolute decline in 2005 vs. 2003 in 18 out of 35 subjects measured. Assuming annual price increases of around 5%, this represents a very significant decline of textbook sales in volume terms.

Why is this? I think that there are three main forces at work:

1) changes in teaching philosophy,
2) changes in student expectations, and
3) competition among publishers.

Each of these will be reviewed in turn.

Changes in teaching philosophy
For some academics, teaching is an unwelcome intrusion into their research time. Many believe that learning should not be fun and that spoon-feeding is bad for the mind. Such faculty espouse independent learning and give students more responsibility for their own learning, believing that this approach will better equip them for the real world. This approach to teaching, which is more common in the UK than in the US, leads to textbooks being loosely recommended rather than prescribed. Thus diligent, smarter or poorer students get by with lecture handouts, Google and the library.

Changes in student expectations
Today's students want results at minimum cost, particularly when they're paying hefty tuition and other mandated fees. They often have short attention spans, and they expect very user-friendly presentation. Google is free, so anything that they pay for must be demonstrably better. Just-in-time delivery – getting a chapter or journal article delivered directly to their computer exactly when they are needed – is a big benefit, and so is easy access to relevant material for further study and research.

Competition among publishers
In a static market, the only way a publisher can grow is to win market share. Publishers try to do this by creating bigger and better textbooks and persuading educators to recommend them so that students will buy them from a bookshop. This traditional business model is showing increasing signs of breaking down.

There are plenty of booksellers on campuses around the country who pack up and return over half of the copies of the textbooks that they ordered at the start of a semester because there was a mismatch between the number of students registered for a course and those that bought the textbook recommended for the course. This

disconnect has led publishers to become increasingly defensive as they try to combat second-hand sales and reduced sell-through, rather than develop better learning tools. Growth, if any, has to come from price increases rather than from volume sales. It has become a story of diminishing returns, with more copies coming back from the bookshops and less return on investment.

Weak lecturer recommendations, second-hand sales and free web resources have resulted in increased costs for publishers, in turn leading to higher prices for students. In the US, textbooks are priced at double the UK price and US publishers go to great lengths to try to differentiate the non-US editions to prevent 'leakage' of low-price textbooks back into the US. This price differential has opened the door to price arbitrageurs (perfectly legal but harmful to publishers), piracy (illegal in most countries but hard to stop) and students shopping around for bargains on international websites (entirely rational consumer behaviour). For example: Kotler and Armstrong's *Principles of Marketing* is listed at $160 on Pearson Education's US website and priced at £42.99 for the international edition on the UK website. Mankiw's *Principles of Economics* (Thomson Learning) is $141.98 on Amazon.com while the European edition, Mankiw and Taylor's *Economics*, is £39.89 on Amazon.co.uk.

Legal, financial and medical publishers have achieved impressive growth in revenue and profitability by migrating to digital content and work flow solutions delivered directly to the practitioner's desktop or mobile device. This has not been the case for textbooks. As a result, Thomson, Reed and Wolters Kluwer have all announced their intention to sell their educational publishing businesses. The reason they give is that educational publishing no longer fits with their strategy. Underneath this lies a lot of frustration with the slow pace at which schools and colleges are moving to, and are prepared to pay for, digital solutions.

Discussion

If digital materials are so much better why haven't they replaced textbooks altogether? In the 1980s, at conferences eminent speakers would predict that the book would be dead within 10 or 20 years. Supporters of the book – not surprisingly there are

a lot of those within the publishing industry – cite various advantages of the format, including user-friendliness of ink on paper compared to pixels on a screen and portability as reasons why e-books have not taken off as expected. But, with greatly improved screen technology, new e-book readers and near universal ownership of mobile phones, i-pods and other portable communication devices, these advantages are rapidly disappearing.

Textbook	Digital
+ portable	+ i-pods, mobile phones
+ tactile	+ i-pods, mobile phones
+ no equipment required	+ ubiquitous items
+ text better on paper	+ e-paper, print on demand
+ organizing framework	+ learner journeys
- linear	+ interactive
- single medium	+ multiple media
- too much or too little	+ as much as you need
- single learning style	+ individual learning styles

Table 1. Relative advantages (+) and disadvantages (-) of print and digital textbook

Relative advantages and disadvantages to the learner of print versus digital are outlined in Table 1. From this perspective, digital wins hands down, leaving familiarity and the lack of well-developed digital products in the market as the most likely explanations for the slow pace of adoption of digital alternatives to the textbook by educators in UK universities.

The context in which textbooks are used within universities lends further weight to the case for digital resources. The amount of face time that students have with their tutors is declining, class sizes are increasing, reading lists typically contain six or more recommended titles and many students never physically visit the library. If a textbook is not strongly prescribed, it is understandable that students will spend as little as possible of their disposable income on textbooks, particularly as they are so used to finding information and communicating online. In a recent survey of students at universities in Michigan, conducted by Thomson Gale, Google was cited as the first destination by nearly all respondents when asked how they set about researching a homework assignment. Today's students have become 'Google-ized'.

The basic function of any learning resource is to help move the learner up the pyramid from data to information to knowledge to understanding and

perhaps, eventually, even to wisdom. In printed form, searching for the needed content across several sources is not easy. The researcher has to make his or her own connections between disparate content items packaged in different ways and held in different physical locations. If all the content is digital, properly linked and well presented, this task becomes much easier. But digitizing a textbook does not in itself offer a better route up the learning pyramid.

In the traditional book-centric model of teaching, supplementary resources such as learning assessments, case-studies and journal articles are not directly mapped to specific learning objectives and it requires considerable effort to locate the resource and then find the right bit of it. Even if this content is all available digitally, it is likely that it is held in several different formats in a variety of content silos. A much better model, I suggest, is to cluster related content items around a specific learning objective rather than a complete textbook. In this model the textbook becomes a resource which is broken down into its component parts that can be accessed in a number of different ways as shown in the following diagram.

The learning model presented in Figure 1 transcends not only individual product barriers within a content silo, but the whole problem of content silos goes away. In this example, there are even links to multi-media content on the open web such as YouTube and Flickr. The tools to build this type of product are available now, and the benefits to students are clear and compelling. Firstly, instant access to directly-relevant and authoritative content is available as and when it is needed. Secondly, learners can research a topic to whatever depth is appropriate for the assignment that they are doing. Thirdly, a well-constructed online learning resource offers students a learning experience that is much richer, deeper, more engaging and more effective than any textbook. Delivered to a mobile phone, i-pod or PDA, digital materials can also be fully portable.

Why is it, then, that students and educators everywhere are not demanding this next generation of learning resource? In Europe only about 10% of Thomson Learning's revenue comes from digital products that are priced and sold; publishers mostly give away digital supplements with the textbook.

Investing in what is technically possible is a risky business for publishers if academics are not ready to change the way they teach. It also fundamentally changes the distribution chain: in this software-as-a-service model, it is essential to build direct relationships with end-users – the students – which means by-passing the academic bookshop.

The term 'e-book' is actually a distraction for publishers. Delivering textbooks digitally, for example in PDF format, is not adding a great deal of value as most of the benefit lies in breaking down content into much smaller chunks, at least to the chapter level and preferably more granularly than that. Educational publishers have traditionally looked on campus bookshops as essential business partners in the distribution chain from author to reader. If they are to continue to play a part in the distribution of digital products, bookshops will need to re-invent themselves, perhaps as print-on-demand shops, general-purpose retailers or as part of the university's information service which includes the library.
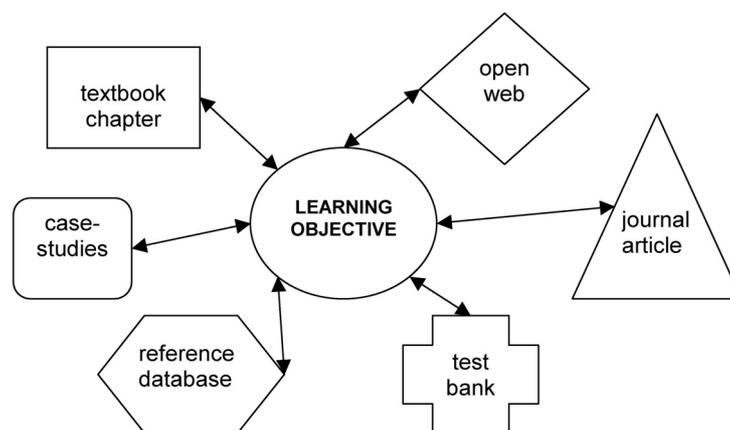
Figure 1. Learning model

New digital publishing platforms and search technologies have made it possible to access vast amounts of content more easily than ever before. The publisher's job is to make this content precisely relevant, authoritative, well presented and easy to use. It is possible to tailor content to the very specific needs of an individual module of a course for a student with a particular learning style and to link each learning object to others to facilitate discovery or to present a highly structured learning journey. Publishers need to learn from community sites like MySpace, Facebook and YouTube and music sites like Napster and iTunes how content is packaged, accessed, mixed, shared and consumed by today's 16-25 year-olds, people who take Web 2.0 applications for granted.

While the arguments for digital learning resources to replace textbooks are – in my view – compelling, colleges and universities are still much less market-driven and slower to change than businesses. Lawyers, doctors and investment bankers expect real-time customized information at the touch of a button. Academics, by and large, are much less demanding when it comes to teaching resources.

As a progressive publisher, I would love to believe in 'if we build it they will come'. But being a pragmatist as well as a digital zealot, I know it's not that simple.

Conclusion

This paper concludes with three calls to action.

To university management: compete for students' attention as well as fee income. If you prescribe digital courseware, you will be able to give your students much better value for money and help them get better results. Better still, build all learning resources into the course fees and you will be able to negotiate great deals with publishers.

To librarians: as campus bookshops continue to close, there has never been a better time to increase the influence of the library and its status within the institution. This will require some redefinition of the role of the librarian and a more proactive approach to marketing.

And, finally, to publishers: traditional textbooks will not become extinct any time soon, but you need to think 'outside the book.' Start thinking in terms of digital learning objects, not books on screens.

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