Educational Publishing in the Digital Era

by Graham Taylor

Table of contents

1. Introduction

Successful educational publishing depends entirely on meeting precise curriculum needs at national level or below. Every country has its own local curriculum, its own language or languages of instruction, its own cultural heritage, and its own pedagogical traditions. More populous countries often operate a federated administration, with the curriculum devolved to regional, provincial, or state levels, requiring publishers to focus even more closely on a diversity of local needs. Much of the profusion of inadequate educational and instructional content now available around the world and on the Internet, in print or digital form, has not been created by specialist educational publishers and professional authors and has therefore *not* been crafted to be appropriate to these local needs. By contrast, *quality* educational content, which by definition, is closely adapted to these needs, requires expertise and investment from specialist educational publishers and their authors.

Teachers need to be able to choose from a market of 'mix and match' content solutions that align with the diversity of teaching styles, teaching experience, and digital technology involved in classrooms. A combination of formats, variously termed 'blended' or 'hybrid', needs to be made available by publishers so that teachers are enabled to teach as they prefer to teach. The challenge is to make high-quality content available in widely used, useful, and useable formats, always with an awareness of current trends in technology and teaching practice.

2. Specialist educational publishers work in a climate of collaboration

Publishers bring choice and diversity to the marketplace, as well as stimulus and support for innovation, and close collaborations between themselves and government agencies, teachers, and authors.

Governments can set standards and targets, their agencies can evolve appropriate curricula, but effective delivery in the classroom needs capable teachers, who in turn need trusted tools and carefully crafted content from specialist publishers and experienced authors to do the job. Publishers pick up where policymakers and governments leave off.

An unstructured archive of open source material (such as OERs[1]) may appear superficially to be attractive, potentially sufficient for all needs, and cost effective, but extensive experience[2] suggests that OER repositories, while widely used to add breadth and variety, do not constitute a sustainable solution for core mainstream educational content, particularly applied to specific K-12 curriculum needs. It is the availability of carefully crafted learning resources, aligned with local curricular, assessment, cultural, and pedagogic needs, which is crucial for the delivery of high-quality education.

---

[1] According to UNESCO: Open Educational Resources (OER) are teaching, learning and research materials in any medium — digital or otherwise — that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. https://en.unesco.org/themes/building-knowledge-societies/oer

[2] Comment tends to be available on the use and impact of OERs in Higher Education and lifelong learning more than for specific K-12 curricula, but feedback suggests that significant hurdles remain associated with discoverability, quality control, selection and aggregation in line with user needs.

2.1   The essential coordinating role of the publisher

The essence of successful publishing in any medium is taking an author's content to market. Publishers invest in intellectual property; they add value through services they fund, including editorial, design, production, branding, marketing, and distribution, all within the mission of delivering content that is in demand by readers. For educational content to be classified as 'high-quality content', this means 'fit for purpose', closely aligned to the specific needs of the local market, which can be national or regional. It is rarely possible to market and sell books and digital resources developed for one nation's curriculum into another country without extensive adaptation. So, specialist educational publishers generally only have one core market, and they succeed or fail within it. 'Closely aligned' in the sentence above means in line with: the curriculum (different in every country); the assessment system (different in every country); the pedagogical traditions and capabilities of local teachers; the pace of (ed) tech development; the language of instruction; the cultural context; and local social norms. For K-10 (4-16 year olds) especially, un-adapted so-called 'international' content is unlikely to meet these criteria or fulfil many of these local needs.

Publishers are investors and need to find sources of funding that can deliver a return on their investment. Publishers commission authors to craft content appropriate to market needs. Meeting those needs delivers a favourable return for users and for investors, thus stimulating more investment, more innovation, more choice and a healthy market for growth and development. Restricting choice, stunting innovation, deterring investment through single-text adoptions, state monopolies, or generally investing public funds on the **supply** (production) side, rather than on the **demand** (choice) side, which allows teachers to choose the resources appropriate to their needs, will inevitably lead to specialist educational publishers withdrawing from the market.

Publishers invest from success and experience, using funds derived from revenues accrued from current and previous ventures. Success funds success, so there is a virtuous circle here: by meeting the needs of teachers for resources appropriate to deliver the curriculum and by using technology that works, publishers succeed in a market, so that market gets stronger and provides a wider choice of more resources for more teachers to deliver the curriculum.

Publishers are also creditors of last resort to the supply chain. They are the risk takers, the entrepreneurs, the market makers. If publishers' projects fail, they pick up the costs. They fund the actors in the value chain that connects authors to readers: editors, designers, illustrators, tech providers, printers, agents, wholesalers, distributors and retailers. Publishers are media and tech neutral: what works, works. They do not leverage their own preferred technology solutions; instead most will work with partners to deliver solutions that align with the needs of teachers and their classrooms.

2.1.1 Examples of best practice — Successful collaborations

It is not uncommon for publishers to contribute their experience and expertise as partners in developing the curriculum itself, as well as being trusted by teachers to develop the resources they will need to deliver a curriculum. The fruits of successful collaborations can be seen in beneficial outcomes in many countries.

Here are some examples:

- **Finland** has one of the best performing educational systems in the world, as demonstrated consistently by high OECD/PISA[3] results. Apart from the quality and motivation of their teachers[4], a strong factor is the faith that these teachers have in publishers to develop the resources they need at the right time. The Finnish Agency for Education works together with teachers and publishers in a climate of trust to develop the curriculum, and publishers then compete to develop resources and to invest in innovations from which teachers can select the best materials;

- **Singapore** is admired for its educational achievements. The Singaporean Ministry of Education sets the curriculum and publishers win contracts through a tendering process that rewards innovation. Publishers are invited to showcase and share their experience and expertise to develop new resources and formats;[5]

- **Kenya** has a nation-wide Digital Literacy Programme[6] in all primary schools, involving laptops and tablets pre-loaded with interactive digital content in key subjects funded by the Kenyan Ministry of Education. Publishers are encouraged to develop material according to objective standards for approval. The Programme involves 90,000 teachers, 1 million devices, 89% of primary schools and 20 Kenyan publishers;

- **Ghana** is set to become the first country in Africa to have a law on book development associated with a functional national book policy. The Ghana Book Development Agency recognises that the Ghanaian Ministry of Education needs to involve publishers to deliver quality education. A new curriculum for primary schools was introduced in April 2019, and the government will procure three textbooks per subject after evaluation by the National Council for Curriculum and Assessment;

- **Ivory Coast** has encouraged competition in its educational market by guaranteeing a choice of three textbooks per subject, made available to pupils for free. Textbooks are procured through a tender process for books that deliver the curriculum and the required pedagogical approach. The collaboration has resulted not only in more publishers investing, but growth in local publishers succeeding against international competition;

- **Germany** has 16 Länder or regional governments, each with their own curriculum, resulting in curricula comprising around 4,000 active subjects per year, changing at the rate of up to 15% per year. The system involves 43,000 schools, 700,000 teachers and 11 million students. Around 75 publishers and 30,000 authors produce about 8,000 new editions per year of approximately 40,000 titles in stock. The country operates on an approval system for new textbooks, which takes 3 to 8 months. Resourcing such a diverse system is only possible through close collaboration between publishers, authors, teachers, and the system of government approvals that ensures curriculum alignment and compliance with pedagogical standards;

- Hodder Education, a significant publisher of resources for UK and Caribbean schools, is best known in **The Bahamas** for the development, trialling and publishing of the primary mathematics resources for students and teachers, in partnership with the Bahamian Ministry

---

[3] Results of the PISA test in 2018 were published on 3 December 2019: http://www.oecd.org/pisa/publications/pisa-2018-results.htm

[4] Teachers in Finland are required to have a Masters degree: http://ncee.org/what-we-do/center-on-international-education-benchmarking/top-performing-countries/finland-overview/finland-teacher-and-principal-quality/

[5] https://www.moe.gov.sg/education/syllabuses/approved-textbook-list

[6] Digischool: the Digital Literacy Programme: http://icta.go.ke/digischool/

of Education, teachers and local and international subject experts. This has enabled a truly local resource with integrated Bahamian cultural examples matched to the Ministry's curriculum;

• Cambridge University Press has worked with the Ministry of Education in **Oman** since 2017 to support the successful implementation of maths and science Grades 1-8 reforms.[7] The work involves the translation into Arabic and complete contextualisation of the content, design, and illustration of Cambridge teaching and learning materials, so that they are fully Omani whilst reflecting international standards. Cambridge built a team across their Press and Assessment divisions to support the Ministry in ensuring that the curriculum materials and associated assessment, were the right fit for the Omani classroom context. Cambridge designed a training programme for teachers, which included bringing the original authors of the books over to Oman to support the teachers in understanding the theory and pedagogy behind their creation. They also recorded video interviews with the authors, in which the approach of the books could be described by those who wrote them, direct to those who would be teaching with them. The partnership with the Ministry has included capacity development with curriculum teams in the analysis and review of materials, so that efficient ways of working could be established. Finally, Cambridge supported the Ministry in their stakeholder engagement activity by designing and delivering a communication plan, preparing teachers, parents, and students for the new curriculum.

2.1.2 Examples of bad practice — Strategies worth avoiding

For publishers to operate — bringing choice, innovation, and collaboration with them — a funded secure primary market needs to be available to attract investment. If the primary market falls away, undermined by lack of funding, or legally enabled appropriations, or illegitimate downstream leakage of heavily invested digital resources through piracy, in time there will be no specialist content produced that is adapted for local needs. The creative engine will stall, and provision through collective licensing or dependence on exceptions will not be able to compensate.

Examples where this is happening include:

• **Canada**, where exceptions in national law enabling unremunerated use for educational purposes of significant appropriations from specialist educational content have undermined the primary market for locally published material;[8]

• **Republic of South Africa**, previously a vigorous and diverse market, where specialist educational publishers now increasingly have fewer opportunities to publish for mainstream education, undermined by state-funded self-publishing by the RSA Department for Basic Education delivering printed textbooks and free-to-use PDFs directly to schools. While the Copyright Amendment Bill currently awaiting presidential signature threatens to enable the unremunerated use of any content for educational purposes, thereby taking away the right of authors to earn their living.[9] Publishers will not and cannot license quality material into the market if such threats persist;

---

[7] https://www.omanobserver.om/education-ministry-cambridge-sign-pact/

[8] https://www.accesscopyright.ca/media/announcements/access-copyright-statement-regarding-standing-committee-on-industry-science-and-technology-s-copyright-act-review-report/

[9] https://www.pressreader.com/south-africa/citypress/20181111/282415580307574

- **Hungary**, where government policy has completely undermined the primary market for specialist educational publishers.[10] State institutions control accreditations and operate licences for the exclusive supply of content to schools, thereby making it virtually impossible for independent educational publishers to stay in the market for mainstream curriculum material. Choice, innovation and quality are already suffering.

High-quality educational content means that it is closely aligned with local needs: language, curriculum, culture, and pedagogic capabilities. Crafting such content requires skill, experience, knowledge and investment. Most successful, durable and widely used educational content is specifically tailored to national, state, regional or provincial needs. Therefore, the educational content has little market potential in other jurisdictions, even between states in a federation, as applies in Spain, Germany or USA. To take away that market, the *only* market for most specialist educational publishers, through overly broad or uncompensated exceptions is devastating, and inevitably means that publishers will be forced to withdraw from the market, leaving schools, teachers, and students dependent on state-funded provisions, which are often of poor quality and with short longevity, or on material developed for other circumstances and or jurisdictions. Such strategies can also fuel social inequalities, with better-off parents and schools motivated by their dissatisfactions to source higher-quality textbooks and learning resources from specialist private publishers in a market unavailable to mainstream schools.

3.   How the market operates — The road to digital transformation

The physical means for publishers to deliver their content are now very diverse and continue to evolve as tech innovations open up new channels to market or change the power structure within existing channels.

For 600 years, publishing — which invests in and adds value to intellectual property, and which evolved from printing as a means to feed the machines and grow output — has delivered product to market and connected authors to readers by means of the physical book. Despite the welcome arrival over the last forty years of eBooks, websites, platforms and a plethora of interactive material, for many reading situations, including in the classroom, the seminar room, and for private study, the physical book remains the medium of choice. Digital content sales are growing everywhere, but often at a slower pace than was expected. It is the experience of publishers across many countries that digital sales do not subsume print sales and that a hybrid market is evolving organically. The physical book is a mature technology — portable, readable, personal, attractive, durable, and generally good value for what it delivers: an education for those who choose to read it.[11]

Progressively, the content of most physical books is now also available in electronic form, delivered via portable devices, some dedicated (Kindle), most multi-functional (tablets, laptops), and some from another direction entirely (smartphones). Content is delivered as simple PDFs or more functional EPUB[12] files. But the concept remains essentially the same: specialist, appropriate content, carefully crafted to deliver curriculum needs.

---

[10] https://www.internationalpublishers.org/news/866-educational-publishing-in-hungary-an-interview-with-dr-ildiko-toeroek
[11] There is a growing body of research evidence which suggests that reading comprehension is better in print, itself a mature technology, than on screens: http://erearcost.eu
[12] EPUB is a technical standard for e-book files developed by the International Digital Publishing Forum: http://idpf.org

3.1 Publishers and EdTech[13]

In reality, virtually all educational content is delivered through blended or hybrid technologies, a mix-and-match provision of printed textbooks, simple e-textbooks (PDFs or EPUB files), advanced platform-based interactive digital textbooks, and sophisticated learning management systems that may enshrine artificial intelligence and machine learning technologies.

For EdTech to succeed in the classroom, a critical combination of factors is needed: appropriate hardware, operating software, access to the Internet, sufficient bandwidth, digital literacy programmes, teacher training support and — crucially — content that delivers the needs of the curriculum, precisely and completely, 100%. Larger publishers in populous countries often invest in their own platforms, which enshrine both specialist content and learning management systems.[14] EdTech providers based in countries such as Finland, Estonia, Hungary, and Indonesia[15] have also developed platforms that publisher partners in other countries can use to create and deliver their own specialist content.

The next step along the road to digital 'transformation' is delivery via platforms that enable content to be presented in animated, interactive styles, with associated visuals and with links to related content. Several suppliers offer so-called 'white label' platforms that are used by publishers to flow in and adapt their own content in line with local market needs. These platforms are designed to be intuitive, easy to use and navigate by teachers with only lower intermediate digital literacy skills, and they extend the concept of structured material crafted in line with curriculum needs.

The current high-water mark for technology to deliver educational content is in association with an overarching learning management platform. A pervasive example for schools is *Google Classroom*, available via chromebooks and OEMs (Other Equipment Manufacturers). Notwithstanding concerns about Google's seemingly inexorable growth of global market share, combined with worries about data accumulation and treatment, and although Google is careful to point out that technology is only a means to an end and that student engagement comes through the content, this technology enshrines a suite of tools for classroom management that enable different teaching strategies, including active learning and personalised learning, and claims to support collaboration, problem solving, and critical thinking. Developments in AI (artificial intelligence) and ML (machine learning) applications enshrined in such platforms beckon from the future.[16] Google invites 'integrations' to its platform, including content.[17]

ALEKS Corporation,[18] a part of McGraw Hill Education is a leader with 30 years of experience in the creation of Web-based, artificially intelligent, educational software. ALEKS assessment and learning technologies were originally developed by a team of cognitive scientists and software engineers at the University of California, Irvine, with major funding from the National Science Foundation. ALEKS is founded on ground-breaking research in mathematical cognitive science known as Knowledge Space Theory.[19] Through adaptive questioning, ALEKS accurately assesses a student's knowledge

---

[13] EdTech refers to software designed to enhance teacher-led learning in classrooms and improve students' education outcomes.

[14] For example: Pearson, Houghton Mifflin Harcourt, Ernst Klett Verlag, McGraw Hill.

[15] Finland: http://cloubi.com; Estonia : https://www.avita.ee/30092; Hungary: https://www.mozaweb.com; Indonesia: https://www.pesonaedu.com.

[16] Notwithstanding suggestions that this 'future' is problematic: John Naughton, 'Can the planet really afford the exorbitant power demands of machine learning?' https://www.theguardian.com/commentisfree/2019/nov/16/can-planet-afford-exorbitant-power-demands-of-machine-learning

[17] See for example: https://www.pearson.com/us/about/news-events/news/2019/01/pearson-realize_-selected-as-google-for-education-premier-partne.html

[18] https://www.aleks.com

[19] https://www.aleks.com/about_aleks/knowledge_space_theory

state and then delivers targeted instruction on the exact topics the student is most ready to learn. ALEKS has been used by millions of students in over 100 different mathematics, science, and business courses at thousands of K-12 schools, colleges, and universities throughout the world.

4.   Channels to market: The demand side

Publishers and authors not only need the physical means for their carefully crafted content to reach their readers, but also channels to the primary market through which funds can flow back. For K-12 (4-18 year olds) schoolbooks, funding — generally but not universally — involves the investment of public funds, which may be applied on the demand side or the supply side of the primary market. Market characteristics and market diversity will be strongly influenced by the extent of government and legislative interventions.

If public funds are applied on the **demand side**, chances are that a healthy organic market will develop, and specialist educational publishers will compete to deliver a diversity of content resources employing a range of technologies that meet teachers' needs. Generally, funding budgets are allocated to schools under various methodologies, which enable teachers to choose the resources they prefer to deliver the curriculum, either from an open market or from lists approved at national or local level. Procurement may be by schools directly, or via trading intermediaries. Value chains (the flow of funds from users to producers) vary widely between nations. In some countries, governments organise tenders to control costs and manage value. But essentially, these demand-fuelled primary markets are open and publishers are free to invest and engage at their own risk.

Complementary to the primary curriculum market, there is always demand for supplementary reference (such as dictionaries and atlases), and exam revision and practice material, often funded by parents or students themselves. And in most jurisdictions there will be a network of private schools that do not depend on public funding and which can choose their own resources and often their own curriculum. In a national market closed to specialist educational publishers by supply side funding methodologies, these private school and supplementary markets are often the only investment opportunities available for publishers.

4.1   Channels to market: Supply side methodologies and funding

It is not uncommon however for governments to apply public funding to the **supply** (production) **side**. This can take several forms. A state-funded monopoly supplier can be set up with a government-approved exclusive licence to supply curriculum resources to schools. Such an arrangement essentially locks out specialist educational publishers, which must then survive on the supplementary markets, choose to withdraw completely, or look to international opportunities. The most recent egregious example of this is in Hungary.[20]

An alternative supply side methodology is the single-text adoption, as for example in Turkey. Publishers there are encouraged to compete for adoption of their materials, but opportunity is restricted, and procurement is usually through tender, forcing down prices. In Africa particularly, this methodology has been common, often funded by aid projects. Over time, indigenous publishers are forced to withdraw from the market. Yet another supply-side strategy is to apply funding to the

---

[20] https://www.internationalpublishers.org/news/866-educational-publishing-in-hungary-an-interview-with-dr-ildiko-toeroek

development of OERs, or to the development of a digital platform populated entirely by publicly funded and freely available resources, such as for example the NDLA in Norway (see below, page 15).

All of these supply strategies have potentially the same result that specialist educational publishers, both locally based and internationally active, reduce their investment in the curriculum needs of the country, or withdraw completely. A further twist can come from exceptions for educational use included in national laws. If exceptions are too broadly framed, and specialist educational product crafted for local curriculum needs is interpreted as available for use without permission or remuneration, the market for indigenous publishers will collapse, as has happened in Canada, and as a consequence Canadian schools are increasingly forced to use learning resources produced outside of Canada and without reference to its provinces' curricula or Canada's cultural, linguistic and ethnic mix.

As specialist educational publishers withdraw, and the educational resources available are reduced to those funded directly by public monies, the quality of these resources tends to diminish.[21] The motivation to innovate and compete is absent, and resources become quickly out of date, but with no mechanism left in the market to replace them. *The result is a drought, not a feast of free content.*

5. Across national boundaries

There are market sectors where educational materials can meet needs and travel across national boundaries. Prominent examples would include:

- **International schools** teaching the International Baccalaureate, International General Certificates of Secondary Education or Cambridge Assessment qualifications.[22] UK-based publishers in particular are adept at developing quality resources for use in international schools, and they sell their textbooks directly or through local agents. International schools often have the financial resources and capability to experiment with EdTech and the use of digital resources in their classrooms. In emerging markets, they can be the catalyst and the inspiration for the use of technology in the wider local market;

- **Private language schools** teaching second languages,[23] most prominently English, French, Spanish, Chinese, or Arabic. The large global market for English Language Teaching (ELT) in particular, including English as a curriculum subject in schools, is the subject of significant investment and constant development. High-quality resources, usually with a strong digital element, are available almost anywhere. Structured programmes are needed to support progression, and motivational material requires skilled authors;

- **Distance learning colleges** with no physical presence.[24] If publishers of high-quality content are to be motivated to license their material for distance learning uses, they need to be reassured that users will be connected via secure networks. The licence will be with the parent institution, which is expected to operate as a trusted partner exercising stewardship over quality material;

---

[21] See for example: https://www.bridgeinternationalacademies.com/literacy-and-learning/

[22] For examples see: https://www.tes.com/school-directory/international-school-groups\

[23] For a directory of language schools see: https://www.eurolingua.com/publications/english-interest/1633-international-language-school-directory

[24] For examples see: https://www.distancelearningportal.com/

- **Nationally based institutions with campuses in other countries**.[25] In such cases, publishers license via reputable parent institutions and with trusted preferred partners that they are satisfied have the required technology and digital rights management capability. Licences will empower these trusted partners to deliver content into campuses in other countries, so usually it will not be the publishers themselves that license these campuses separately and directly.

All these markets still need specialist educational content, delivered into classrooms through channels that support commerce and the value chain. Only diverse and healthy markets that respect copyright can expect to benefit from such provisions. Publishers have little incentive to enable licensed access to their material in markets and territories that contain threats from appropriation, infringing uses, downstream leakage, or outright piracy of their content.

It is to be expected, however, that actors in these markets will search for economies of scale, and there are positive examples of public procurement on behalf of an entire sector from a diversity of potential content suppliers. Such arrangements can be sustainable and deliver value for public funds on the basis that the arrangement is fair and not punitive to rightsholders.

Conversely, publishers with international networks and connections, which often favour those publishing in English, will look for economies of scale with content that has potential in a range of national markets. These publishers invest in a core concept that is adapted to local needs for local delivery in different markets, often with a package of support for teachers who are using the programme. Here are two successful cases:

1. *Oxford Reading Buddy*,[26] published by Oxford University Press is a good example of how a publisher with a global footprint can deliver investment and expertise to the benefit of local needs. This is a 'digital first' programme with complementary blended (print) elements available. It has been adapted for delivery in both 'native speaker' and 'English as a second language' versions aligned with the needs of the curricula in UK, South Africa, Australia, Malaysia, India, Pakistan, and China, and for international schools in territories such as the Middle East and Latin America. Built around a common set of levels, it uses different content libraries to suit local circumstances, and critical factors such as the pace of progression are taken into account. The programme seeks to use technology in ways that add value to the student experience. For markets in China and South Africa, delivery can be via smartphones, perhaps the most effective technology for reaching the hard-to-reach. Users also benefit from the support elements available from a well-structured international programme committed to high-quality content, including support for teachers in the use of the technology.

2. Marshall Cavendish Education[27] produces resources in Singapore or Hong Kong inspired by the successful curriculum development programmes in Singapore that are in demand around the world. Working with partners and through many instances of good collaborative efforts, their content is in demand in over 70 countries, their authors and illustrators are paid their dues and are recognised for their work and effort because of a robust publishing and licensing system. Digital content is delivered using a variety of models, including subscriptions on a yearly basis or on a one-time basis. In the Philippines, where schools are unable to afford the pricing of the contents as sold in Singapore, they have trimmed the contents and deposited these in local servers and

---

[25] For a full listing see: http://cbert.org/

[26] https://global.oup.com/education/content/primary/series/oxford-reading-buddy/?region=international

[27] https://www.mceducation.com/mce-intl

made them available to schools at a lower price. In Indonesia,[28] they have licensed their Learning Management System (LMS) to schools through a local partner. Marshall Cavendish Education has also sold printed books in many countries, often adapted to local needs and published with local partners, or licensed to partners for publication in other languages, including Arabic, French, Hebrew, Bahasa Indonesia, as well as for markets in Mauritius, China, and Sweden. They have sold into India, and are working to license material to a partner in Pakistan.

6.   Channels to digital markets

Models that channel funds for digital content are constantly evolving in response to market challenges. The larger specialist educational publishers, especially those publishing in English with branches in international markets, have invested heavily in proprietary platforms, which silo their own content along with added-value learning and data management tools. The challenge now for schools is to manage the diversity of these platforms, each potentially requiring a separate sign-on; and for each platform to respect the legal protections required of learning analytics data. The response has been to set up collaborations that enable a single sign-on service — for example the initiatives in the Netherlands and Italy described below — and has led some publishers to explore delivering their content via platforms with a pervasive presence of their own branded content in the channel. Conversely, there is also evidence that some schools are choosing to retreat from the complexities of managing platforms, especially when budgets are tight, while still using digital content in simpler formats (PDFs and EPUB).

In the **Netherlands**, complexities in the digital content supply chain deriving from multiple approvals and differing processes for integrating content into school systems were causing delays and disruptions in 2017. This led to a joint program bringing together both public (the councils of Primary and Secondary Education, supported by the Ministry of Education) and private stakeholders who were represented, amongst others, by the Dutch Association of Educational Publishers (GEU). Their common goal was to establish a 'reliable and secure educational content chain'. The result was a clearly defined content supply chain, binding agreements and standard testing. And by the start of school year 2018/2019, there were barely any problems. Over time, the program will be further improved and simplified to ensure sustainable seamless delivery. Working closely with government officials, common resources and tools were developed through successful public-private partnerships, for example Basispoort,[29] a centralised single sign-on platform that automates access to multiple publishers. With this oversight in place, all parties can work together to resolve potential issues very quickly. The curriculum can now be delivered smoothly. Everyone wins, especially the students.

In **Italy**, all textbooks eligible for adoption for primary and secondary schools must have digital integrations. There are three types of eligible product: (i) print textbooks with digital integrations; (ii) blended products (print textbooks + digital textbooks + additional digital contents and tools); (iii) digital textbooks with integrated multimedia, interactive content and tools. Licences for digital resources are granted directly by publishers. Classroom usage of digital integrations is usually licensed to teachers as part of the adopted package. Licences to students for usage of digital learning materials usually have a cross-border scope. Students are able to access the digital resource in the classroom, at home or anywhere from their computer or other personal devices through the Internet.

---

[28] https://nuadu.com/en/partners

[29] https://www.basispoort.nl/login/leerkracht/

Zaino Digitale[30] was launched in September 2017 and has been fully operational ever since. It is an online service promoted by the Italian Publishers Association (AIE) to optimise access to digital educational resources made available in the market by Italian publishers joining the initiative. It provides families, students, and teachers with a single gateway to the digital contents (eBooks and supplementary resources) available on individual publisher's platforms. The technological infrastructure is based on a single sign-on solution and open and interoperable standards. The project is compliant with the new European regulation on data protection. Currently 16 educational publishers (81 imprints) have joined the service, representing more than 80% of the Italian educational market.

There are also examples in Brazil of competing publishers collaborating successfully to establish a collective channel that can deliver a mix-and-match/slice-and-dice combination of curated content, often at chapter level, from a single source of supply. Examples include:

• Pasta do Professor involving 30 publishers and catering for hundreds of thousands of university students;
• Minha Biblioteca, with 20 publishers delivering distance e-learning material for 2.6 million students.

7. Digital strategies and investment in EdTech

In many countries, digital resources are used extensively in classrooms, but rarely exclusively. The variance in practice is very wide and does not align with GDP or population. Virtually every country, every nation, region, state or province is investing in digital technology to assist learning in their public sector institutions. The variety and diversity of EdTech projects is impressive, but also curiously inconclusive. There is little compelling evidence that mere availability of devices and connectivity alone makes a positive impact on student learning (as opposed to say motivation, flexibility or variety of learning experience). Some jurisdictions such as South Korea[31] have attempted to go 'all in' on digital, only to scale back later, while others have taken their time to evolve a strategy, such as in Germany. Progress with 'the digital transition' does not map onto population density, GDP, available resources, favoured devices, or pedagogical traditions. The Center for Educational Innovations database lists 782 EdTech programmes.[32] Which ones matter? Which will prove sustainable, and scaleable?

Digital resources offer students clear incentives for motivational benefits and richness of experience, while compelling proof that digital brings a learning advantage remains elusive. There is no 'one size fits all' when it comes to formats for quality educational content, and the enormous variety and diversity of digital EdTech solutions is also its strength. Case studies can be found in the UNESCO ICT in Education prize, where 2018 winners were *ThingLink* and *Can't Wait to Learn*. The 2019 prize is on the theme: the use of AI to innovate education, teaching and learning.

ThingLink[33] from Finland is an innovative and affordable digital tool, which helps to foster learning experiences, including learners with disabilities or limited ability for expression. The Web tool and the app allows teachers and students to easily enhance visual media with text, voice, photos, videos and 360-degree images, with a view to increasing knowledge sharing and learning engagement. It

---

[30] 'Digital backpack', www.zainodigitale.it
[31] See: https://blogs.worldbank.org/edutech/e-learning-in-korea-in-2011-and-beyond
[32] https://educationinnovations.org/programs
[33] https://www.thinglink.com

supports various learning styles that help to customise lessons to meet learners' individual needs, and *ThingLink* provides a new way for documenting cultural heritage using local languages.

The *Can't Wait to Learn*[34] programme, developed and implemented by a broad coalition of partners led by War Child Holland, addresses the needs of the 32 million children who miss out on an education through living in conflict zones. The programme provides a fast, effective and value-for-money solution, including an offline application that enables children to learn through playing educational games on tablet computers. Input from children informs the design of the games. All content is based on national curricula and includes both literacy and numeracy modules. The programme currently operates in Sudan, Jordan, Lebanon and Uganda. The educational content is available in Arabic and English, and games in French will be developed.

For EdTech to enhance student learning, a critical combination of factors is likely to need to be in place. Fall down on one, and investments in the rest are at risk of being unproductive in terms of raising standards. These factors are (at least):

• 		Access to electricity;
• 		Secure storage and availability of robust and appropriate devices;
• 		Teachers trained in how to use the devices for pedagogical purposes;
• 		An appropriate standard of digital literacy among teachers and students;
• 		Access to the Internet;
• 		Sufficient bandwidth to enable the technology employed; and
• 		Access to carefully crafted professional content that meets the needs of the curriculum, assessment needs, local language and culture, in line with social norms.

This last requirement is a universal, is independent of the medium of delivery, and is the reason why publishers need to be trusted partners in the delivery of successful outcomes from investments in EdTech, and why provision needs to be made to fund procurement of carefully crafted content.

Strategies vary considerably between countries. In **Eastern Europe**, for example, there is a strong rising tide in most countries often supported by EU funding to make effective use of interactive digital resources. But digitisation still needs an effective *implementation* model to deliver the benefits, and mere availability of hardware and the Internet is not enough. Attractive content that supports all required standards, offers complete compliance with diverse curriculum goals, delivers 100% of the content needs in different countries and different languages, and still offers total commitment to quality, is essential. Even then, close support for teachers through teacher training is needed to deliver secure outcomes.

The government of Denmark invested DK500m (€65 m) in a digital initiative that ran for five years from 2012[35] by way of a subsidy for schools to purchase resources. An evaluation of outcomes is still in hand, but a commercially funded survey of teachers and principals in Danish schools[36] involving 6,000 respondents concluded that 36% of Danish teachers are now primarily using digital teaching materials, 49% believe digital materials prepare students in a better way, 63% perceive digital material to be more up to date, and 62% have participated in digital skills development. However, 43% of these teachers and principals experienced infrastructure barriers to using digital material effectively, only 31% of schools had a digital strategy to improve the IT-didactic skills of students, and 42% of respondents did not know if their school even had a strategy. Interestingly,

---

[34] https://www.warchildholland.org/projects/cwtl/

[35] http://www.eun.org/documents/411753/839549/Country+Report+Denmark+2017.pdf/7a0b9045-cd44-4831-875a-e42306beeefe

[36] Digitisation in Danish Schools 2019.

book sales have not declined during the subsidy period of the programme, so it seems that the technologies may be complementary not substitutional.

Over the last 10 years, **Norway** has operated a National Digital Learning Arena (NDLA),[37] which is a production and purchase enterprise for freely available digital resources, publicly funded through local municipalities. NDLA has completely dominated the Norwegian market for digital learning for secondary schools and is planning to extend into primary. Of late, however, NDLA has come in for criticism and is subject to considerable debate over how it will continue. Meanwhile, the government has established a public grant scheme known as 'technological school bag'[38] with a budget equivalent to €45m over five years to fund municipal purchases from specialist local educational publishers.

The Ministry of Education and Research in **Estonia**, well known as a state for progressive use of digital technologies, has been running a pilot project[39] to procure digital textbook and learning environment licences for Grades 1-9, which is continuing for a further two, potentially three, years after a successful evaluation. The tender for the second year was won by two platforms, opiq.ee[40] and foxacademy.com[41]. Opiq.ee is a single learning platform that offers digital textbooks from several publishers at once, enabling teachers to use content under one licence for all subjects and all grades. The Ministry pays a licence fee to the provider which, after taking a commission, shares the rest with the rightsholders according to usage. The platform also provides publishers with usage statistics and shares some learning analytics data with the Ministry. The aim is to return to a normal organic market, where the school makes the order for licences, not the state. Again, sales of 'traditional' print textbooks have held up during the trial. The preference seems to be for textbooks in both printed and digital versions.

Serbia has launched a '10,000 digital classrooms' project,[42] involving all classrooms in 1st and 2nd Grades and many in 5th Grade. A network of over 600 digital ambassadors has been established, and 40% of teachers have attended training events. High-quality digital content derives from licences paid to publishers. The market is funded by an allocation of €150/ teacher/year.

8.   Market conditions — What is needed

To deliver on their mission of bringing appropriate, carefully crafted, and curated content to readers, pupils, students and their teachers, publishers need both the physical means to deliver their content, and, as already mentioned, a channel to market through which funds can flow back to the investor, the publisher. Authors and publishers also need a legal framework within nation states and across borders that respects both the Berne Convention's 3-Step Test[43] and the rights of publishers and their authors to make available and sell their content in return for fair and secure remuneration, without fear of appropriation through legislation, or of infringing uses going unaddressed.

The 3-Step Test defines the context for possible exceptions to the author's exclusive right of reproduction for literary and artistic works under Article 9(2) of the Berne Convention. The Test for possible exceptions requires that: *'It shall be a matter for legislation in the countries [that are signatories to the Convention] to permit the reproduction of such works in certain special cases,*

---

[37] https://om.ndla.no/about-ndla/

[38] https://norwaytoday.info/education/promises-nok-450-million-towards-tech-school-bag/

[39] https://investinestonia.com/digital-development-a-priority-for-upcoming-school-year-in-estonia/

[40] https://www.opiq.ee/

[41] http://foxacademy.com/

[42] https://www.srbija.gov.rs/vest/en/141773/serbia-to-invest-in-education-creativity.php

[43] https://www.wipo.int/treaties/en/ip/berne/summary_berne.html

provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.'

Since high-quality educational content has always been crafted and curated to align closely with the precise curriculum needs of local markets, publishers argue strongly that exceptions aiming to legitimise reproduction of such works conflict with the Test in that they clearly do 'interfere with normal exploitation' (the second step of the Test) of works intended for a focused market and in consequence are 'unreasonably prejudicial' (the third step of the Test) to the interests of specialist educational publishers and their authors.

In the absence of such a secure national legal framework, publishers cannot operate successfully and must look to opportunities elsewhere. The DSM Copyright Directive that passed into EU law in May 2019 and is now in the process of implementation into the national laws of the 28 EU member states delivers such a framework in that it aims to provide for a high level of protection for rightsholders, facilitate the clearance of rights and create a framework in which exploitation of works and other protected subject matter can take place.[44]

9. Collective licensing solutions

Collective licensing solutions are an essential *complement* to the investments of specialist educational publishers in the primary market for learning materials which are closely adapted to the needs of the curriculum and local teachers. Given the inevitable diversity of needs, the primary market and the funding available cannot meet all the needs of all the teachers and all their students all of the time, so licensed use of excerpts from copyright-protected material from a variety of primary sources will still be required to illustrate particular points, or to compile reading lists, course packs, and appropriate background material. The process of clearing these many permissions is potentially burdensome on both rightsholders and on users, so an efficient and effective collective licensing service is beneficial to all actors in an orderly market and serves to complement and complete the solutions available from primary providers.

Collective solutions managed by CMOs[45] potentially also have a necessary role to play in enabling effective use of progressive artificial intelligence and machine learning technologies that draw on rich content repositories for pedagogical and assessment applications. The item banks of individual publishers though valuable are unlikely to be sufficient, and a proliferation of item-level transactional licences will become too burdensome to be effective. Collective solutions with associated new business models that distribute remuneration fairly according to use are needed to manage and curate the re-use rights that will populate such repositories. For these progressive solutions to operate however, an open, fair, and legally secure marketplace that respects intellectual property rights and restricts infringing uses is the key to delivering the choice, innovation, and partnerships that will fuel these powerful new technologies and deliver the prospect of better learning outcomes.

---

[44] https://eur-lex.europa.eu/eli/dir/2019/790/oj?eliuri=eli:dir:2019:790:oj
[45] See Olav Stokkmo, The Role of Collective Licensing, International Publishers Association, Geneva, 2019: https://www.internationalpublishers.org/images/aa-content/ipa-reports/Licensing_practices_2019-20/Olav_Stokkmo_-_The_Role_of_Collective_Licensing.pdf

10. Conclusion

Specialist educational publishers are an essential element in any dynamic modern education system. Seeking to work in collaboration with policymakers, government agencies, teachers, and authors, publishers invest in resources that stimulate learning and support the teachers who deliver local curricula in classrooms. Any successful education system involves catering for a great diversity of needs, and educational publishers are experts at deriving and adapting solutions to meet those needs. They offer blended solutions using formats appropriate to the way that teachers want to teach. Publishers will use educational technologies as appropriate, in line with funding, policy guidelines and pedagogical capabilities and, in doing so, they offer hybrid choices employing all available formats. They work with what works, not just with any preferred technology. Publishers support teachers where policymakers and government agencies leave off. They stand for choice, diversity, innovation, local solutions for local needs, and collaboration with all the other actors on the educational stage.

To make these investments, however, publishers need a secure national legal framework in which to operate — one that respects copyright, creators' rights, and publishers' rights. This paper gives some examples of successful collaborations that deliver balanced solutions benefitting learners, teachers, and society. Publishers seek the freedom and the opportunity to exploit, at their own risk, their own and their authors' exclusive rights in markets where funding is available, preferably on the demand side, and where market channels enable these funds to flow. With primary provision in place to meet core curriculum needs, there is scope for additional provision from open source material and from collective licensing solutions to provide access to extracts from copyright material that is not burdensome either to users or rights owners. This secondary market enabled by copyright management organisations complements and completes the primary market enabled by publishers themselves. A secure, balanced collaboration between authors, publishers, teachers, CMOs and technology providers can deliver a synergetic, sustainable, progressive, and scaleable landscape of resource provision to support learners, teachers, policymakers and governments. Effective education works through local delivery, supported by diverse but appropriate resources, developed through productive collaborations.

Graham Taylor

Graham Taylor has been a publisher since 1973, working in senior positions for UK-based groups including Heinemann, Longman, Nelson and Collins, with extensive experience of international and developing markets. In 2001 he joined the UK Publishers Association as Director of Educational, Academic and Professional Publishing, just in time to engage with the intense debate around the future of educational and scholarly publishing as the impact of digital technology accelerated and the Internet hit its stride. Graham has been Chair of Publishers' Licensing Services and served on the boards of PLS and Copyright Licensing Agency for 13 years. He was the founding Chair of the IPA's Educational Publishers Forum, a unique collaboration between international educational publishers, which he continues enthusiastically to support. Graham left the Publishers Association in 2013 to operate as an independent consultant.