

Background Paper
The Learning Generation

Books For All Children
A Rapid Analysis of the Political Economy
Around Textbook Publishing

This paper was prepared for the International Commission on Financing Global Education Opportunity as a background paper for the report, *The Learning Generation: Investing in education for a changing world*. The views and opinions in this background paper are those of the author(s) and are not endorsed by the Education Commission or its members. For more information about the Commission's report, please visit: report.educationcommission.org.



RESULTS FOR
DEVELOPMENT

BOOKS FOR ALL CHILDREN: A RAPID ANALYSIS OF THE POLITICAL ECONOMY AROUND TEXTBOOK PUBLISHING

International Commission on Financing Global Education Opportunity

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Table of Contents

List of Acronyms.....	iii
Acknowledgements	iv
Executive Summary	1
I. Introduction and Methodology	5
II. The Context	8
a) Our understanding of key terms.....	9
b) The roles of key stakeholders	13
III. Key Issues for Consideration	16
a) The evolution of state and commercial textbook publishing in low- and middle- income countries	16
b) Mechanisms and models to generate textbook content and copyrights	21
c) Interplay between print and digital publishing	25
IV. Options for Action	33
V. Opportunities for Further Research	40
References	42
Annex 1: List of stakeholders consulted	45

List of Acronyms

CC	Creative Commons
DDD	Domestic Digital Divide
DLM	Digital Learning Materials
DRM	Digital Rights Management
GBF	Global Book Fund
ICT	Information Communication Technology
ICT4E	Information Communication Technology for Education
LIC	Low-Income Countries
MBO	Multiple Book Option
MIC	Middle-Income Countries
MIE	Malawi Institute of Education
MINEDUC	Rwanda Ministry of Education
MOE	Ministry of Education
NGO	Non-Government Organizations
OER	Open Educational Resources
PDF	Portable Document Format
SBO	Single Book Option
SSA	Sub-Saharan Africa
TCO	Total Cost of Ownership
TLM	Teaching and Learning Materials

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Executive Summary

Teaching and learning materials are key inputs to support learning, with access to such materials crucial to promoting an inclusive, effective learning environment.¹ However, numerous studies point to the low levels of textbook availability in low- and middle-income countries. For example, a recent regional survey in Africa showed that in most countries, primary school children have to share textbooks; in some countries, upwards of 4 pupils share 1 mathematics or reading book and in Cameroon, on average, 14 pupils share 1 mathematics textbook.²

In attempting to counter this problem, there has been growing momentum towards a Global Book Fund (GBF), a potential mechanism to transform the development, procurement and distribution of books to improve reading and learning outcomes for children. The feasibility study for the GBF points to the need to focus on global activities to disseminate knowledge and raise awareness about the value of books, as well as country level measures to fund both technical assistance and books themselves.³

This report seeks to complement the efforts of the GBF initiative and specifically probe the role of local, regional and international publishers in textbook provision. Through a combination of literature review and consultations with 18 expert stakeholders, we explored the interplay between state and private publishers, textbook authorship and copyright, and the emerging role of digital learning materials and the interplay of digital with print. Seven key findings emerged, summarized in the Summary Table below.

Our consultations made clear that many of the issues identified are context-dependent and that it is very difficult to generalize trends in textbook publishing across countries. Attuned to these sensitivities, we propose five areas for action for the Commission to consider in tackling the problem. These options are drawn from the specific lens of the study, namely addressing the role of local, regional and international publishers in book provision and mechanisms of enhancing textbook content quality and increasing access. The following recommendations are informed by our analyses and consultations with key stakeholders, and will need to be adapted and refined based on country needs.

Recommendation 1: Develop open and transparent textbook selection processes to improve content and quality.

Our stakeholder consultations indicate that a comprehensive, open, textbook selection process is vital to improve quality and ensure adherence to the specified curricula and syllabus. An open process is also key to achieving affordable textbook costs. The selection committee must involve a diverse team of stakeholders with no conflicts of interest, and there must be very clear steps in the textbook selection

¹ UNESCO. (2016, Jan.). Every Child Should Have a Textbook. Policy Paper 23. Global Education Monitoring Report (GEM). Paris: UNESCO.

² UNESCO. (2015, Jul.). School resources and learning environments in Africa Key results from a regional survey on factors affecting quality of education (powerpoint).

³ Results for Development Institute (R4D) & International Education Partners (IEP). (2016). Global Book Fund Feasibility Study. Forthcoming.

process. Importantly, strict and well developed evaluation criteria can also be designed to reduce bias in textbook content and, for example, tackle the under-representation of girls in textbooks.⁴

Recommendation 2: Support capacity in setting and pushing forward comprehensive policies and regulations on Information and Communication Technology for Education (ICT4E) and e-learning.

All stakeholders consulted made clear that the role of technology in education cannot be ignored. Information and Communication Technology (ICT) is playing a key role at all levels; textbook content is being simultaneously created in print and digital format. Digital textbooks – in various forms and mechanisms – are increasingly prominent, and educators and innovators are attempting to use real-time student assessment data to improve learning.

Given the rapidly evolving landscape, nearly all stakeholders commented on the need to support the capacity of government agencies in low- and middle- income countries in both setting and pushing forward their e-learning agendas. Given the trend towards “wrap-around” services that combine textbook content and assessment, it is crucial that governments are provided the support needed to set and guide policies on how end user data will be gathered, and who will own such data. Although such services may not be a reality for many developing countries for some time, it is important that governments have the capacity and information needed to lead the dialogue. Capacity is also needed to select between the various edutech innovations available, and to monitor and evaluate digital materials and ICT in schools.

Recommendation 3: Increase coordination between agencies that are involved in ICT4E.

In many developing countries, coordination between agencies that are involved in ICT4E policies must also be increased. Many stakeholders commented that multiple government agencies – for example, the ministry of education, the ICT ministry, or a specialized agency with a digital materials focus – are involved at numerous stages of ICT4E policies. In these cases, the process for digital learning materials – whether it be a static print textbook in a digital format or broader digital learning – is neither detailed nor comprehensive.

Recommendation 4: Strengthen and promote greater awareness of the role of teachers in textbook selection and usage in order to improve pedagogy and learning outcomes.

In both print and digital textbook systems, all teachers must be sufficiently trained and be fully considered in planning and policies. We have found that many teachers are inexperienced, only partially trained or even not trained at all; some are both reluctant and unaware of how to use textbooks effectively.⁵ The challenge will be greater with the inclusion of digital learning materials into the classroom. Textbooks will be most effective when teachers are optimally involved in the procurement process and are able to efficiently adapt to constantly evolving teaching and learning materials.

Recommendation 5: Implement and support systemic reforms to ensure that the mounting evidence on addressing cost and financing issues is translated into concrete action.

⁴ Benavot, A. (2016, Mar. 8). Gender bias is rife in textbooks. World Education Blog. Global Education Monitoring Report.

⁵ R4D & IEP (2016)

Our findings and first four recommendations underscore the importance and need for concerted action and improvement in key government-level systems impacting textbook publishing. Publishers have significant influence on the “high cost / low availability” textbook challenge: 50-60% of the retail price of a textbook is associated with publishers and booksellers, and includes publisher overheads and profits and bookseller discounts.⁶ Improving textbook availability and quality requires, in part, cooperation between governments and publishers and shifts in policies and behavior by both parties. Although country conditions and the extent of issues may differ, there are widely documented system weaknesses in the sector, including: inconsistent budget lines for learning materials, disparate curricula and overly-ambitious syllabi, and faulty and incomplete information systems on textbooks. Given the enormous evidence already generated by recent studies, it is important to foster action that will close the gap between the evidence that exists for improving textbook availability and quality and the actual implementation of system-based policies and practices based on gathered data.

In addition to the five recommendations for practical policies and action, we propose that further research and testing is conducted in a few targeted areas. Given our distinct focus, our rapid study does not examine the full range of critical factors affecting textbook publishing, which include issues around system management at the government level, language of instruction implications, and authorship capacity. Moving forward, we propose continued study and attention to the three following topics:

- Financial considerations: Recent literature highlights the “inadequate, irregular, and unpredictable financing” of teaching and learning material needs.⁷ The financial aspect, however, is not probed in our study. The forthcoming GBF feasibility study focuses on financial considerations, including both the financing gaps for reading books and textbooks and the feasibility of digital materials. Indeed, although ICT investments are already being made in many low- and middle- income countries, careful consideration is needed to understand both the type of digital material and under what contexts it would be most suitable.
- Open Education Resources (OER): Consulted stakeholders noted that the OER discussion to date has centered on the potential of free, open licenses to increase pupil access to learning materials. However, questions remain around the quality implications of OER, their applicability and alignment with curricula, and how such materials can be integrated into the learning environment in order to boost literacy outcomes.
- Effectiveness and implications of materials: Provision of textbooks alone is not enough, and careful attention needs to be paid to how materials are being used to boost learning outcomes. With the growing attention on technological innovations as a mechanism to raise access to learning, stakeholders commented that more research is needed on factors affecting the effectiveness of both print and digital materials. In addition, both literature review and consulted stakeholders revealed that attention should be given to any potential side effects of long-term digital utilization on student health and socialization.

⁶ Fredriksen, Brar. & Trucano (2015). *Getting Textbooks to Every Child in Sub-Saharan Africa: Strategies for Addressing the High Cost and Low Availability Problem*. Washington, DC: World Bank.

⁷ Read, T. (2015). *Where Have All the Textbooks Gone? Toward Sustainable Provision of Teaching and Learning Materials in sub-Saharan Africa*. Washington, DC: World Bank.

Summary Table of Findings

<p>a) The evolution of state and commercial textbook publishing</p>	<p>Finding 1: Textbook publishing is steeped in sensitive political and economic interrelationships involving local and global stakeholders, institutions, and policies, and is positioned within diverse historical legacies. While broad themes and issues may be gleaned from multi-national and global analyses of textbook publishing, final conclusions and plans of action should be based on contextualized understanding and local engagement.</p> <p>Finding 2: Although a small number of low- and middle-income countries have maintained successful state-control of school textbook publishing over several decades, many state textbook publishing enterprises have significantly diminished or ceased in operation. This is mainly as a result of gradual emergence of local commercial publishing capacities and various critiques directed at state publishers, including: an overall inability to manage the recommended diversity of national learning needs, inadequate attentiveness to timeliness in the review and approval processes, and challenges in maintaining the overall print and content quality of resulting textbook products.</p> <p>Finding 3: Private local and regional publishers in low- and middle-income countries have significantly increased in number and competitiveness, and in many instances are now dominant in local textbook markets.</p>
<p>b) Mechanisms and models to generate textbook content and copyright</p>	<p>Finding 4: Weak copyright enforcement and rampant piracy challenge textbook quality, with both commonly mentioned as critical problems in low- and middle-income countries. Many stakeholders expressed concerns that there may also be inadequate attention to digital rights management (DRM) which constrains the will and profit of textbook authors and publishers in digital learning materials.</p> <p>Finding 5: Textbook publishing involves a number of stakeholders with vested interests, with content development and textbook selection decisions often deeply political in nature. In order to minimize adverse effects and ensure long-term sustainability, it is crucial to identify and involve key stakeholder groups in all parts of the school textbook reform planning and implementation processes.</p>
<p>c) Interplay between print and digital publishing</p>	<p>Finding 6: Digital learning materials are being piloted and utilized in many low- and middle-income countries. Technology could play an important role in enhancing access to learning but widespread adoption of digital textbooks and displacement of print textbooks may not be feasible in the short-term. A lack of consensus currently exists in regards to definitions and scope, operational challenges, technical barriers, and other factors.</p> <p>Finding 7: A new set of stakeholders – which includes software specialists, pedagogical innovators, computer hardware providers, and those who uniquely combine the technical savvy with teaching and pedagogy – will play crucial roles in the school textbook market to drive the creation, provision, funding, and technical management of digital teaching and learning materials. Greater awareness is also being paid on how to incorporate learner data as well as learning outputs and outcomes into material development and</p>

I. Introduction and Methodology

Teaching and learning materials are a crucial element needed by teachers in improving education quality and learning outcomes. Significant evidence demonstrates that textbooks are not only a necessary input, but are also one of the most cost-effective investments for raising learning outcomes.^{8,9,10} However, book provision and availability remains a significant challenge, as demonstrated by the evidence in recent publications including *Getting Textbooks to Every Child in Sub-Saharan Africa* by Birger Fredriksen, Sukhdeep Brar, and Michael Trucano (2015) and *Where Have All the Textbooks Gone?* by Tony Read (2015).

The full textbook chain contains numerous interrelated components.¹¹ The focus of this report is specifically on publishing, and investigating the role of local, regional and international publishers in textbook provision. The report provides a deep and frank analysis of political economy considerations in the school textbook publishing sector, and mechanisms and models of enhancing quality and efficiency. Other important components of the textbook chain – such as curriculum design, printing, distribution, school management and classroom usage – are beyond the scope of this rapid study, but are explored as needed to reinforce the complementary nature of textbook sector processes and activities.

Indeed, these components are examined in depth in the forthcoming feasibility study for the Global Book Fund (GBF), a potential mechanism that seeks to transform the development, procurement and distribution of books. Findings from the feasibility study – which focused primarily on reading books but also inferred challenges using evidence from textbook provision practices – confirmed that there is a significant undersupply of reading books, particularly in mother tongue languages. Common supply chain challenges include weak demand forecasting, poor management systems, inadequate financing, lack of trained staff and inefficient distribution. When considering digital teaching and learning materials, poor information and communication technology (ICT) infrastructure and technical capacity are added challenges. Corruption in the book chain was noted as an additional area of particular concern across both print and digital formats. Even when books are available, there are major issues including poor quality and worryingly low usage. Many teachers are unaware of how to appropriately use books in classrooms and how to set up and run school and classroom libraries. Valuable lessons can be drawn from the experience of health funds to counter the challenges seen in books provision, specifically around pooled procurement and catalytic flexible funding to accompany targeted technical support.¹²

⁸ UNESCO. (2014). *Teaching and learning: Achieving quality for all. EFA Global Monitoring Report*. Paris, France: UNESCO.

⁹ Lockheed, M., & A. Verspoor. (1990). *Improving Primary Education in Developing Countries. A World Bank Study*. Washington, DC: World Bank for the World Conference on Education for All in Jomtien.

¹⁰ Majgaard, K. & Mingat, A. (2012). *Education in Sub-Saharan Africa: A Comparative Analysis*. World Bank.

¹¹ The “textbook chain” includes: development, manufacturing, procurement, financing, distribution, and effective use. Fredriksen, Brar & Trucano (2015).

¹² This paragraph draws heavily from R4D & IEP (2016).

Both the feasibility study and other recent publications also analyze cost and financing considerations, and so we do not probe that dimension in this rapid study. Existing evidence shows that in addressing the economics of textbooks, two main areas should be delineated and reviewed: cost (unit and annualized) and financing, both of which directly impact decisions of policymakers.^{13,14} Such costs vary by level of education and are impacted by textbook and system-related factors such as: piracy, textbook formats, curriculum specifications, the textbook:pupil ratio, and average book life.^{15,16} Publishers also play a significant role in affecting cost and financing issues. In a 2015 study examining textbook costs, it was noted that “publishers’ overhead, profit, and marketing are the most important factors for high retail textbook prices in sub-Saharan Africa.”¹⁷ 50-60% of the retail price of a textbook is associated with publishers and booksellers, and includes publisher overheads and profits and bookseller discounts; importantly, raw materials and production costs are not the main cost driver.¹⁸ It is thus clear that the publishers have significant influence on the “high cost / low availability” textbook challenge.

As a result of the wide variety of factors involved in textbook pricing, there is a lack of consensus on what constitutes a good price as well as a lack of comparability of unit textbook costs across countries.¹⁹ However, regardless of the varying costs, analysis of primary education spending reveals consistent underfinancing of textbooks across both low- and middle-income countries. The feasibility study also found that improving spending efficiency, rather than raising absolute funds, should be a priority for many middle-income countries. While funding from external sources may be available, concerns have been expressed about the role of donor funds, which may be irregular and which may lessen or replace domestic resource mobilization.²⁰

Keeping in mind the findings from these recent publications, this paper seeks to complement the knowledge base by specifically focusing on the role of publishers in textbooks provision. The following questions are explored through our research:

- How have state and commercial textbook publishing evolved in low- and middle-income countries? What has been the interplay between the two types of publishers?
- What are the different mechanisms and models used to generate textbook content and manage copyrights? To what extent do textbook authorship and ownership systems pose barriers to access and quality of textbooks?
- What is the current interplay between print and digital publishing of textbooks? To what extent do digital materials align with, replace, or supplement print books? What are the different models used by publishers as related to digital textbook materials?

¹³ Unit textbook cost refers to the cost of one single textbook, while unit annual textbook cost refers to the annual cost of providing one student with the textbooks needed to deliver the curriculum in a specific grade (Fredriksen, Brar, & Trucano (2015). p.29

¹⁴ There is also a need to understand associated costs of the system of textbook provision (DfiD.(2010). Learning and Teaching Materials: Policies and Practices for Provision. London: Department of International Development.

¹⁵ Fredriksen, Brar, & Trucano (2015)

¹⁶ DfiD (2010)

¹⁷ Fredriksen, Brar & Trucano (2015), p.41

¹⁸ Fredriksen, Brar & Trucano (2015)

¹⁹ Ibid.

²⁰ Sustainable Development Solutions Network. (2015). The role of global funds in a post 2015 development framework.

Three key clusters of political economy drivers that are examined are structures, institutions, and stakeholders. The diversity within and between low- and middle-income countries, along with the varied historical legacies impacting the dynamics of education and related markets, such as textbook publishing, is also studied. In some cases, broad trends are evident, but in most instances, the particulars are context-dependent. Brief case studies are provided at various sections in the report in order to illustrate country-specific examples and lessons. Additionally, the evolving complexities of the burgeoning world of digital teaching and learning materials constrain opportunities for static conclusions and recommendations. Broad conclusions are therefore presented, with case studies again used to illustrate specific programs or models.

Our methodology combines a thorough review of relevant and current literature with semi-structured interviews of 18 key stakeholders. Stakeholders were delineated into groups in terms of their role within the textbook publishing market. These groups include:

- Research and technical specialists in the areas of print and digital teaching and learning materials;
- Policymakers within the education sector;
- Local, regional and multi-national textbook publishers and publishers' associations;
- Agencies and organizations responsible for implementing textbook projects and programs.

We caution at the outset that any sector-study that employs political economy analysis is inherently challenging. In managing potential data limitations, we carefully communicated our purpose and process to consulted stakeholders and established confidentiality measures, with no sensitive details or material attributable to any particular stakeholder. Additionally, we also gathered information from multiple sources and levels to triangulate data and information. All stakeholders consulted were given the opportunity to review and comment on the draft report.

A list of consulted stakeholders is seen in Annex 1.

II. The Context

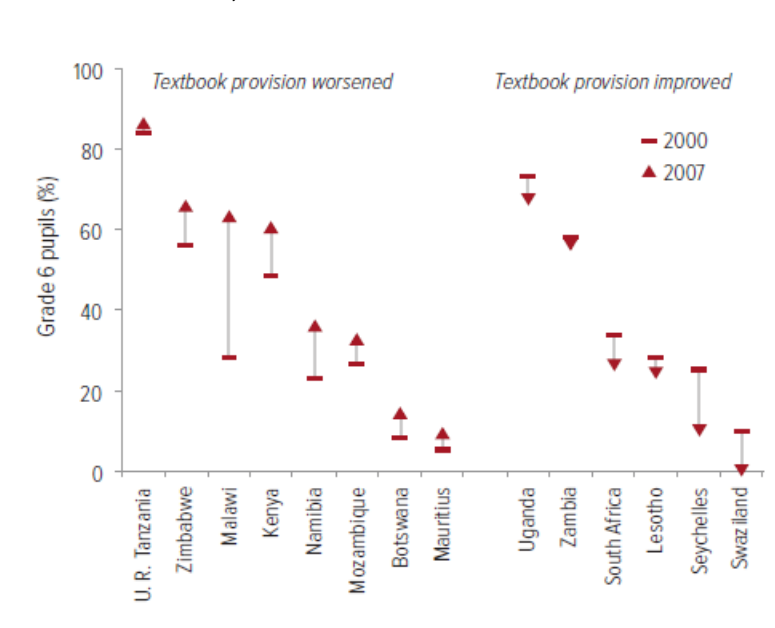
“The impact of textbooks is greatest in the poorest countries where teacher quality may be low and where facilities and resources are scarce and generally of poor quality.”

Source: Lewin & Stuart (2003), p.7

Research findings consistently indicate that textbooks are often the most important factor in improving learning outcomes for learners in poor and marginalized communities.^{21,22,23} In a review of recent related research, Read (2015) finds that textbooks can positively impact student learning at a relatively low cost if five broad conditions are met: 1) the textbook is aligned with a well-crafted curriculum; 2) the textbook is written in accessible language, in terms of both tongue and level; 3) the textbook is delivered in a timely and efficient manner; 4) the textbook is physically made available to the student; and 5) the textbook is properly managed, stored, and conserved.

However, despite evidence showing that textbook utilization is one of the most cost-effective inputs in improving learner performance, book availability remains critically low.^{24,25,26} Recent publications give particular attention to the low levels of textbook availability in sub-Saharan Africa, where we find a disproportionately high concentration of low- and middle-income countries. As stated in the recent Global Education Monitoring Report, “in many countries students at all levels either lack books altogether or are required to share them extensively with others.”²⁷

Figure 1. Percentage of grade 6 pupils without access to a reading textbook or having to share with two or more people, selected countries, 2000-2007



As shown in Figure 1, access to

²¹ Heyneman & Farrell (1978). *Textbooks and Achievement: What We Know. A World Bank Study*. Washington, DC: World Bank;

²² Searle (1985). *General Operational Review of Textbooks. A World Bank Study*. Washington, DC: World Bank;

²³ Lockheed & Verspoor (1990)

²⁴ Boissiere, M. (2004). Determinants of primary education outcomes in developing countries background paper for the evaluation of the World Bank’s support to primary education. Washington, DC: World Bank

²⁵ Lockheed & Verspoor (1990)

²⁶ Majgaard & Mingat (2012)

²⁷ UNESCO. (2016, January). Every Child Should Have a Textbook. Policy Paper 23. Global Education Monitoring Report. Paris: UNESCO., p.1

textbooks in some southern and east African countries has worsened. Recent studies explain the link between textbook provision and improved learning outcomes, and identify issues along the textbook chain that prevent adequate distribution and usage. Findings show that while sub-standard ratios of textbooks to students are sometimes attributed to a weakness in publishing (i.e. lateness in publishing or rejection of the final product based on poor quality), it is normally caused by under-financing or school-level withholding of textbooks to students.^{28,29}

A political economy analysis of textbooks requires attention to the history, mechanisms, and institutions that influence the textbook publishing industry. Attention must also be given to the processes and power dynamics of various stakeholders that are involved in decision-making, regulation, and overall management of the textbook market. With this in mind, this rapid study focused on the evolution and interplay of state and private textbook publishers, textbook content and copyright, as well as the burgeoning market for digital textbooks and its interplay with “traditional” print textbooks.

This section presents our understanding of the key terms used over the course of this study (Section II (a)) and examines the role of some key stakeholders in the sector (Section II (b)).

a) Our understanding of key terms

Textbooks are “organized and structured course materials that correspond to an often year-long subject syllabus and are designed to facilitate the acquisition of the learning outcomes specified by the curriculum.”^{30,31} The textbook is, in theory, a translation of the curriculum for a particular subject. Whether or not this is actually achieved in practice is another area for research; however, related information did surface within our conversations. In at least one country referenced, for example, the connection of a single textbook with the curriculum was so inexact that schools needed to purchase textbooks from multiple publishers for a given subject and grade level in order to address all of the learning objectives included in the syllabus.³² Textbooks are embedded within the broader arenas of education, governance, and commerce. Consideration of how the curriculum is crafted and reviewed, who authors and publishes the textbooks, and how textbooks are evaluated and vetted are critical to understanding challenges and opportunities in the sector, and are laden with political, historical, and economic considerations.

A number of textbook-related problems have yet to be solved. Producing a good textbook is a long and difficult task; it involves a set of substantial costs, from manufacturing to transporting to the monitoring of its technical and educational qualities.³³ Although it may vary depending on the size of the publishing company or the type of books to produce, the list in Box 1 indicates the various individuals generally working to produce and promote textbooks (with a single party sometimes playing multiple roles).

²⁸ Fredriksen, Brar, & Trucano (2015)

²⁹ Read, T. (2015)

³⁰ R4D & IEP (2016)

³¹ Additional teaching inputs and learning materials include reading books, teachers’ guides, and reference books.

³² Aaron Benavot (2011) reports that in less developed countries, low degrees of alignment between the curriculum and published textbooks can be attributed to high textbook production costs, limited availability, colluded textbook authorship processes, and weak or corrupt oversight mechanisms.

³³ Brugeilles, C. & Cromer, S. (2009). Promoting gender equality through textbooks. Paris, France: UNESCO

As shown in Box 1, there are a variety of functions involved in the full textbook chain for what we are loosely labeling, the “traditional” print textbook. The varying functions are instructive to keep in mind when considering the relative capacity of various publishers interested in full participation in the industry. This is especially important when considering state publishing enterprises that attempt to fully manage textbook publishing activities in addition to other assigned responsibilities and work in a respective government agency or ministry.

Box 1: Functions in the Textbook Chain		
Publishing Function	Graphic Function³⁴	Marketing Function
➤ Publisher/Director of Collection	➤ Graphic Manager	➤ Press Service Manager
➤ Pedagogic Consultants	➤ Typographic Designer	➤ Promotion Manager
➤ Management of authors (contracts and conventions)	➤ Photographer	➤ Sales Manager
➤ Teachers experimenting the new textbook	➤ Graphic Designer	➤ Delegates and Representatives
➤ Readers and collaborators	➤ Illustrator	➤ Distribution Manager
	Production Function³⁵	Finance Function
	➤ Production Manager	
	➤ Typesetter	
	➤ Printer/print workers	

Source: Aliou Sow & Tony Read. 2016. Unpublished.

What is a digital “textbook”?

The definition of “digital ‘textbooks’” is rather murky, an important point raised in stakeholder interviews. While a working definition could have been constructed and operationalized for the purposes of this study, it would have actually stifled critical input – and indeed, many stakeholders commented that agreement on what this term encompasses is rapidly evolving. Many stakeholders noted that “digital textbook” has the connotation that it is analogous to a static print textbook, simply in a different format. While this may be the case in some instances, it is not representative of the full digital “textbook” market. For example, in the United States, a recent plan (2012) still embraces the phrase, “digital textbook” but defines it very broadly.

Other digital (ICT4E)³⁶ publishers and industry stakeholders are more averse to using the term “textbook” and prefer to use the term “Digital Learning Materials” (DLM), which is a broader terminology. Meanwhile, the concept of digital learning systems is a more specialized phrase which appears to connote more dynamic tools and content, including specialized pedagogy. Blended learning, or mixed-mode course delivery, is a common bridge between printed textbooks and digital materials, and also an increasingly embraced concept. The digital textbook publishing industry is evolving and it is instructive to distinguish or delineate players in terms their roles. Indeed, even the concept of

³⁴ Many of these functions are often out-sourced

³⁵ Many SSA publishers – even well-established publishers do not have professionally trained production managers, which explains the common problems that publishers have in achieving specified production standards. Typesetting and manufacturing are usually outsourced.

³⁶ ICT4E: Information and Communication Technology for Education

“publisher” within the digital textbook arena has no clear boundary or definition. In addition to many of the functions listed in Box 1 for print textbook publishing, digital textbook publishing may include one or more of the following roles:

- Supplying devices
- Creating new content
- Converting existing content from print to digital format
- Creating special interfaces for content (new software with dynamic features)
- Analyzing user/end-user data
- Hosting and dissemination of digital content

Diversity in Low- and Middle- Income Countries

While low- and middle-income countries are commonly grouped together for the purposes of analysis, it should be reinforced that these countries are contextually-diverse both in comparison to one another and within the confines of their own geographic borders. The varying political, historical, and socio-cultural contexts must be kept in mind

in attempting to understand education-related issues and textbook publishing is no exception. Various factors, including the size of the country, population density, community mobility³⁷, the percentage of the budget devoted to education, degree of ethnic heterogeneity, language(s) of instruction, wealth inequity, form of government, and colonial legacies, all have direct impact on relative efficiency and quality of school textbooks.^{38,39,40} For example, larger countries may be able to more feasibly grow a market or local product to-scale, as we have seen in countries such as India, Kenya, and Nigeria. Smaller countries, on the other hand, may be better able to organize comprehensive and inclusive national policies and plans, such as we noted in countries like Botswana and Rwanda. Meanwhile, in conflict-affected poor countries, “28 million children of primary school age are out of school – 42% of the world total.”⁴¹ Countries in conflict zones thus present an additional set of special considerations in education, particularly in terms of the sheer number of youth who are not in school during extended war time/periods, as well as the quality and availability of teaching and learning materials for those who do have the opportunity to engage in schooling.⁴²

“In his 2011 State of the Union address, President Obama said: ‘I want all students to be able to learn from digital textbooks.’

The digital textbooks envisioned will come in an ever-evolving variety of technological and instructional variations to meet diverse educational needs and interests. But they will all have in common digital devices with access to rich, interactive, and personalized content that will encompass the primary toolset in digital learning.”

Source: The Digital Textbook Collaborative. (2012). Digital Textbook Playbook. Retrieved from: https://transition.fcc.gov/files/Digital_Textbook_Playbook.pdf

³⁷ South Sudan, for example, has a large nomadic population making it difficult to deliver teaching and learning materials (TLM). Census figures taken at one stage of a year may not accurately reflect information about location of the population and who actually received the TLM. (Source: Read, N. (2015). South Sudan – Draft National LTM Policy with Cost Implications. Unpublished).

³⁸ Montagnes, I. (2000). *Thematic Studies. Teaching and Learning Materials: 1990-99*. Paris, France: UNESCO.

³⁹ Fredriksen, Brar, & Trucano. (2015)

⁴⁰ Crabbe, R. Nyingi, M. & Abadzi, H. (2014). *Textbook Development in Low-Income Countries: A Guide for Policy and Practice*. Washington, DC: World Bank

⁴¹ UNESCO. (2011). *The hidden crisis: Armed conflict and education. EFA Global Monitoring Report*. Paris, France: UNESCO., p.2

⁴² UNESCO. (2011)

Though difficult to accurately measure, high levels of corruption have been noted in an overwhelming majority of low- and middle-income countries.⁴³ In the textbook industry, such corruption has emerged in a variety of forms, including bribes and unfair advantages for publishing contracts, piracy or theft of copyrighted materials, and misappropriation of targeted donor and public funds, to name a few.⁴⁴ In economically-strapped countries, there have also been regularly-reported patterns of an unwillingness of respective authorities to fully release textbooks for actual use by learners.⁴⁵ In such cases, concerns about “protecting” the overt financial investment in textbooks have overshadowed the indirect social and political investment in the textbooks as a tool for learner empowerment.⁴⁶ Indeed, the recent GBF feasibility study also highlighted reports of poor textbook usage in the classroom and the reluctance to even issue textbooks to students in the Democratic Republic of Congo, Ethiopia, Ghana, Guinea, Namibia, Rwanda, Sierra Leone, and Uganda. A 2013 World Bank Uganda study reported that despite the presence of textbooks in public schools, no textbooks were used by students in 86% of the classes.⁴⁷

Though delineated in the context of measuring financial capability, six interrelated characteristics have been adapted that may also be relevant to understanding some of the common challenges related to the textbook publishing market in low- and middle-income countries. The characteristics include: inconsistent and uneven access to relevant institutions (schools), high levels of poverty, high concentrations of residents in rural locations, relative informality of certain transactional processes and policies, low relative levels of education, and high levels of unmanaged risk in regards to large investments.⁴⁸

Levels and Types of Education

Within the textbook publishing industry, there are notable distinctions in education levels – primary, secondary, and tertiary – as well as in types of schools – government-funded vs. private.⁴⁹ While disaggregation in these areas is not fully attended to in this report, there are a few instances where level and types of schools are explicitly addressed. In the context of low- and middle-income countries, primary education and government-funded schools generally represent a significant percentage of the school textbook market and in general, include broad subjects amenable to a wide competition of publishers; secondary level enrollment is generally lower, more often privately-funded, and courses are a bit more specialized.^{50,51} Although there have been rapid increases in secondary school participation in

⁴³ Read, T. (2015)

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ DfID. (2015). Project Completion Review. South Sudan Textbooks Project. Unpublished.

⁴⁷ Wane, W. & Martin, G. (2013). Education and health services in Uganda: data for results and accountability. Service delivery indicators. Washington DC: World Bank.

⁴⁸ Holzmann, R.(2010). Bringing Financial Literacy and Education to Low and Middle Income Countries: The Need to Review, Adjust, and Extend Current Wisdom. SP Discussion Paper. No. 1007. World Bank.

⁴⁹ Many stakeholder interviews revealed that distinctions in types of private schools are also important, as not all private schools are commercial or for-profit and may depend on government for funding and other support, including textbook procurement. Also, international private schools were reported to be more likely to adopt digital teaching and learning materials.

⁵⁰ Montagnes (2000)

⁵¹ Read, T. (2015)

recent years, research has found differences in estimated textbook system costs, funding sources, and availability, when compared to that of primary schools.^{52,53,54}

Additional distinctions are explored in Findings 2 and 3, when we study country-based evidence of how the growth of private schools positively impacted growth in private sector textbook publishing. Discussions of digital learning materials and open educational resources further highlight publishing-related distinctions by education level and type. It was regularly noted that tertiary level institutions within low- and middle-income countries are much more equipped and prepared, sometimes by need for content, to adopt digital teaching and learning materials. Stakeholders also raised concerns about the need for further access to open educational resources (OER) in the form of academic journals and publications to improve teacher training and pedagogy. A deeper investigation of these issues is critically important; however, it was not within the scope and timeframe of this particular study.

b) The roles of key stakeholders

A variety of stakeholders are involved in the process of creating a well-functioning textbook publishing industry and developing high-quality books. Stakeholders are individuals as well as organized groups with shared interests. Proactive engagement with key stakeholders during the policy planning and implementation process can help increase accuracy of specialized and localized information, can promote innovation, may improve accountability, and can boost trust and cooperation.

Seven key stakeholder groups who play important roles in the textbook publishing process are described below:

- i) Education and sector specialists in the areas of print and digital teaching and learning materials. The range of sensitivities involved in reviewing and understanding the textbook publishing sector across and within countries is massive. These stakeholders are often sought to provide local government consultation and technical assistance, serve on planning and management boards, and provide critical insight on pilot projects and programs. The support may be in the form of direct assistance and training or through the development of teaching and learning materials for policy-makers and practitioners in the respective industry.
- ii) Education policymakers. These individuals are most entrenched in government-level power dynamics, protocols, action, and (both formal and unofficial) plans related to school textbook publishing. They have insight or may have some degree of input or control of related budgets, curriculum-development, planning and implementation timelines, and general factors involved in related decision-making. They may also have local historical perspective on various related reforms and government projects within the sector. However, it is important to note that policymakers may or may not have specialized insight

⁵² Ibid.

⁵³ Fredriksen, Brar & Trucano (2015)

⁵⁴ World Bank. (2008). *Textbooks and School Library Provision in Secondary Education in Sub-Saharan Africa*. World Bank Working Paper. No. 126. Washington, DC: World Bank

- or knowledge of what is taking place within a particular sub-sector (i.e. the details of how textbooks and digital learning materials are produced).
- iii) State, local, and regional, multi-national textbook publishers; and publishers' associations. This stakeholder group has a fairly obvious interest in school textbook publishing. It is instructive to delineate textbook publishers by type of ownership: state/government (public), local/indigenous (private), regional multi-national (private), and global multi-national (private). While the profile and motivations of individual publishers and larger associations of publishers may vary, it is safe to say that their primary role is to advocate for and preserve their business interests and/or the integrity of the market. They have a unique perspective on the evolution and future of their business and of the market. In the administration of their work, publishers also have various formal and informal roles to play with other critical stakeholders in the sector. The degree and tenor of the relationships with other stakeholders is area for analysis within this report.
 - iv) Implementing agencies. Non-governmental organizations (NGOs) and agencies plan, launch, evaluate, or otherwise help implement textbook projects and programs. These agencies may fulfill this role in a variety of ways, including through funding, technical support, and provision of other specialized equipment or services. In many ways, their participation in local projects are more inherently independent, thus more flexible and less accountable to the prevailing bureaucracies. As a result, special attention should be given to issues of sustainability, harmonization with other related local educational activities, and relevance of the work of NGOs in the textbook sector.
 - v) Donors and foreign government partners. Foreign aid in the local textbook development process is an (unfortunate) reality/necessity in low- and middle-income countries. The extent of the donor's role in the market varies and should be analyzed with respect to conditions placed on the funds, the direct and indirect effect of the funds on the local publishing market, as well as the incorporation of other stakeholders within the funded project. Fund misappropriation as well as concerns about project sustainability have both been reported as issues in textbook projects involving international financiers. There have also been reported challenges in balancing international goals with local context and needs.
 - vi) Local community and civil society, including the school and family. This group includes district and school administrators, teachers, parents, and learners. Each of these stakeholders is important in efforts to ensure accountability and efficiency in the provision of textbooks, as well as quality and relevance in textbook content. The role of the teacher in various aspects of textbook publishing varies. Highly-experienced or specially-selected teachers often serve as independent or contracted authors of textbooks in their respective subject areas. Selected teachers are also sometimes invited to participate on textbook vetting, evaluation, or approval committees. In addition, depending on the governing national and district policies, teachers may play a role in selecting textbooks for procurement at the district, school or classroom level. Parents may be important in holding schools and government officials accountable to policies and protocols for textbooks, as long as they are aware of the process and familiar with how to exercise their rights. Parents

have been noted to be especially critical advocates for accessible textbooks and inclusive education. Lastly, learners are well-positioned to provide input about the effectiveness of a textbook in improving their comprehension in a given subject.⁵⁵ UNICEF, for example, has recently reported a new digital textbook development project in which learners help screen the content/material for adequacy.⁵⁶

⁵⁵ Securing accurate data in this regard is still a challenge and a goal increasingly discussed in conversations about the opportunities in digital learning material (DLM).

⁵⁶ Stakeholder Interview.

III. Key Issues for Consideration

Based on data synthesized from literature and conversation with stakeholders interviewed, seven central findings emerged. Our findings on a) state and commercial publishing, b) textbook content and copyrights, and c) the emerging role of digital learning materials and the interplay of digital with print are presented in this section.

a) The evolution of state and commercial textbook publishing in low- and middle-income countries

Finding 1: Textbook publishing is steeped in sensitive political and economic interrelationships involving local and global stakeholders, institutions, and policies, and is positioned within diverse historical legacies. While broad themes and issues may be gleaned from multi-national and global analyses of textbook publishing, final conclusions and plans of action should be based on contextualized understanding and local engagement.

A few broad themes emerged from our research that relate the evolution of the main players in the textbook industry, and what may be accepted as general historical stages of textbook provision.

Overall, within the school textbook publishing complex, four primary actors are engaged in various degrees: state government players, local commercial players, regional players and multi-national players. The interaction of these players, their relative prominence and power, as well as their specific roles within the market, vary by country, region, time, and other sensitivities in the sector, including subject, grade level, target school community (i.e. public vs. private), language of instruction, pedagogy, and mode of instruction. In conversations, it has been important to distinguish between local, or indigenous, commercial players and local commercial players who are representative of a broader array of stakeholders. Indigenous commercial publishers are typically citizens of the country engaged in publishing enterprises, while local, foreign, commercial publishers are often local branches and imprints of international and regional publishing houses which will typically employ local citizens. The distinction is often not clear, however, because of two key reasons, namely: i) many local branches of foreign publishing companies are managed by local publishing, business and sales managers, and ii) many local publishing companies bought controlling shares from foreign publishing companies and still retain access to the products and often the ongoing professional support of those former parent companies. Indeed, this second pattern is especially prevalent in many Anglophone African countries.⁵⁷

An illustrative example of how a school textbook publishing market has changed over time comes from Singapore. Though a high-income country, Singapore's experiences are still instructive and have relevance to the examination of the sector in countries bearing lower economic classifications. As described in Box 2 below, the country has experienced various shifts between state control to private sector control over three decades.

⁵⁷ Read, T. (2015)

Box 2. Singapore's Change in Textbook Publishing Control Over Time

Singapore is known for its excellent textbook publishing industry. At independence, the government of Singapore chose as an urgent national priority to inculcate students with shared civic values. The books available at that time were in English, by private publishers not reflecting the needs and issues faced by the new state. The government established a new printing publishing house, developed books in Chinese, Malay and Tamil, and various mechanisms were established to ensure that syllabuses and textbooks evolved to respond to changes in education policy, and national economic and social priorities. In 1996, the government publishing house was privatized, and the responsibilities for textbook production was returned to the private sector, based on syllabuses and specifications defined by the ministry of education. Thus, over a 30 year period, Singapore went full cycle from commercially-produced books mostly unsuitable for the target populous, to books developed by education ministry agencies consistent with education reforms and developed to complement the shortage of well-trained teachers, but printed by private printers, then back to commercially produced books reflecting syllabuses and standards specified by the Government.

Source: Fredriksen, B. & Tan, J. (2008). *An African Exploration of the East Asian Educational Experience*. World Bank. (pp.28-29)

It is also important to note the rise of regional publishing companies. Discussion with stakeholders revealed that over the past 5 years, Kenyan publishers, for example, have successfully competed for school textbook publishing bids in Rwanda, Uganda, Malawi, South Africa, and other parts of the sub-Saharan African region. In addition, India, though previously stronger in printing than publishing services, was noted by stakeholders to have an increasingly large presence in textbook bids across a wide span of low- and middle-income countries.

Ian Montagnes (2000) remarks that the provision of textbooks in developing countries followed three general stages:

- Initially, the countries imported existing books from the North, usually from the colonial or former colonial power.
- Next, they began using adapted versions of foreign books, modified to meet local needs and experience, and often published by transnational companies based in the former colonial power.
- In the third stage, books were written and produced locally, often by the state.⁵⁸

Montagnes further notes that most countries had instituted systems to locally publish primary school textbooks by 1990. There was variation, and there continues to be differences in the publishing source for textbooks in more specialized subjects and areas, such as those at the secondary level.

The experience of Anglophone and Francophone countries in sub-Saharan Africa has been very different, especially at the second stage of Montagnes' textbook development path outlined above. One of the key differences between publishing development in these two groups of countries was the

⁵⁸ Montagnes (2000). p.10

willingness of British publishers to open subsidiary companies in selected African markets. These companies were locally staffed under expatriate management, which provided excellent on-the-job training in the full range of professional publishing skills. When well-trained and experienced local staff left the multinational subsidiaries, local citizens were in a position to establish national companies with the necessary skill sets to succeed. In contrast, French metropolitan publishing companies were more reluctant to establish local subsidiary publishing companies – as opposed to marketing and distribution companies – so that the transfer of publishing skills to local publishers was less pronounced.⁵⁹

Finding 2: Although a small number of low- and middle-income countries have maintained successful state-control of school textbook publishing over several decades, many state textbook publishing enterprises have significantly diminished or ceased in operation. This is mainly as a result of gradual emergence of local commercial publishing capacities and various critiques directed at state publishers, including: an overall inability to manage the recommended diversity of national learning needs, inadequate attentiveness to timeliness in the review and approval processes, and challenges maintaining the overall print and content quality of resulting textbook products.

Regardless of location, some form of state participation in the textbook publishing market appears to be the norm. It has been claimed that, “In virtually every country of the world, the state is involved to some extent in the provision of learning materials – at the very least by establishing the curricula on which school books are based and, even in the freest of markets, by buying some or all of the materials used in the public system.”⁶⁰ The history, dynamics, and degree of engagement, of course, vary widely and are contextually-dependent on the size of the country, any legacies of colonial dependence, economic stability, and technical infrastructure, among other factors.

Some national governments became involved in the management of public school learning materials as “a matter of ideology” while others assumed roles that were left vacant, unable to be filled by alternative publishers, or were being undesirably managed by other entities. For a period of time, large multi-nationals, such as the World Bank, played a role in encouraging centralized attention and state management of the complex task of textbook production and provision.^{61,62} The guiding sentiment was that the government was best positioned to make far-reaching and complex decisions about curriculum and teaching and learning materials. Even a few of the stakeholders interviewed shared that a centralized system has an active place in managing publishing decisions and some publishing practices.

In the case of the Indian sub-continent, state textbook publishing has continued over decades of political and economic change. Indeed, India, Pakistan and Bangladesh have all operated for many years with state textbook publishing structures based on free supply of school textbooks to government primary schools. However, in all three countries widespread dissatisfaction with the output quality of government schools led to the rapid growth of private schools, which has provided a profitable market to support private sector school book publishing. Similarly, in Kenya, Nigeria, and other parts of sub-

⁵⁹ Read, T. (2015)

⁶⁰ Montagnes (2000), p.11

⁶¹ Montagnes (2000)

⁶² Heyneman & Farrell (1978)

Saharan Africa, the growth of private schools has provided important additional markets that support private sector publishers as well (as described further in Finding 3 below).

Despite the continued legacy and reported support for monopolistic state publishing systems, there are some common observed challenges in the approach. A few of the primary concerns are summarized below:

- Lack of specialized ability and resources to manage the full publishing process;
- Poor quality, caused in part by lack of oversight and lack of competition;
- Poor development of local publishing industry, especially in low- and middle-income countries where publishing environments are heavily based on the education/school textbook market; in many cases, state publishing destroyed good and functional local publishing industries.⁶³

Even though criticisms and cautions have been lodged at monopolistic state publishing projects from researchers and practitioners, there has been a re-emergence of state control of textbook publishing in some country settings and policy discussions. Four cases in sub-Saharan Africa help illustrate this trend. In Tanzania, curriculum design, textbook authorship and textbook publishing have recently been re-established as the responsibility of the Tanzania Institute of Education. Primary textbook publishing in Malawi has been re-confirmed as a role for the Malawi Institute of Education (MIE). The donor-funded Tusome project in Kenya has recently re-created monopolistic textbook supply for grades 1 and 2. Lastly, in Uganda, donors have supported sole source textbook procurement for secondary textbooks.⁶⁴ In this regard, government policy has a direct impact on the existence, size, and role of private sector textbook publishers. If government restricts access to parts of the school textbook market, the private sector publishing sector may have trouble developing and flourishing. In sub-Saharan Africa, for example, the school textbook market often represents 90% of the total books market.⁶⁵ Local publishing industries that are denied access to the school market will thus have difficulty in surviving.

Finding 3: Private local and regional publishers in low- and middle-income countries have significantly increased in number and competitiveness, and in many instances are now dominant in local textbook markets.

In some countries, private sector participants replaced troubled state publishing systems and private markets are being deliberately supported through more open and transparent vetting processes. Consultations reveal that local publishing knowledge and capacity is improving, and more reliable funding opportunities are appearing.

A currently familiar landscape in many low- and middle-income countries is one in which local and regional private sector publishers have an unprecedented higher share in their school textbook market than multi-national counterparts headquartered in Europe and North America. Throughout much of sub-Saharan Africa, for example, a measured, though perhaps quasi-, exodus of multi-national publishers has been witnessed. In Rwanda, over a 7-year period, the participation of local publishers in the textbook bidding process increased 6-fold; less than 15 percent of the bidders in the 2009 competition were

⁶³ Read, T. (2015)

⁶⁴ Ibid.

⁶⁵ Ibid.

Rwandan publishers, while by 2015, close to 40% of the bidders were local. At the same time, there were fewer participating multi-national publishers who were not from low- and middle-income countries. While nearly half of the bidders in the 2009 competition were international, only two of the 31 bidders in the 2015 competition were foreign; both were from the UK.⁶⁶ In Côte d’Ivoire, French international publishers held a monopoly on textbooks provision for more than 40 years after independence. Currently, local publishers have challenged the landscape by securing larger contracts within their national textbook market.⁶⁷

Even in India, Bangladesh, and Pakistan, where there is control of the government school textbook publishing market, the private sector for schoolbook publishers has dramatically increased in number. According to Read (2016), the following common factors can be associated with such growth and development in all three countries:

- The emergence of a significant private school market in all three countries which has provided private sector publishers with access to alternative school textbook markets
- Large and growing market size, which provides support for a variety of alternative publishing market sectors in all three countries and thus reduces dependence on textbook publishing for government schools
- In India and Bangladesh, significant economic growth over the past 20 years has increased national purchasing power
- The development and growth of large local language publishing markets⁶⁸

As shown in Table 1 below, in selected countries within sub-Saharan Africa, there is now a mix of providers for textbooks at the primary and secondary level. In general, local publishers are dominant providers within the primary school market, whereas, international and (in cases where data was readily available) regional publishers have more specialized roles in authorship and publishing of secondary school textbooks.

Table 1. Sources of textbook authorship/publishing for grades 1, 6, 8, and 11

Country	Local	Regional	International
Benin	All Grades	Secondary	Secondary
Burundi	All Grades	unknown	All Grades
Cote d’Ivoire	All Grades	unknown	All Grades
Kenya	All Grades	unknown	Secondary
Madagascar	Primary and Junior Secondary	Upper Secondary	Primary, Secondary
Mali	All Grades	unknown	unknown
Namibia	All Grades	Upper Secondary	Primary, unknown
Nigeria	All Grades		All Grades
Rwanda	Primary Junior	All Grades	All Grades

⁶⁶ R4D & IEP (2016)

⁶⁷ Read, T. (2015)

⁶⁸ Read, T. (2016). Textbook Publishing Case Study. Unpublished.

	Secondary		
Sierra Leone		All Grades	All Grades
Chad	Secondary		All Grades

Note: from Read, T. (2015) Table, 3.8, p.61; Stakeholder Interviews

Unofficial reports indicate that economic and political pressures have negatively impacted the presence of the international publishers. Renewed focus on curbing corruption led to stiff sanctions on at least two major international publishers, which negatively impacted the sanctioned publishers’ profit-making abilities. Stakeholders consistently offered the opinion that as a by-product of the sanctions, other foreign, multi-national publishers may have been swayed to alter direction and minimize potential risk of similar penalties and sanctions for actions hard to control from afar. Additional input suggested that factors unrelated to the direct work in low-and middle-income countries may be stronger catalysts for restructuring or any reduction in presence.

The future involvement of multi-national publishers in the low- and middle-income country school textbook market, however, is uncertain. Textbook printing, which is not a focus of this study, is still an arena with considerable and dominant international influence and control, especially for low- and middle-income countries. In addition, the current foray into largely uncharted territories of digital learning, accompanied by a transformation of multi-nationals into quasi-software and IT firms, may drive demand for their services (and perceived expertise) back to the same environments they recently “departed.” Indeed, in most cases the multinationals have not actually departed. Instead they operate in a different way – most frequently via local agents or in a change of focus.

b) Mechanisms and models to generate textbook content and copyrights

Finding 4: Weak copyright enforcement and rampant piracy challenge textbook quality, with both commonly mentioned as critical problems in low- and middle-income countries. Many stakeholders expressed concerns that there may also be inadequate attention to digital rights management (DRM) which constrains the will and profit of textbook authors and publishers in digital learning materials.

Stakeholder interviews reveal that copyright laws and philosophies seem to be consistently adopted by individual countries, publishers, and authors across the globe; however, the methods and degree of enforcement vary widely. Copyright, or the exclusive legal rights a creator has over the print, publishing, and utilization of the creator’s work, usually belongs to publishers who can issue reprints; however, there is variety here as well. Private individuals who author content for textbooks also typically retain copyright for their submitted material and may receive royalties whenever reprints are produced. In the relationship between textbook publishers and ministries of education, copyright is usually retained by the publisher and this has not been perceived as a problem. Again, differences appear in considerations of various countries and regions. As Read (2015) argues, “The issue of copyright ownership of textbooks has largely disappeared as a bone of contention in Anglophone countries but is still a subject of discussion and discord between MOEs and private-sector publishers in francophone Africa.”⁶⁹

⁶⁹ Read, T. (2015), p.45

As mentioned, the publishers are not always owners of textbook copyright. In India, mainly at the primary school levels, the government produces the textbooks, and so owns the copyrights. This situation is the same in many francophone sub-Saharan African countries. In contrast, in the Philippines, the government purchases textbooks from publishers and in essence, buys the copyright as well. Table 2 below outlines a variety of scenarios for identifying copyright ownership in four general cases of textbook origination:

1. Books developed by Ministry of Education or government agency and printed/published by private sector.
2. Books developed and printed/published by private sector.
3. Books developed by private sector and printed by government.
4. Educational content repackaged from open source resources.⁷⁰

Table 2. Intellectual property/Copyright ownership scenarios in textbook publishing

Author/Commissioning Agency	Printer/Publisher	Copyright Owner
Staff of MoE or National Textbook Development Agency	Government or Private Sector	Ministry/Agency
Private Individual	Government printing house	Private Individual
Private Individual	Government contractor	Private individual
Private Individual	Private printer or publisher	Private individual
Private individual commissioned by publisher	Private printer or publisher	Private individual or publisher, depending on agreement as to who owns content.
Publisher commissioned by Ministry of other government agency		Ministry/Agency, unless contract stipulates publisher as copyright owner.
Open Education Resources	Create commons or other licensing	Difficult to ascertain, particularly in cases where content has been repackaged multiple times.

Note: From Crabbe, Nyingi, & Abadzi (2014). *Textbook Development in Low-Income Countries*. p.93

Our analysis indicates that Infringement of Intellectual property rights is a widely-reported issue. Copyright laws are usually violated in efforts to cut costs for the end user or to generate profit for a player outside of the official market and bureaucracy. In many low-income countries, there is a recurrent concern about textbook theft and frequent copyright violations due to massive illegal reproduction of textbooks, or piracy. Such activities divert available funding away from legitimate textbook purchases.

Another problem related to piracy is that the focus of school expenditures shifts to texts with poor quality reproduction, and often low-level durability: "...Pirates do not bother with thread-sewn bindings

⁷⁰ Crabbe, Nyingi, & Abadzi (2014). p.94

or durable finishing but produce the books in poor-quality glued bindings.”⁷¹ Those involved in creating and marketing pirated works are able to circumvent the bureaucracy, avoid extensive publication costs and taxes, and distribute cheaper products to a consumer base. Government bodies exist in many settings to help regulate copyright laws, but enforcement is reportedly weak and penalties do not sway potential violators.

Namibia’s recent textbook evaluation reform plan is an illustrative example of an attempt to curb copyright infringement, improve content quality, and increase selection transparency. According to interviews with stakeholders, selection criteria now consider the risk of textbook theft and potential copyright violations. In the new system, evaluators are sequestered in an area removed from the school and government office environment as part of a single- or multiple-day process of reviewing submitted textbooks. The textbooks are provided to the review committee in a secured package when they arrive at the location and the textbooks are not allowed to leave the premises. Additional insight on how the textbook bidding reform process has impacted goals for transparency and quality are described in Finding 5.

Finding 5: Textbook publishing involves a number of stakeholders with vested interests, with content development and textbook selection decisions often deeply political in nature. In order to minimize adverse effects and ensure long-term sustainability, it is crucial to identify and involve key stakeholder groups in all parts of the school textbook reform planning and implementation processes.

Deeply vested interests in textbook publishing offer unique opportunities and challenges to producing quality products and services, especially at the country-level. While some stakeholders are vocal, coordinated, and woven into national dialogue around textbook development and reform, others are inconsistently included in these critical conversations. In our consultations, stakeholders noted that omission of key parties was sometimes deliberate and other times mere, yet still problematic, oversight. Further, issues of graft have been noted at multiple levels and deemed to be an ongoing problem. In order to balance the need for stakeholder input with the need to protect the industry from corrupt and undue influence, it is vital to both promote and monitor advocacy efforts.

Two ways textbook publishing stakeholders advocate for their business interests are through publishers’ associations and the development of oversight boards. Engagement of such associations in policy-development activities varies. Stakeholders reported a desire for greater involvement and consultation since they are well-attuned with the specifics of the industry and related implications of change. Balanced representation on textbook boards, along with dedicated and consistent attention to the full scope of stakeholder interests, including school textbook publishing, have been reported as shortcomings in the past. Stakeholders consulted revealed that the National Textbook Development Board of the Philippines, for example, was seen as shifting focus and placing inordinate attention on awards for trade book publishers, and other sectors outside of school textbook publishing.

Another example of opportunities and challenges with national textbook boards comes from Namibia. In 2008, the late and former President Abraham Lyambo instituted a National Textbook Development

⁷¹ Read, T. (2015). p.113

Board to provide oversight and planning for textbook evaluation and approval activities.⁷² However, a majority of participants on the Board were actual publishers, so indicating a conflict of interest. When the National Textbook Development Board was restructured and comprehensive textbook reform efforts got underway, publishers continued to be consulted but oversight committees with less potential for bias and more representative of the educational community were designed. An official textbook selection committee now includes advisory teachers (senior education officers in the region) focused on content as well as other teachers nominated by regional directors.

A separate case exposing the pitfalls of omitting key stakeholders in large-scale textbook projects or wide-reaching reform efforts comes from Kenya. According to various stakeholders interviewed, a donor-funded project reportedly neglected to adequately consult with local publishers and offer transparent and timely accounts of the opportunity to tender for a free textbook project for selected primary school levels. Any omission and neglect was rather significant in that, as mentioned earlier, primary schools are a core source of consumers for the school textbook industry. Local and regional publishers reported receiving returns of their previously-approved texts from booksellers, due to lack of demand and weak potential for sales.⁷³ The impact of these activities can place the strength of a seasoned and competitive local and regional textbook publishing market in jeopardy, resulting in financial loss and uncertain futures.

The textbook, in theory, is supposed to be a translation of the curriculum. This translation is not always smooth and leads to a variety of different reactions and responses. One response, as mentioned, is to approve the procurement of multiple texts for a single grade and subject, in order to more comprehensively provide teachers and learners with exposure to the full syllabus and target learning objectives. This is the reported practice in Rwanda, Namibia, and a few other countries. It should be noted that this is simply one reason, among many that governments decide to use a multiple book option (MBO) rather than a single book option (SBO) for subjects and grade levels. On the other hand, research indicates that in poorer countries within sub-Saharan Africa, “the case for choice of textbooks at the school level, exercised by teachers, is weak and impractical.”⁷⁴ There are often insufficient funds to purchase multiple textbooks for a single course and classroom. Single textbook policies can offer economies of scale and cost-savings, allow for standardization across classrooms, and could simplify the process for textbook revisions based on changes in curriculum.⁷⁵ India, Philippines and Vietnam are examples of countries that have single book policies per subject. Ultimately, each option type has implications for textbook quality (and publisher competition), costs, as well differentiation of material to address varying student needs.⁷⁶

At times, curriculum development becomes an area of political and cultural contestation. The idea of what to include in the curriculum, syllabus, and textbook often overlooks the diversity of perspectives, power, and goals involved in the society, beyond simply whether all of the “facts” are covered. Local

⁷² Republic of Namibia. 2008. Textbook Policy. Retrieved from http://www.moe.gov.na/files/downloads/b8d_Namibia%20National%20Textbook%20Policy%20Combined.pdf (19 March 2016)

⁷³ Stakeholder Interviews

⁷⁴ Fredriksen, Brar, & Trucano (2015), p.103

⁷⁵ Fredriksen, Brar & Trucano (2015)

⁷⁶ Crabbe, Nyingi, & Abadzi (2014)

stakeholders also play a key role in negotiating these challenges, as demonstrated through the experience of BRAC, an international development organization based in Bangladesh (Box 3).

Box 3. Localization of Curriculum and Publishing by BRAC Education in Bangladesh

BRAC education is one of the largest programs in Bangladesh and reaches about 8%, or approximately 1 million, of all primary school students. The target population for BRAC education is children coming from poor communities and who are likely part of the first-generation in their family to seek formal schooling. These students have family obligations that impact their ability to optimally follow a national curriculum and school timetable. These students are also disadvantaged in that there are fewer adults in the community and home that are literate and able to provide supplemental teaching and tutoring assistance. The current presentation, curricula, and even pedagogy espoused by national textbooks are not seen as adequately supporting the particular needs of BRAC target populations.

As such, BRAC organized a system, with the authorization of the government of Bangladesh, that allows them to author and publish their own textbooks and learning materials for selected grade levels. Textbooks authored and published by BRAC generally adhere to national curriculum guidelines, according to administrators.

This situation is rare, especially in environments like Bangladesh, where a national curriculum guides the development of textbooks and a state publishing system manufactures the final product. However, it demonstrates the role of stakeholders in advocating for special interests that may be outside of the priorities of purview of national forces.

Source: Stakeholder interview and <http://www.brac.net>

c) Interplay between print and digital publishing

Finding 6: Digital learning materials are being piloted and utilized in many low- and middle-income countries. Technology could play an important role in enhancing access to learning but widespread adoption of digital textbooks and displacement of print textbooks may not be feasible in the short-term. A lack of consensus currently exists in regards to definitions and scope, operational challenges, technical barriers, and other factors.

Digital learning materials (DLM) are available in a variety of models and play different roles. In addition, the interplay between print and digital learning materials will differ, especially by subject, and level of education. While some publishers and other stakeholders report that a number of low- and middle-income countries actively utilize digital learning materials at the tertiary education level, instances of national technology plans and systems for digital learning at the primary and secondary level are not common. Notable exceptions may include Rwanda and South

“Technology of itself doesn’t enhance learning! It depends how the technology is designed and implemented; how teachers are supported to use it; how outcomes are measured; what communities are in place to support it.”

Source: Technology Enhanced Learning. Retrieved from: <http://tel.ac.uk/about->

Africa, where there are significant number of projects underway (Boxes 6 and 8 provide illustrative examples). According to one publisher, in most countries, if digital learning materials are requested within a government textbook bid, the common format is a CD-ROM included in a back insert of the book. Nonetheless, smaller scale digital programs implemented by NGOs – specifically involving textbook provision – are widespread and recognized.

It is important to recognize the different types of digital-print interaction and digital file formats. Some digital systems are “parallel,” with content, look, and pedagogical implications that are fairly analogous to print textbooks. This is the system currently being utilized by Worldreader, a non-profit organization focused on the provision of digital books. As part of its expansive operations, Worldreader provides e-books via Kindles to individuals, libraries, and schools in over sixty countries. At least 10 countries in sub-Saharan Africa have reported projects specifically involving digital textbooks. The general file formats used by Worldreader is ePub or MOBI.⁷⁷ Stakeholders report that in addition to ePub and MOBI, PDF (Portable Document Format) is a basic format for digital content, although documents in this format are static text and do not adjust well for viewing when utilized on different types of devices. In contrast to these basic formats, interactive systems are more dynamic, with special features that allow degrees of flexibility and personalization by the user based on specially-designed software applications.

In consultations about inclusive teaching and learning materials, the concept of comprehensive multi-media digital systems were also raised. The opportunity, for example, to “bring the teacher” into the digital medium, was demonstrated through the inclusion of videos and real-time tools for monitoring, feedback, and community support. Box 4 outlines innovations in digital currently being embraced by UNICEF. There is also a current push for “universal design” in digital teaching and learning materials, or a system that will embrace inclusive educational opportunity and optimize support for teachers to effectively deliver to a wider range of students. In considering the feasibility and ability of various countries and systems to adopt the concept of universal design in textbooks, more attention is needed to a number of issues, such as cost, financing, efficiency, incentives, and incorporation into existing government and publishing systems.

⁷⁷ Stakeholder interviews and Worldreader website (www.worldreader.org)

Box 4. RapidPro and eduTrack - Apps for Education

UNICEF apps on the RapidPro platform include RapidSMS, a free open-source framework for building customized mobile services. According to UNICEF, “RapidSMS was designed to be customized for the challenges of governments, multilateral, international- and non-government organizations, and development practitioners: working effectively in spite of geographical remoteness of constituents, limited infrastructure (roads, electricity), and slow data collection (due to paper-based records, slow courier systems, etc.).” There has been noted success in using the technology in the provision of health services, for example, aiding health workers in Africa in their efforts to track pregnant women and refer at-risk women to health facilities. UNICEF is currently working with RapidPro to monitor education progress in different areas.

Additionally, UNICEF's eduTrack is a mobile-phone based data-collection system that helps ministries of education collect data in real-time on issues such as attendance and enrollment in schools. Additional opportunities for real-time support for teachers are currently being explored. For example, one such initiative may be to allow teachers to scan the teacher guide for digital textbooks with their mobile phones, so allowing them to get additional support as needed.

Sources: Stakeholder Interviews;

<http://www.thetoolbox.org/articles/2161-unicef-s-rapidpro-an-app-store-for-good#.VwIBYPrLIU>

<http://www.unicefstories.org/2014/05/20/rapidsms/>

Given the varied types of digital-print interaction and digital file formats, there are enormous cost differences between solely printing textbooks and moving towards including digital learning materials in the school system and classrooms. Financial implications of digital materials are probed in more detail in the forthcoming GBF feasibility study, but it is suffice to note that these cost differences will depend on the type of material used and existing infrastructure.⁷⁸ Stakeholders further noted that uninformed decisions by policymakers and donors may be pressured by large and commercial ICT lobbyists and may have a direct financial impact on multiple components of education budget.

Stakeholders shared that although most governments and policymakers across the globe do not give adequate attention to the range of factors involved in introducing a sustainable plan for digital learning materials, there is generally widespread support for some type of utilization of digital textbooks in public primary and secondary schools. Indeed, a key challenge is that policymakers may lack awareness of the varying components and considerations needed in building and managing a sustainable, efficient, and relevant system for digital learning. Despite this however, there is generally enthusiasm and interest for the inclusion of digital learning options for primary and secondary school students.

Many of the benefits directly relate to addressing current issues of textbook quality and equity. One of the reported challenges in print textbook quality relates to the extensive time and costs involved in curriculum reviews and print textbook revision, some of which take place annually, or as needed by overseeing authorities. In some cases, even in high-income countries, textbook revisions have been

⁷⁸ Fredriksen, Brar, & Trucano (2015)

Box 5. Outdated Primary School Textbooks in Arizona, USA

In Casa Grande, Arizona, public primary school students are reportedly utilizing social studies textbooks without any mention to the election and two terms of U.S. President Barack Obama, the devastating Hurricane Katrina in New Orleans, or the terrorist bombings that occurred on September 11, 2001. This is because the district is still circulating books that are 15-years old, the time of the last textbook revision and before any of these events occurred.

Sources: Casa Grande Dispatch. (2016, Mar). CGESD Coping with old books. Retrieved from: http://www.trivalleycentral.com/casa_grande_dispatch/area_news/cgesd-coping-with-old-books/article_2d2d5e76-ef7c-11e5-a52e-7713da05df28.html

neglected because of the lack of resources to conduct adequate updates, as illustrated in the example in Box 5. The use of technology has been seen as an antidote, of sorts, to challenges in timely revisions. We have heard from interviewees that technology, specifically through the use of digital textbooks, offers the ability to frequently update content in a low-cost manner. Although these updates and revisions will still need to be vetted for quality in a similar manner to print with even more nuances particular to digital, it may be smoother to ‘push’ these revisions and updates out via technology. Exact financial costs and estimates of investment still need to be gathered, and will differ based on national politics, the size of the

country, the basic infrastructure, current technological literacy and capacity, and subject level, among other factors. The role of digital in improving equity in access to educational material and reducing bias in textbook content has also been suggested as possible benefits. There may be specific populations for whom digital materials may be more appropriate and beneficial than print, for example, accessible textbooks for children with disabilities or those in fragile contexts. At the same time, weak digital infrastructure and insufficient attention to policy may constrain the uptake of digital materials in poorer environments, which may exacerbate inequity, particularly the domestic digital divide, if not managed properly. In some environments within low- and middle-income countries, even those with successfully-operating digital textbook projects, the range of needed preparation for digital learning materials is simply off the ready list of shared educational priorities across communities.

In order to accommodate the range of issues stated above, comprehensive policy and planning, including monitoring and evaluation systems, for digital learning materials is critically important. In many instances, however, optimal and integrated policies are sorely lacking. The recommended goal is to ensure that national policies and regulations account for varying infrastructure and support needs. On one end of the spectrum of comprehensive planning for an ICT for education (ICT4E) policy are the experiences of countries such as Rwanda^{79,80}, which stand in contrast to more disjointed efforts, such as those seen in Kenya (Box 6).

⁷⁹ Rwanda Ministry of Education (MINEDUC). (2016, March & 2015, June). Rwanda Draft Master Plan for ICT4E. Unpublished.

⁸⁰ Rwanda Ministry of Education (MINEDUC). (2014, August). Draft ICT in Education Policy document. Unpublished.

Box 6. ICT4E Planning in Rwanda and Kenya

The Rwanda Ministry of Education has undertaken a variety of technology-focused audits of the school system and recently drafted a comprehensive multi-year master plan for ICT integration in education, including a detailed calculation of the total cost of ownership (TCO). The plan reviews and outlines goals and needs for ICT infrastructure; curriculum and content, teacher training, and evaluation, as well as implementation timelines and detailed guides for sustainable resourcing. There is even attention to specific file formats to be utilized for various content types (i.e. textbooks, teacher guides, simulations, lesson, assessments). The emerging National Textbook Policy in Rwanda also includes some attention to digital learning materials. The policy requires that all approved textbooks must be provided to Rwanda Education Board/Ministry of Education in a pdf-format e-version. The new national ICT Master Plan states that one of the key objectives of the Master Plan is to achieve a switch from printed books to e-book distribution and adaptive learning.

On the other end of the spectrum for optimal preliminary and integrated/coordinated planning between print and digital textbooks comes from a recent roll-out in the neighboring country of Kenya. In Kenya, there appeared to be international pressures and political “jockeying” that may have pushed digital projects to move faster than ideal, and without regard to the “neighborhood effects” of the projects. As part of his presidential campaign, Kenya President Uhuru Kenyatta promised to provide every first-year student with a (solar-powered) laptop computer. He won election in March 2013. The apparent goals are to increase “e-literacy” and narrow’s Kenya’s digital divide with more technologically advanced countries. According to various insiders, however, details are not fully elaborated. The campaign promise is currently being fulfilled though rivaled by reported challenges of funding and lack of comprehensive implementation

Lastly, the role of teachers and actual usage of materials to boost learning cannot be forgotten in the discussion and planning of primary school-level digital learning materials. Some stakeholders have expressed fears of a growing ideology of “teacher-neutral” digital materials, where there is not a clear requirement that an experienced teacher is needed to help facilitate learning. It should be noted that the different definitions of an e-textbook have a direct impact on the amount and quality of teacher training. A static e-textbook may require basic training but the complex e-content materials that can be highly interactive require a great deal of teacher training. Such training cannot be accomplished in a single workshop or course. Moreover, studies show that teachers also requested training on hardware devices to complement training on content, indicating the range of teacher capabilities that need to be supported.⁸¹ Given the evidence on teacher reluctance to even issue print textbooks to students, careful attention needs to be paid to ensure that “hoarding” of DLMs does not take place.

Finding 7: A new set of stakeholders – which includes software specialists, pedagogical innovators, computer hardware providers, and those who uniquely combine the technical savvy with teaching and pedagogy – play crucial roles in the school textbook market to drive the creation, provision, funding, and technical management of digital teaching and learning materials. Greater awareness is also needed on how to incorporate learner data as well as learning outputs and outcomes into material development and pedagogical reform.

With the advent of digital learning materials, the current players in the school textbook publishing market are transforming their approach to publishing. Many of the biggest publishers are now providing

⁸¹ R4D & IEP (2016)

“digital solutions” and “evolving into IT or software firms”⁸². Pearson Education, one of the largest international education textbook publishers and a major provider of learning materials to low- and middle-income countries, is an example of a publisher that is in the midst of change. The routine inclusion of such digital solutions in local curriculum schools products for low-income regions, like those in most of Africa, however, is not seen to be feasible in the short-term, largely due to government procurement remaining focused on print.

Other large multi-national textbook providers are not as prepared to declare a full shift of operations and are more ready to discuss slight adaptations. According to McGraw-Hill, a school textbook publisher mainly focused on the US K-12 market: “Digital is clearly the future, but we’re in this blended world, where digital and print are really what our teachers are using today...McGraw-Hill doesn’t think you should throw out the way education has been done and start from scratch...The company is not seeking to create a learning-management platform or get into the device business. Instead, McGraw-Hill will focus on developing its own content, making it adaptive and personalized for students, and putting more effort into developing data dashboards to organize information for teachers.”⁸³

“Pearson [is] trying to break away from the way digital content is being used now. What we’ve done to date is use digital technology to still support a pretty traditional direct-instruction model. [In time], we’re going to see our digital instructional content look less like glorified PDFs.”

Luyen Chou, the Chief Product Officer for K-12 technology at Pearson Education

Source: Education Week: Digital Directions. (2013, Feb). ‘Big Three’ Publishers Rethink K-12 Strategies. Retrieved from: www.edweek.org/dd/articles/2013/02/06/02textbooks.h06.html

Box 7. Six Important Dimensions in Open Educational Resources

1. Free, or at no cost to the user
2. Made very available, or Open, often by Creative Commons (CC) licensing
3. High Quality
4. Modifiable
5. Adoptable Worldwide
6. Useful to Teachers as well as students

In addition to the current players within print textbook publishing, a new set of individuals and groups are beginning to appear. These individuals and organizations are geared to help articulate and respond to the specialized considerations involved in planning and implementing digital learning projects. As mentioned in Finding 6, in many cases, even in countries where there was a relatively comprehensive plan for ICT in education, we

learned that higher-level policymakers were not fully aware of the plans and needed sensitivities in operations for digital learning materials. The details were simply beyond the scope of their knowledge and expertise.

⁸² Trucano, M. (2012, Sept. 27). Textbooks of the future: Will you be buying a product...or a service? WorldBank EduTech Blog. Retrieved from: <http://blogs.worldbank.org/edutech/future-textbooks>

⁸³ Education Week: Digital Directions. (2013, Feb). ‘Big Three’ Publishers Rethink K-12 Strategies. Retrieved from: www.edweek.org/dd/articles/2013/02/06/02textbooks.h06.html. Quote from Stephen Laster, McGraw-Hill Education’s chief digital officer.

In some of the digital textbook publishing markets and in many international education circles, there is a push for Open Educational Resources (OER), which raises a series of new questions about copyright and the profit in textbook-publishing. OER refers to learning material that is not bound by intellectual property rights of authors and publishers.⁸⁴ A leading architect of OER investment strategy at the William and Flora Hewlett Foundation identifies six dimensions which should be represented in OER material (Box 7). According to interviewed stakeholders, there is a lot of loaded pressure to adopt Creative Commons and open source models, yet, even the biggest proponents have not forwarded many cases of best practices. It is unclear what impact digital learning materials and OER may have on independent authors, local businesses, and the “traditional” print textbook publisher’s market.

In addition, concerns about copyright infringement and piracy, mentioned earlier, present even starker challenges within the digital learning material discussion, especially when considering OER. It may be hard to know who gets authorship credit when materials are created with a mix of content, some open source, some based on creative design, and some simply involving numerous contributors.

An innovative example offering lessons in this area comes from South Africa, an upper-middle income country that was often referenced as being an exception to many of the common challenges in textbook publishing within low- and middle-income countries. According to those interviewed, there is a fair amount happening in the digital market in South Africa, even though it represents a very small percentage of education sales for large multinational publishers. Box 8 shares findings from a local digital learning provider in South Africa, and the potential of technology and OER in increasing access to content.

During this rapid study, multiple stakeholders noted that a digital platform holds “revolutionary potential” in enabling learners to convey details about their learning experience. There is a currently a reported disconnect between instructional and learning material that are developed and what actually happens in the classroom and in the learner’s cognitive understanding.

Box 8. Siyavula in South Africa – Interactive Open Source Textbooks for Grades 4-12

Siyavula, a South African digital learning provider, utilizes a full learning management platform to produce curriculum-aligned, mathematics and science textbooks for grades 4-12. They offer technology enabled with “Intelligent Practice,” which enables content that is adapted to the individual needs of each learner. All their learning materials are Open Educational Resources, or “openly-licensed content ... permanently unlocked for redistribution, reuse, revision and remixing by anyone to meet their specific needs.” Siyavula materials are reportedly accessible in multiple formats and on varied devices, including smartphones, and are also available for print use. Siyavula notes that “most school users are from poor, rural schools.” Assessment and analysis on student learning are part of the company’s services. Links to Siyavula’s website and resources are included on the education ministry of South Africa’s official website.

Source: <http://www.siyavula.com>
http://www.siyavula.com/downloads/Siyavula_Education-Company_brochure.pdf

⁸⁴ Frydenberg, J & Matkin, G. (2007)

Digital learning technology allows savvy technical engineers to give learners a tool they can use that will simultaneously convey information about their academic performance and learning. One stakeholder claimed that such real-time assessment “would raise the veil over the ‘blackhole’ of what goes on in the classroom.” Nonetheless, such a tool must be used sensitively by those who have a vested interest in learner and community well-being and there are ethics involved in how to manage the data. Indeed, some interviewees noted that the private sector “has no business” in the emerging market of managing learner-generated data. In time, the question becomes, how can this be controlled, in an environment, in which the public sector may not have the expertise and competitive edge?

IV. Options for Action

The textbook publishing sector is rapidly evolving, with the interplay between state and commercial publishing, content and copyright models, and the role of digital learning varying within and across low- and middle- income countries. As explored in Section III, our research and stakeholder consultations indicate that issues identified are context-dependent and that is very difficult to generalize trends in textbook publishing across countries.

In this final section, we propose five areas for action for the Commission to consider in tackling the problem:

Recommendation 1: Develop open and transparent textbook selection processes to improve content and quality.

Recommendation 2: Support capacity in setting and pushing forward comprehensive policies and regulations on ICT4E and e-learning.

Recommendation 3: Need for increased coordination between agencies that are involved in ICT4E.

Recommendation 4: Strengthen and promote greater awareness of the role of teachers in textbook selection and usage in order to improve pedagogy and learning outcomes.

Recommendation 5: Implement and support systemic reforms to ensure that the mounting evidence on addressing cost and financing issues is translated into concrete action.

These recommendations are informed by our analyses and consultations with key stakeholders, and will need to be adapted and refined based on country needs. We emphasize that these options are drawn from the specific lens of the study, namely addressing the role of local, regional and international publishers in book provision and mechanisms of enhancing textbook content quality and increasing access.

Each recommendation is now described in turn.

Recommendation 1: Develop open and transparent textbook selection processes to improve content and quality.

Although the textbook selection process varies by country, we generalize the steps as follows: the government sets the curriculum; a curriculum development agency articulates it into a syllabus; bids are then invited, and following a selection process, publishers and/or authors are contracted to develop the content. Our stakeholder consultations indicate that this last step is crucial and a comprehensive, open, textbook selection process is vital to improve quality and ensure adherence to the specified curricula and syllabus.

As explored in Finding 4 and 5, the establishment of a rigorous system of textbook evaluation is one of the most critical factors after adequate funding in ensuring that good quality affordable textbooks are approved for use in schools.⁸⁵ As shared by stakeholders, there are enormous vested interests in the vetting process that can easily compromise optimal quality and fairness. The selection committee must involve a diverse team of stakeholders with no conflicts of interest. In addition, as was done in Namibia,

⁸⁵ Read, T. (2015)

there must be very clear steps in the textbook selection process: namely detailed information around the release of terms of reference; specifications for manuscripts; and clear articulation on assessment tools for selection. Copyright legislation must also be enforced, with offenders subject to sanctions and prohibition from participation in future tenders for a set number of years.⁸⁶

Importantly, strict and well developed evaluation criteria can also be designed to reduce bias in textbook content and can serve to tackle the under-representation of girls in textbooks and curricula.⁸⁷ Indeed, as noted by UNESCO (2009): “Gender inequality and discrimination are reinforced by textbooks, whose power of legitimation is all the greater because they are a rare commodity; girls have fewer books than boys, since textbooks are expensive and in short supply; the representations of both genders in textbooks, reinforced through teacher/pupil interaction with the teacher, continue to put girls at a disadvantage.”⁸⁸ Evaluation criteria can be accordingly designed to mitigate the gender discrimination, and purposefully promote gender equality.

Greater harmonization and standardization of a fair and efficient vetting process for submitted textbooks has been a stated desire and may help multiple parties. Governments would have a tested set of protocols to adopt; additionally, regional and international publishers, along with local publishers interested in entering foreign competitions, would have a clear understanding of what is required. As more complicated considerations enter the discussion for digital textbook publishing, this recommendation becomes even more salient. In the short-term, however, the first step should be developing a transparent and open system, followed by the crafting of more standard screening protocols. There is currently a wide-range of vetting systems spanning from newly-comprehensive to piecemeal or make-shift. Variety also currently exists in country-capacity to involve the right types of stakeholders and adapt a specific system. Creating a common set of criteria for textbook evaluation and selection may not happen immediately. It is a process that would take significant time, deliberation, and technical support and indeed, this is something that could be taken on as part of a potential GBF.

The timing and frequency of curriculum-revisions is still a subject of debate, but needy of attention. While revisions may help ensure that textbooks are reflective of current content and lessons-learned, the curriculum-development process is time-intensive and costly – for publishers and for consumers.⁸⁹ In general, curricula should be revised regularly, but not too frequently. As noted by Montagnes (2000), the economical provision of textbooks and learning materials requires a balance in curriculum development between the pedagogical desirability of revision and the financial desirability of stability.⁹⁰

Recommendation 2: Support capacity in setting and pushing forward comprehensive policies and regulations on ICT4E and e-learning.

All stakeholders consulted made clear that the role of technology in education cannot be ignored. ICT is playing a key role at all levels; textbook content is being simultaneously created in print and digital

⁸⁶ Montagnes (2000)

⁸⁷ Benavot (2016, Mar. 8)

⁸⁸ Brugeilles, C. & Cromer, S. (2009)

⁸⁹ Read, T. (2015)

⁹⁰ Montagnes (2000), p.55

format, digital textbooks – in various forms and mechanisms – are increasingly prominent, and educators and innovators are attempting to use real-time student assessment data to improve learning.

Given the rapidly evolving landscape, nearly all stakeholders commented on the need to support the capacity of government agencies in low- and middle- income countries in both setting and pushing forward their e-learning agendas. As noted in a recent article: “[Policymakers] and educators often find themselves overwhelmed by the number of edutech innovations available, and unsure how to identify the wisest investments.”⁹¹ In some cases, such as with BRAC in Bangladesh, countries will demonstrate the internal support and vision to pilot and lead digital learning projects; however, external funding may be needed to supplement the efforts. In addition, although countries are beginning to articulate Information and Communications Technology for Education (ICT4E) policies, these often do not include references to digital reading components, or reading outcomes and literacy as a specific objective.⁹² In addition, national capacity for monitoring and evaluation (M&E) for ICT4E policies and projects must also be strengthened. Stakeholders consulted remarked that ministries may lack the technical and financial capacity to select, support, monitor, and evaluate DLM and ICT in schools; most M&E is also self-reported by implementers and tend to be “snapshot evaluations,” rather than longitudinal or comprehensive assessments. Multilateral and bilateral funders as well as international implementers and specialists thus often play a key role in supporting countries in their ICT4E strategies. Indeed, funders can play a role in both helping set and shape the ICT4E agenda, clarify objectives, and ensure that the impacts of new technology can be accurately measured.⁹³ The sustainability of such efforts must be closely considered, with careful attention paid to the effectiveness of knowledge transfer from international technical experts.

Importantly, given that experts reiterate the trend towards “wrap-around” services that combine textbook content and assessment, it is crucial that governments are provided the support needed to set and guide policies on how end user data will be gathered, and who will own such data. Although such services may not be a reality for many developing countries for some time, it is important that governments have the capacity and information needed to lead the dialogue and that the political aspects of gathering and sharing student assessment data are carefully considered. As one stakeholder reported, “Some (government) ministries are generally paranoid about the release of any data [because] of the perceived risk and potential fear of the data casting a bad light...Objective data may not be desirable.” While conscientious publishers will understand the sensitivity of utilizing student-generated data, its use is a relatively new undertaking and leads to active debate all around the world.

ICT4E strategies must include practical, forward looking guidelines to support digital textbooks and digital learning. It is important to note that such guidelines are ideal guides, and in an evolving industry, such as digital learning, the plans are subject to unexpected change, regardless of the country attempting to implement the plan. For example, South Korea has adopted the widespread use of digital textbooks and established a comprehensive, 10+ year, multi-billion dollar, three-phase plan to research,

⁹¹ Tyson, J. (2016, April 6). How to get education technology right. Devex. Retrieved from: <https://www.devex.com/news/how-to-get-education-technology-right-87935>

⁹² R4D & IEP (2016)

⁹³ Tyson, J. (2016, April 6)

develop, and disseminate materials the program.⁹⁴ The plan began in 2002 yet has not been fully implemented. In other high-income countries, guidelines are only now developing. In 2012, the United States unveiled a “Digital Textbook Playbook” to guide K-12 educators in transitioning to digital textbooks. Adoption in the United States is also constrained by challenges of connectivity, device procurement, and the transition management – indeed, many of the same challenges seen in low- and middle- income countries around the world.⁹⁵ The Digital Textbook Playbook – led by a multi-stakeholder effort from school officials, educators, non-profits, and those in the textbook sector – offers information and lessons on the transition to digital learning. Such a blueprint can be a valuable resource as other countries develop their own plans and strategies.

Recommendation 3: Need for increased coordination between agencies that are involved in ICT4E.

In many developing countries, coordination between agencies that are involved in ICT4E policies must also be increased. Many stakeholders commented that multiple government agencies – for example, the ministry of education, the ICT ministry, or a specialized agency with a digital materials focus – are involved at numerous stages of ICT4E policies. The process for digital learning materials – whether it be a static print textbook in a digital format or broader digital learning – is not detailed or comprehensive.

For example, even Rwanda, frequently referenced as an illustrative example of a country that has made great strides in its process of digitization (Finding 6), faces challenges in coordination. Three different agencies – Ministry of Education, Curriculum, Production Materials Department, and Rwanda Education Board ICT – manage digital content, with a stakeholder noting that there is often little communication among them.

Stakeholder reflections indicate an absence of clear lines of command, distinct regulating bodies, and central actors. Indeed, expert stakeholders consulted were largely unable to communicate a solid understanding of what happens in a particular country, let alone a series of countries loosely connected by socio-economic status. In contrast, there is slowly emerging a clear, coordinated process in developed countries, and such structures could serve as valuable tools to be adapted as appropriate.

Recommendation 4: Strengthen and promote greater awareness of the role of teachers in textbook selection and usage in order to improve pedagogy and learning outcomes.

As mentioned earlier, the role of the teacher in various aspects of textbook publishing varies. In regards to “traditional” print textbook publishing, teachers may assist in authoring textbooks; they may serve on textbook review and selection committees; and they may be active in a procurement team at the district or school level. In terms of digital textbook publishing, the roles may still include authorship and content development, but the method for submission and participation will likely be different. In both print and digital textbook systems, all teachers must be sufficiently trained and be fully considered in planning and policies. We have found that many teachers are inexperienced, only partially trained or even not trained

⁹⁴ Jung, S. & Lim, K. (2009). Leading Future Education: Development of Digital Textbooks in Korea. Retrieved from; <http://www.unescobkk.org/education/apeid/apeid-international-conference/apeidconf08/speakers-and-speeches/sung-moo-jung/leading-future-education-digital-textbook-development-in-korea/>

⁹⁵ Federal Communications Commission. Digital Textbook Playbook. Factsheet. Retrieved from: https://apps.fcc.gov/edocs_public/attachmatch/DOC-312244A1.pdf

at all; some are both reluctant and unaware of how to use textbooks effectively.⁹⁶ The challenge will be greater with the inclusion of digital learning materials into the classroom.

Some respondents expressed fears of a growing ideology of “teacher-neutral” digital materials, in which there is not a clear requirement that an experienced teacher help facilitate the learning. However, as the World Bank’s World Development Report 2016, notes: “In reality, experience from around the world demonstrates that, over time, the role of teachers becomes more central—and not peripheral—as a result of the introduction of new technologies. [While] technology will not replace teachers, teachers who use technology will replace those who do not. These teachers, in addition to having a suite of basic technology-related skills, will be asked to take on new, often more sophisticated duties and responsibilities in ways that will challenge the existing capacity of many educational systems to prepare and support teachers over time.”⁹⁷ The level of training needed for digital begins at basic computer literacy, however, will vary based on the digital learning format adapted for use in a respective learning environment.

Textbooks will be most effective when teachers are optimally involved in the procurement process and are able to efficiently adapt to constantly evolving teaching and learning materials. Governments and supporting agencies should: ensure that teachers are educated in how to select of appropriate learning materials; publishers and highly experienced educators should be available to facilitate workshops for teachers on how to optimally utilize textbooks that have been selected; and all relevant stakeholders – governments, supporting agencies, and publishers, along with technology providers – should support intensive training programs for teachers and teacher-trainers in educational technology systems and techniques.⁹⁸ Teacher training on technology can include both pre-service and in-service training components, and need to cover three key dimensions of capabilities:

- General technology capabilities,
- Use of specific software, which will vary with the application,
- Teaching strategies on how DLMs and education apps can be used to boost learning.⁹⁹

Such training can help ensure that DLMs are confidently used by teachers and students.

Recommendation 5: Implement and support systemic reforms to ensure that the mounting evidence on addressing cost and financing issues is translated into concrete action.

Our findings and first four recommendations underscore the importance of systemic reforms and the need for concerted action and improvements in key systems which govern and directly impact textbook publishing. This complements existing research: Fredriksen, Brar, and Trucano (2015), for example, state that “[the] urgent need to establish the sustainable and transparent national systems needed to address the high textbook cost/low textbook availability program” is the “single most important recommendation” of their report.¹⁰⁰ Improving textbook availability and quality requires, in part,

⁹⁶ R4D & IEP (2016)

⁹⁷ World Bank. (2016). *World Development Report 2016: Digital Dividends*. Washington, DC: World Bank., p.147

⁹⁸ Montagnes (2000)

⁹⁹ Arias Ortiz, E. & Cristia, J. (2014). *The IDB and Technology in Education: How to Promote Effective Programs?* Washington, DC: Inter-American Development Bank.

¹⁰⁰ Fredriksen, Brar & Trucano (2015)

cooperation between governments and publishers, and shifts in policies and behavior by both parties. Given the urgency of the issue, we raise this again as a critical recommendation.

Although country conditions and the extent of issues may differ, there are widely documented system weaknesses, such as faulty, incomplete, or unreliable information systems on textbooks; inconsistent country-level government funding; lack of adequate attention to the cost of book distribution; disparate curriculum standards; and sometimes unmanageable syllabi.^{101,102} Each of these systems severely affects the decisions and behavior of publishers, including the final assigned cost of the textbook presented to the consumer. Given the enormous evidence already generated by recent studies, it is important to foster action that will close the gap between the evidence that exists for improving textbook availability and quality and the actual implementation of system-based policies and practices based on gathered data.

For example, in terms of financing, recent literature shows in many cases, it is not necessarily the lack of absolute financing that is a challenge in textbook provision, but rather, a lack of progress in addressing the systemic issues that lead to high cost, wastage, poor distribution and low classroom use.¹⁰³ The solutions are already known – for instance, a dedicated line item in budgets for textbooks to ensure sustainable and predictable financing – and it is therefore critical to act to address these system weaknesses.

Importantly, efforts to remove systemic barriers often require action on the part of the government before the publishers can act in turn. For example, many countries have data management platforms, such as Education Management Information Systems (EMIS), which attempt to collect data on the number and availability of textbooks in a given school, district, or region. However, resulting data is questionable in terms of accuracy and is subject to varied interpretation.¹⁰⁴ Therefore, national efforts to promote and establish comprehensive information systems on textbooks are strongly recommended; such systems directly inform country textbook budgets and requests to publishers for specific books and numbers of books.

Similarly, curriculum design and management are steeped in politics, diverse interests, and varied country and community contexts (Finding 5). While the range of factors involved in establishing inclusive, current, locally-relevant, and globally-competitive curricula should not be downplayed, disparate curriculum standards and unnecessarily lofty syllabi may impede the ability to secure quality and affordable textbooks. Government action to promote realistic curricula and experience-based syllabus design may serve to significantly reduce dependency on multiple textbooks in a single course. Streamlining the curriculum can thus assist publishers in producing books that allow countries to more effectively cover the full curriculum. Regional efforts towards textbook harmonization for certain subjects, such as those proposed within the East African Community (EAC), may help promote efficiency and reduce cost in textbook publishing.¹⁰⁵ Such national and regional efforts should be further reviewed

¹⁰¹ Ibid.

¹⁰² Read, T. (2015)

¹⁰³ Fredriksen, Brar & Trucano (2015)

¹⁰⁴ Read, T. (2015)

¹⁰⁵ Fredriksen, Brar & Trucano (2015)

and supported, by both policymakers and aid agencies. Indeed, such broad systemic reforms are needed to complement more specific recommendations around open, transparent textbook selection processes (Recommendation 1).

As has been mentioned, corruption, fund diversion, collusion and fund misappropriation are also all significant challenges that lead to high costs and low availability.^{106,107} Given this, systemic reforms also need to extend to good governance and a supportive enabling environment for efficient and sustainable textbooks provision programs. Indeed, accountability and effective engagement of the community has been shown to be effective in monitoring distribution and could serve to reduce corruption.¹⁰⁸

In sum, problems with school textbook quality and access have persisted after decades of development aid and despite increasing data on what works. Therefore, we conclude with an urgent call for action and change – extending to both national governments and funders – to ensure that evidence is translated into concrete action.

¹⁰⁶ Ibid.

¹⁰⁷ Read, T. (2015)

¹⁰⁸ R4D & IEP (2016)

V. Opportunities for Further Research

Over the course of our research, many consulted stakeholders commented on the need for further research and testing to boost the evidence base on discrete areas related to the textbook publishing sector. The three themes briefly discussed below were raised over the course of our discussions and also emerged as gaps during our literature review:

- **Financial considerations:** The financial aspect is not probed in our study, although recent literature highlights the “inadequate, irregular, and unpredictable financing” of teaching and learning material needs.¹⁰⁹ The forthcoming GBF feasibility study also focuses on financial considerations, including both the financing gaps for reading books and textbooks and the feasibility of digital materials. Although ICT investments are already being made in many low- and middle- income countries, careful consideration is needed to understand both the cost-effectiveness of different types of digital material (including both static material on digital devices as well as more interactive materials), and under what contexts different options may be most suitable. A 2008 World Bank report noted that “When taken at scale, some studies suggest the cost of producing accessible digital versions of textbooks may be marginal compared to current levels of public funding on textbooks.”¹¹⁰ This area, however, needs further comprehensive probing. Indeed, UNICEF noted an upcoming feasibility study on digital textbooks, which will place strong attention on accurately estimating costs of conversion of books in various formats (video, sign language, simplified language, mother tongue), and across various countries. As mentioned earlier, high costs of textbook production translate into high costs for the consumer and may negatively impact quality, procurement, distribution, and utilization.
- **Open Education Resources (OER):** Consulted stakeholders noted that the OER discussion to date has centered on the potential of free, open licenses to increase pupil access to learning materials. However, questions remain around the quality implications of OER, their applicability and alignment with curricula, and how such materials can be integrated into the learning environment in order to boost literacy outcomes. Additional questions that merit consideration include: what are the commercial implications of OER for local textbook publishing markets? How are governments positioned to respond in developing countries? Are curriculum-aligned downloadable OER materials – such as those produced by Siyavula – more cost-effectively used in print versus digital formats to boost learning? Further, in regards to tertiary education and teacher development, stakeholders reinforced existing research noting problems of limited access to academic and professional journals. Many quality materials are currently cost-prohibitive yet can enhance or constrain the ability of educators attempting to heed the call for textbook reform. How can OER help remove barriers to access to quality, refereed scholarly journals and publications?
- **Effectiveness and implications of materials:** Provision of textbooks alone is not enough, and careful attention needs to be paid to how materials are being used to boost learning outcomes.

¹⁰⁹ Read, T. (2015)

¹¹⁰ World Bank (2008)

With the growing attention on technological innovations as a mechanism to raise access to learning, stakeholders commented that more research is needed on factors affecting the effectiveness of both print and digital materials. For example, how can the effectiveness of textbook content on learning be better measured? What type of digital materials – static e-textbooks or interactive material – is most effective in boosting learning for different grades and subjects? What type of digital device is most effective for learners at different ages? Will there be any health problems resulting from long-term influence of electronic boards and lessons? Are there any chances of decreased interaction between teachers and students and between students due to potentially more personalized digital lessons and activities?¹¹¹

¹¹¹ These last two questions have been formally raised within the planning process for digital learning in South Korea. (Jung, 2009)

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Annex 1: List of stakeholders consulted

Stakeholder Group	Participant Name	Affiliation
Implementers	Safiqul Islam	BRAC
	Mao Tjiroze	Millennium Challenge Account (Namibia)
	Danielle Zacarias	Worldreader
	Nancy Brown	Worldreader
Literacy and textbook experts	<i>Aliou Sow</i>	<i>ADEA</i>
	<i>Birger Fredriksen</i>	<i>Former World Bank</i>
	Alfonso Felix de Guzman	Former World Bank
	Aaron Benavot	Global Education Monitoring Report (GEM Report), UNESCO
	<i>Nick Read</i>	<i>International Education Partners</i>
	<i>Tony Read</i>	<i>International Education Partners</i>
	Rosangela Berman-Bieler	UNICEF
	Michael Trucano	World Bank
Policymakers	Dzingai Mutumbuka	Former Minister of Education and Culture, Zimbabwe
	Joyce Musabi	Rwanda Education Board
Publishers	Ashok Ghosh	Federation of Indian Publishers (FIP)
	David Waweru	Kenya Publishers Association
	David Muita	Moran Publishers
	Alexander Moore	Pearson Education

Note:

Italicized names are technical advisors included within our own team

