TEXTBOOK POLICIES IN ASIA

DEVELOPMENT, PUBLISHING, PRINTING, DISTRIBUTION, AND FUTURE IMPLICATIONS

Andy Smart and Shanti Jagannathan

DECEMBER 2018

ASIAN DEVELOPMENT BANK

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On the cover: In Bangladesh and Malaysia, students benefit from ADB-supported education programs

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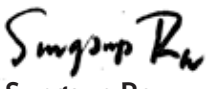
PREFACE

Good textbooks are a key component of quality education together with good curriculum, teachers, and other learning resources. Improving student learning almost always includes enhancing the quality and relevance of textbooks. The 2014 study by Cambridge Assessment, *Why Textbooks Count*, emphasizes the role and function of high-quality textbooks in enhancing learning and system performance. Despite the pervasive spread of information and communication technologies and the proliferation of digital learning resources, textbooks remain highly relevant in the education process and consume considerable budgets and resources in Asia's developing countries.

However, the digital era has challenged conventional practices on textbooks. While digital learning materials are becoming indispensable in the modern era, policymakers need to support the development of high-quality and next-generation physical textbooks that contribute to enhancing students' learning and competencies. Textbooks need updating more frequently and also need to support new pedagogical methods such as interactive and collaborative learning. Textbooks are crucial to the education process and provide a road map for grade and subject-specific learning attainments. In the context of recent global trends and digitalization, it is important to envision a future role for textbooks. There is a need to ensure alignment between curriculum aims, textbooks, pedagogy, learning materials, and student learning assessment to bring about holistic improvements to the quality of education.

The Asian Development Bank (ADB) has ongoing or planned programs relating to school education in Bangladesh, Bhutan, Cambodia, the Federated States of Micronesia, India, the Kyrgyz Republic, the Lao People's Democratic Republic, the Marshall Islands, Mongolia, Myanmar, Nepal, Pakistan, Sri Lanka, and Viet Nam. The continuing need for high-quality textbooks and digital learning tools and systems calls for more intensive efforts and investment by governments to upgrade the quality and relevance of textbooks, in tandem with digital resources and linked to improving student learning attainments.

This report goes into different aspects of textbook policy and practice—textbook writing and authorship; production, publishing, and printing; and distribution and use by teachers and students. We hope that this report helps to trigger a wider discourse on the importance of getting textbook policy and practice right in the journey to improve the quality of education.



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ABBREVIATIONS

DFID	–	Department for International Development of the United Kingdom
ICT	–	information and communication technology
MOE	–	Ministry of Education
MOET	–	Ministry of Education and Training (Viet Nam)
NCTB	–	National Curriculum Textbook Board (Bangladesh)
PDF	–	portable document file
PEP	–	People's Education Press (People's Republic of China)
PIRLS	–	Progress in International Reading Literacy Study
PRC	–	People's Republic of China
ROK	–	Republic of Korea
TLM	–	teaching and learning materials

EXECUTIVE SUMMARY

Good textbook policy is a complex hybrid of different factors that contribute to the quality of education, linking good curriculum, teacher competencies, market practices in learning materials, and school level autonomy. Textbook policymakers need not only an understanding of education in terms of curriculum and subject matter, they also need to be familiar with issues of textbook writing, financing, production, publishing, distribution, and use of textbooks and other materials in the classrooms. This report draws on published evidence, interviews with academics and professionals, including publishers, and suggests ways in which policymakers can make improvements at every point in the textbook development and distribution chain.

An effective textbook policy will address system improvement

The process of developing a textbook policy is valuable in itself. It can help align what are often described as the "quality" components of education—that is, the curriculum, textbooks, and assessment systems—in a golden triangle that lies at the heart of what takes place in the classroom and the learning of students.

In spite of recent technological advances, the importance of textbooks has not diminished. A textbook (or learning and teaching materials) policy can help with difficult decisions about how to invest in new technology to support teaching and learning while retaining and upgrading traditional textbooks and learning materials. A continuously updated textbook policy can facilitate allocation of budgets to physical textbooks and digital materials; ensure coherence between curriculum, classroom processes, and learning objectives; and bring innovations to the teaching and learning process. A well-prepared textbook policy will help to strike the balance between physical and digital materials and gear the textbooks to support improvements in student learning. Well-designed textbooks help teachers and students to make progress on the learning ladder and to attain grade and subject-specific competency levels. Increasingly, interactive textbooks can help students to tailor learning to their own pace and style of learning.

Good textbooks contribute to improving quality and equity in education

A textbook is only as good as its contents. Research shows that a significant factor in improving learning outcomes, especially in primary and lower-secondary schools, is a focus on structured pedagogy, in which textbooks play a major role. Textbook policies should provide a framework to support good pedagogy.

Most Asian countries that have performed well in international education assessments in the past 20 years have made changes to their textbook policies during this period. While it is not possible

to separate cause from effect, there is a clear correlation between textbook policy, classroom pedagogy, and educational outcomes. It is not surprising that some of the highest-achieving educational systems—such as Finland, Shanghai, and Singapore—have not only set the highest standards for their teaching cadres, but also have some of the most widely admired textbooks.

Textbooks provide an axis for coordinating inputs to improved learning outcomes. They reach all corners of a country and find their way into schools and into the hands of teachers, principals, students, and parents. Textbooks can also guide other critical inputs in education such as pre-service teacher education and in-service teacher training, school supervision, and student assessment. The content of the textbook, developed in an appropriate way, can also guide and stimulate good pedagogy in the classroom to make the learning process more interactive and fruitful. On the other hand, poorly written textbooks can reinforce rote-learning. Good textbooks need to avoid being too advanced, too overloaded, and too little focused on pedagogy. By supporting both teacher and student in the teaching and learning process, the textbook can be a guidepost to growing educational attainments.

High-quality textbooks can also help to enhance equity in learning in poorly resourced school environments. Lack of teacher capacities can be compensated through very well-prepared textbooks accompanied by teacher guides and pedagogical tools. Good textbook content and supportive materials can help struggling students to reduce the learning gap.

The private sector is an important stakeholder

In many countries, ownership of textbook development, publishing, and sometimes printing are tightly controlled by the government. This holds true particularly in textbook development and writing. Textbooks are also often directly linked to tests and assessments. Textbook policies that have evolved in educationally high-achieving Asian nations have sought to break the link between textbooks and exams by introducing multiple-textbook systems. Such policies depend on a thriving publishing sector. In most high-performing Asian education systems, commercial publishers play an important role, even though that role may be tightly regulated as in the case of People's Republic of China and Viet Nam's emerging textbook policies.

High-quality government textbook publishing is generally located within countries with a successful commercial publishing sector, in a mixed economy format, such as in Japan, the Republic of Korea (ROK), and Singapore. Private sector knowledge and skills impact on government textbook publishing capacity. In such countries, the textbooks retained for development by government tend to be those with high-priority social content and/or early grade mother tongue and math, in which government wishes to follow a particular philosophy and pedagogy principles. In the ROK, primary schools are seen as needing more direct guidance through textbooks than post-primary schools.

The transition from government to devolved and private textbook publishing is never smooth. It depends on open engagement between the government and publishers and requires long-term commitment. Governments that subcontract a part of the process only (such as the writing, publishing, or printing) usually see no appreciable impact on teaching and learning. For example, several countries in Central Asia hold competitions for textbook writers to develop manuscripts, which differ little from manuscripts written by the Ministry of Education (MOE).

The days of government textbook printing (as distinct from publishing) are now in the past. Governments, often with advice from development partners, no longer invest in equipment for textbook printing.

Digital materials are a supplement and not a substitute for good textbooks

It is erroneous to consider that digital solutions by themselves will address long-standing, systemic problems in the quality of education and learning. It is also a fallacy that substituting the textbook with digital materials will save money for education policymakers or solve distribution challenges. Digital resources do not automatically transform teaching and learning unless they are backed by high-quality content linked to learning objectives and there is a wider strategy for such learning transformation, which in turn depends on system change involving tens of thousands of teachers and education officials.

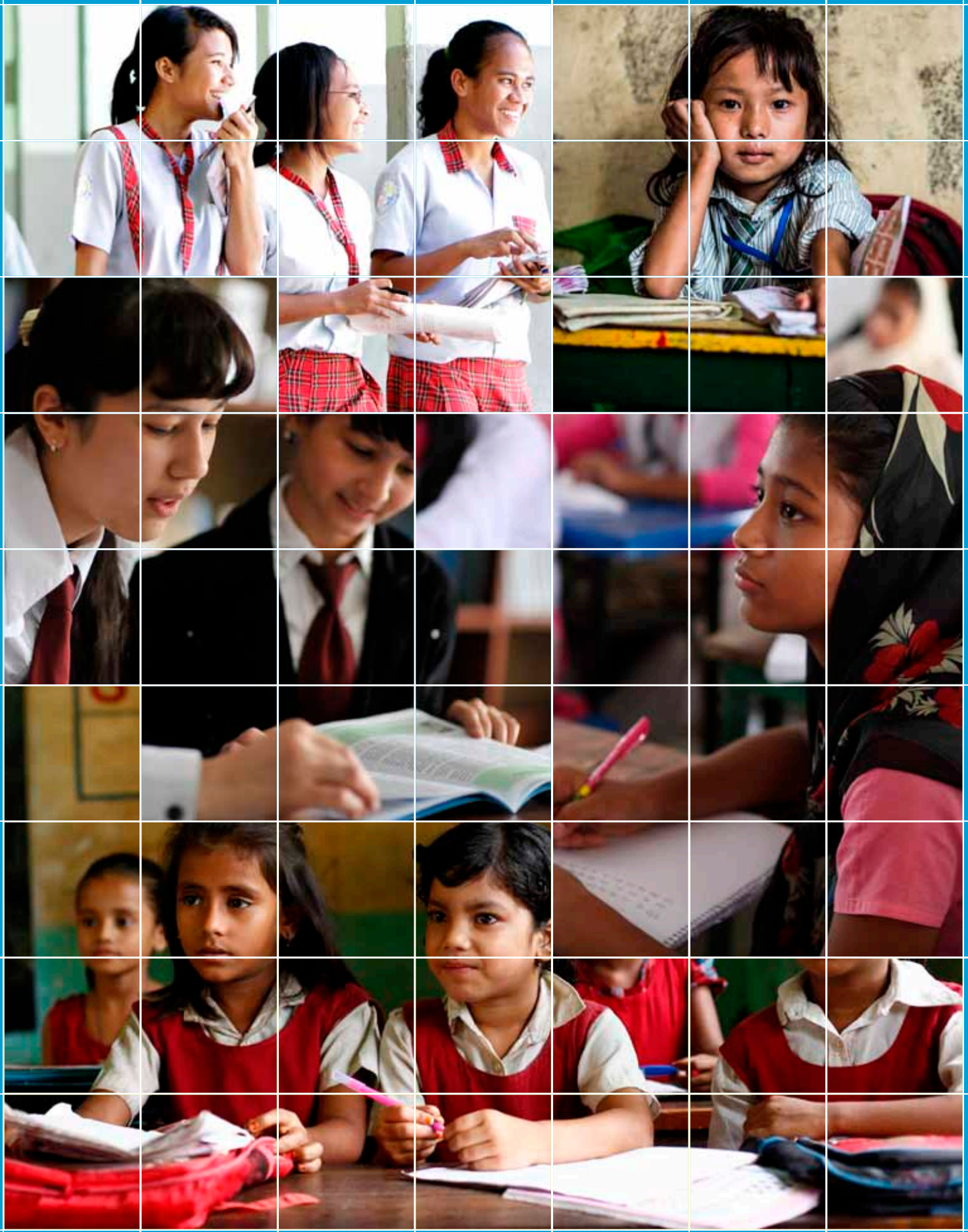
Investment in digital resources tends to reinforce (or amplify) the existing dynamics. The impact of technology can only be as effective as the pedagogy it serves.

A well-designed textbook policy can ensure that costly digital resources meet the necessary criteria for learning. Even the ROK, which not long ago proclaimed its commitment to a fully digitized classroom, free of printed textbooks, has now recognized the need for caution.

Expert teachers have a major role in writing and evaluating textbooks

It is critical to include experienced teachers in the writing, evaluation, and selection of textbooks, especially for primary schools, where good pedagogy, together with good textbooks, plays a large part in learning outcomes for students. The process of selecting suitable teachers is vital. All high-achieving education systems ensure that teachers' voices are included at critical moments in the textbook policy chain. Teachers should be more than notionally represented in this chain, to ensure that content, language, and pedagogy are appropriate and that the tools placed in teachers' hands are fit for purpose. It is notable that in many lower-income countries the language and content of textbooks (and curricula too) are frequently mismatched with students' actual levels, thereby turning learning, at best, into an act of memorization.

Each section of this report addresses a link in the chain that makes up a well-designed textbook policy. Sections are followed by the main implications. The report makes a key overarching recommendation—that textbook policymakers consider the role of textbooks in a comprehensive quality learning framework: textbooks, curriculum, teacher training, pedagogy, supervision, and student assessment should all be well integrated with each other in the policy chain. Textbook policy frameworks that are comprehensive and integrated can make a real difference.



Textbooks remain highly relevant despite the pervasiveness of ICT and digital learning resources. Photos show students from Bangladesh, Nepal, Timor-Leste, and Uzbekistan (photos from ADB).

1

INTRODUCTION

Textbook policies influence learning outcomes. Students attend class in a coeducation system at the Engineering University School and College in Dhaka (photo by Abir Abdullah).

This comparative report provides an overview of the textbook chain, starting with its origins in the curriculum, and suggests ways in which policymakers can make improvements at every point in the chain. With evidence from a range of countries, mainly in Asia, the report is based on personal experience in textbook policy development; on interviews with academics and professionals, including publishers; and on published research and reports from development agencies, academic journals, as well as other publications. It is intended as a resource for policymakers and as a reference and benchmark for systems in the process of change.

The report begins by analyzing the role that textbooks play in teaching and learning. Despite decades of global research and analysis into the importance of textbooks (Appendix 1), researchers are only now beginning to focus on the actual impact on learning outcomes. In particular, the interrelationships between textbook content and educational outcomes in several Asian countries have been studied, especially Singapore's mathematics and science textbooks, Japan's focus on problem-solving in mathematics textbooks, and Shanghai's approach in its mathematics textbooks. The global profile of these textbooks, in particular with regard to the teaching of mathematics, is the result of a growing global conversation about pedagogy (Clement 2017, Vasagar 2016, Camden 2017).

> "This report examines qualitative and quantitative issues on the role that textbooks play in teaching and learning."

In contrast to this focus on pedagogy and the quality of teaching and learning, the focus in many lower-income countries, for several decades, has been largely on providing adequate and timely *quantities* of textbooks: a well-written textbook has little value if it does not reach the target users. This report therefore addresses both qualitative and quantitative issues and attempts to identify common factors for success.

Textbook policies, whether or not they are published in an official document, should set out the criteria for high-quality textbooks within a high-quality education system—based on good theory, practice, and evidence of the kind of teaching and learning that policymakers wish to promote.

The report does not assume that all countries can or should follow a uniform process. It suggests, however, that while there are clear differences regarding the role of the central or local government in the financing, development, and distribution of textbooks, and in terms of the role of the private sector (and of parents), it is possible to identify patterns and trends in the development of capacity and expertise within each subsector that can help to inform policymaking across the continent.

Although the report focuses on textbooks, which are the priority for governments and teachers and which represent the greatest item of expenditure on teaching and learning materials, it also includes other teaching and learning materials, including digital resources (Appendix 2). Since textbooks are the crux of the matter both for pedagogy and for the relationships between central and local authority (including schools), as well as between government and the private sector, it is suggested that once an effective *textbook* policy has been established, other teaching and learning materials—as long as budgets are available—will fall into place. For this reason, the report refers throughout to "textbook policy" rather than "teaching and learning materials policy".

The report does not address the complex issues of textbooks for students with disabilities.

2

GETTING THE POLICY RATIONALE RIGHT

The continuing need for high-quality textbooks and digital learning tools and systems calls for more intensive efforts and investment. Photo shows President Kuroda visiting a village in the Lao People's Democratic Republic (photo by ADB).

Official textbook policy documents may be general or highly specific, the latter covering of all aspects of the textbook chain—from definitions of textbook quality to guidelines for the storage and reuse of textbooks in schools. (For examples of detailed polices see Education Bureau, Hong Kong, China. n.d.; Ministry of Education, Republic of Korea 2015.) In higher-performing educational systems, textbook policies regulate the relationship between publishers and stakeholders in an often complex system. In lower-income countries they also act as a framework for support by development partners. Policy statements by highly centralized textbook publishing systems, such as the countries of the Indian subcontinent where governments see less need to define the roles of their own personnel, are usually very short and form only a part of general educational policy statements.

> "It is unhelpful to see digital textbooks as only technology change, rather than maximizing new opportunities in content and pedagogy."

A comprehensive textbook policy will include all elements of the textbook chain, linking general education policy; curriculum framework; subject syllabuses; and the development, financing, production, distribution, management, and use of textbooks. It should define these elements and show how they connect within a coherent strategy. It should ensure that the agencies, organizations, departments, and private companies are aware of their roles within this chain and how their own roles affect those of others.

Some observers may question whether textbook policies (and textbooks themselves) are still necessary in the first quarter of the 21st century, when digital technology is so pervasive. However, a textbook is an approach as well as a medium. Digital textbooks may support a similar pedagogical approach to teaching and learning as printed textbooks, while at the same time presenting new opportunities as well as new challenges. It can be unhelpful to see the advent of digital textbooks as essentially a matter of *technology change* rather than maximizing new opportunities in *content and pedagogy*. As with printed versions, digital textbooks

need to be paid for and distributed, and their content in some cases needs to be approved by government. In this context, textbook policies should illuminate the way for policymakers who are confronted with more variables than ever.

In order to provide a framework for the role of textbooks in the wider education system, policymakers will also benefit from considering the explicit functions of the textbooks, as stated in official policy statements, as well as their indirect, implicit functions.

Explicit Functions

The explicit functions of textbooks for government schools vary according to the user's perspective and can be seen as three aspects:

- Planning, pedagogy, and the assessment of knowledge and skills: the *teacher's* perspective
  - The textbook (usually supported by a teacher's guide) can valuably support the teacher in providing accurate content as well as promoting creativity, problem solving, and critical thinking.

- Learning and reference: the *student's* perspective
  - Engaging the learners' interest as well as providing a resource for reference and self-study.

- Cultural and value-based: the *policymaker's* perspective
  - Since the textbook is a high-profile public policy document in the hands of all schools and families, it can become a major political and social issue. Ang Wai Hoong, former director of Singapore's Curriculum Development Institute, described it as follows: "Singapore has also used textbooks not only to transmit knowledge and skills but also impart values. Textbooks can influence and develop the thinking and values of students and hence impact their world view and attitudes. Curriculum materials are thus of great importance as they can impact social cohesion and national development within a country" (Hoong 2006).

A textbook policy should achieve a balance between these explicit functions in order to support effective teaching, improve learning outcomes, and achieve national priorities (see Dundar et al. 2014). In many systems, these explicit functions are expressed in terms of criteria that are used for the evaluation and approval of textbook content (see section 10).

Implicit Functions

The implicit functions of textbooks are not set out in the body of textbook policies but are critical to considerations of their role within the education system:

- Government's demonstration of its commitment to providing high-quality education (see Hunt 2008, p. 38):
  - This may extend to the government's gratis provision of textbooks for some or all students in government schools.

- The "seriousness" of the subject:
  - It is often assumed that each subject should be provided with a textbook. In some lower- to middle-income countries, despite textbooks representing a large part of the budget, education ministries provide a textbook even for nonacademic subjects (e.g., art or music in Mongolia; physical education in Timor-Leste). By contrast, in Hong Kong, China, "There are … some subjects for which the Education Bureau does not require textbooks to be submitted for review … because they are better learned through primary source materials, or because the content they cover is far too extensive or because there is the frequent need for updates in content in order to keep pace with the rapid developments in the field" (Education Bureau of Hong Kong, China 2009).

- The accountability of the teacher:
  - Principals and supervisors may check teachers' progress through textbooks as a way of assessing their performance.

Implications

- All aspects of a textbook policy should be designed to lead to improved learning outcomes, as well as ensuring that adequate quantities of textbooks and other teaching and learning materials are delivered at an appropriate cost and in a timely manner.
- The policy can provide a valuable framework for all actors in an increasingly complex system of textbook development and provision. It should describe the functions of each stakeholder and set standards for high quality at each stage.
- Updating textbook policies to include digital resources can be a valuable way for policymakers to reflect on and explain the rationale for their investments in digital teaching and learning.

3

GOOD TEXTBOOK POLICY SUPPORTS HIGH-QUALITY TEACHING AND LEARNING

ADB has ongoing or planned programs relating to school education in the Federated States of Micronesia. Photo was taken in Chuuk State, one of the four states of the Federated States of Micronesia (photo by ADB).

The simple presence of textbooks is not enough to make a difference to learning outcomes (Wiliam 2017, p. 13). Their effectiveness lies in their content and pedagogy. The pedagogy of the textbooks can also have an important impact on the design of initial teacher education and continuous professional development courses for teachers.

In classrooms around the world, textbooks structure teaching and learning. This is a characteristic of lower-income as well as many higher-income countries: for example, in Finland, printed textbooks are widely used as the main resources in teaching and planning, especially in basic education level where it is not uncommon for teachers to rely on textbooks rather than on the official curriculum (Pudas 2013). In lower-income countries, the textbook and its accompanying teacher's guide may represent the complete syllabus: the textbook may be the *only* learning material that children are exposed to, even in their early grade reading lessons. In such environments, where the textbook has the status of an official document, it may unwittingly be seen as "procedural", that is, as a set of written statements *to be memorized*, which therefore fails to promote higher-order thinking (Dundar et al. 2014).

A well-planned textbook is important not only for its curriculum relevance and accuracy, but also for its pedagogy, particularly in the primary cycle. Research into the elements of pedagogy that make a difference in lower- and middle-income countries shows that a focus on structuring pedagogy has been found to be one of the most important factors in improving learning (Snilstveit et al. 2016, p. 2). Structured pedagogy gives coherence to learning through careful lesson planning, links to previous lessons, learning objectives, and formative assessment. It encourages teachers to make use of a range of strategies including talking to the whole class from the front; question and answer with the whole class; individual exercises or reading; and group discussion and practical activities depending on their context, learners' needs, and subject matter. In contrast, low-achieving education systems often demonstrate an "incoherence with respect to learning" (Pritchett 2015).

A textbook based on effective pedagogy is not a constraint on a teacher's professionalism; it is a valuable teaching tool. However, structured pedagogy does not mean scripted lessons. Textbooks should support teachers without

attempting to control what they do. Teachers need to be able to respond and adapt to the particular conditions of their learning environments and their learners (Cohen and Ball 1990).

Textbooks save teachers time and effort in preparation. They provide structured learning experiences that include both teacher-directed and student-directed learning in order to achieve a balance between rote-learning and deeper learning, and allow for the monitoring and supporting of individual students. John Hattie's meta-analysis of effective teaching points to the importance of teachers understanding their impact as an ongoing process: "The most powerful single influence enhancing achievement is feedback" (Hattie 2009, p 12). Assessment as a part of day-to-day learning is different from formal examinations. There is increasing evidence for the value of formative assessment, or "assessment for learning" (Wiliam 2013). Assessment for learning is not primarily about collecting data on students' performance. Half a century ago, Benjamin Bloom observed, "We see much more effective use of formative evaluation if it is separated from the grading process and used primarily as an aid to teaching" (Bloom 1969, p. 48). Formative assessment takes place *during* learning, not *after*. The planned learning experiences should target the competencies, provide appropriate cognitive challenge, and allow teachers an opportunity to monitor, observe, and support students *at their own level*, which is vital for ensuring learning (Ministry of Education, Singapore 2008, pp. 120–124).

"There is much more effective use of formative evaluation if it is separated from the grading process and used primarily as an aid to teaching."

Teachers' guides are often neglected by policymakers, as well as—unfortunately—by teachers. While there are several possible reasons for teachers to neglect teachers' guides, one reason is the poor quality of many teachers' guides, which consist of repetitive lists of bullet points. A recent comprehensive meta-review found that structured teachers' guides improve learning outcomes, but overly scripted teachers' guides are somewhat less effective than simplified teachers' guides that give specific guidance to the teacher but are not written word for word for each lesson in the guide (Piper et al. 2018).

Policymakers should ensure that teachers' voices are heard, when considering how textbooks can improve learning outcomes. Experienced teachers can be of great value to policymakers in defining how textbooks and teachers' guides can support planning, pedagogy, and assessment.

Implications

- The characteristics and functions of a high-quality textbook should be drafted by curriculum and subject specialists and reviewed by teacher-experts.
- Textbooks especially in the primary cycle can provide a structured pedagogy, as well as appropriate and accurate content. They should provide learning experiences that are appropriate to the knowledge and competencies being taught, in which students can engage from time to time in higher-level cognitive work, and in which teachers have time to monitor and support all students by means of assessment for learning.
- The pedagogy of the textbook, appropriate to subject and level, can help with the design of teacher education and teachers' continuous professional development courses.
- Teacher's guides should include
  - rationales for the topics being taught and for the methodology promoted, with clear links to the curriculum and syllabus;
  - an explanation of how each topic or unit links backward and forward so that the overall teaching plan is coherent and well sequenced; and
  - practical "teaching steps."

4

WRITING SYLLABUSES, PREPARING FOR TEXTBOOKS

Digital materials are a supplement, not a substitute, for good textbooks. Photo shows a student in national uniform from Tajikistan (photo by ADB).

The foundation of most high-quality textbooks is a coherent and well-organized curriculum framework that includes what students should learn and how it should be taught. The vision and pedagogical approach for each subject should be coherent and consistent throughout the subject syllabus. The links between the syllabus and the textbook specifications or evaluation criteria should be clear. Syllabuses from Hong Kong, China and Singapore show how such documents can be concise and coherent, and provide a clear framework for textbook writers and publishers (as well as a valuable reference for other departments, including teacher education and assessment).

Syllabuses should express a particular vision for learning in the discipline concerned. Syllabuses that consist largely of lists of items to be covered will lead to textbooks that consist of lists of statements and definitions.

The objectives of education policy, the design of curriculum or syllabus, and the content of textbooks must all be developmentally appropriate; that is, at the students' actual level of understanding. As Rukmini Banerji, director of the ASER Centre, which oversees India's annual Pratham report, says, "If our textbooks are too tough, our children will be left behind" (Kazmin 2015). Banerji adds that a result of the mismatch between student ability and curricular content is that teachers are demotivated; children are simply uninterested; parents do not see much value in schooling; and ultimately, attendance is sub-par (Akmal 2016). Textbooks that are overloaded in terms of concepts and language set teachers and students up for failure. Faced with an overloaded syllabus and textbooks written a in language that is too advanced for the student, teachers can only resort to teaching through rote learning.

Time is schools' most precious commodity, especially in low-resourced classrooms with double shifts, short lessons, and large numbers of students (Wang 2011, pp. 157–164). The little time that is available should not be sacrificed to overdemanding textbooks. Experienced teachers can help syllabus developers to ensure the content is at the appropriate level and is manageable within the time available, so that textbooks do not become overloaded (Pritchett and Beatty 2012). Consideration of time on task should allow enough time for the teacher to monitor and support students' learning (see section 3). Teachers' voices themselves are of critical importance. The Mahatma Gandhi Institute of Education and Peace study stated that "From drafting curricular frameworks and subject syllabi, to preparing textbooks and other instructional material,

curriculum development involves, or should involve, a wide range of experts and practitioners. Crucially, these include teachers themselves. The role of teachers in shaping the curriculum that they teach is suppressed or denied in many education systems." (UNESCO and MGIEP 2017, p. 5).

Syllabus accretion, in which the syllabus expands over the years to include each new policy concern, often results in topic overload as well as a lack of coherence. One of the characteristics of Singapore's math textbooks is a deep treatment of relatively few topics. The textbooks provide a variety of approaches and adequate time for learning.

Singapore's primary math syllabus includes a good foundation for textbook writers to build on, including a description of the envisaged activities. The textbooks are consequently acknowledged as instrumental in the country's academic achievements. According to Saranavan Gopinathan of the Head Foundation, Singapore (personal communication): "The key to high quality textbooks in the Singapore system is the careful attention paid to curriculum/syllabus design, which in turn is well tuned to the education policy objectives." Similarly, the PRC's math methodology—Model–Strategy–Application—introduced in the late 1990s, has demonstrated significantly different results between students using the new textbooks and those using the old (Wu 2012, pp. 310–323).

In Hong Kong, China, syllabuses include exemplars of classroom practice, with guides to planning, learning activities, and their intended impacts on learning (Education and Manpower Bureau 2004). These exemplars may also indicate to commercial textbook writers and publishers the amount of time on task to be allowed for each learning experience.

However, policymakers should also reflect on the implicit functions of the textbook: not every subject is best served by a textbook. On the other hand, some subjects, such as the teaching of mother tongue in primary schools, are better served by more than just a textbook: a single textbook is not adequate to support early grade reading and writing development. (See also section 15 on supplementary learning materials.)

Implications

- The textbook is the main expression of the subject syllabus (i.e., it is the "taught curriculum"):
  - The syllabus should set out the subject approach clearly and persuasively and explain how the syllabus supports the overall curriculum vision.
  - The syllabus should recognize that textbooks need to address challenging topics in a variety of ways, with enough time for teachers to develop students' understanding.
  - The syllabus should describe how teachers can use textbooks *alongside other materials*, especially for the mother tongue.
  - Syllabuses that consist largely of lists of topics may lead to textbooks based on lists of definitions to be memorized.
- The syllabus and textbooks should be at an appropriate cognitive level and allow enough time for teachers to treat topics in sufficient depth (the language level also needs to be at an appropriate level; see section 6).
- Not all subjects are best served by a single textbook. Teacher's resources and other learning materials may be necessary for some subjects, especially for the mother tongue.

5

TEXTBOOKS AND EXAMINATIONS: THE CHICKEN AND THE EGG

In single-textbook systems, greater investment in continuous professional development for teachers will be required. Photo shows students being coached by their teacher (photo by ADB).

As Dundar et al. (2014, p. 304) noted, one of the keys to ensuring that terminal examinations are fair and equitable is an "alignment between what should be measured (e.g., student comprehension of the national curriculum) and what the examination actually measures (e.g., textbook knowledge)." Unfortunately, in some countries, textbooks include no higher-level learning experiences and consequently lead only to examinations that simply test recall of passages of text and specific textbook exercises. Syllabus and textbook writers can help to expand the range of knowledge and competencies that are tested by ensuring that textbooks include activities and exercises that do not depend only on a single correct answer. This significant change of approach requires collaboration and alignment between curriculum, textbook policy, and examination policies, so that no one group can place the blame for narrow question types on any other group.

Several countries have attempted to tackle the systemic problem of relying on memorization of facts to pass high-stakes examinations. This tradition is usually more pronounced in countries where a single textbook is used by all students and where teachers have little or no training in other pedagogies. The following scenario from Viet Nam—which the Ministry of Education and Training (MOET) is now seeking to change by means of its current policy development—describes the implications of the former, single-textbook system:

> The examination questions are based on an examination framework for each subject that tends to follow the relevant textbook in use in schools rather than the official curriculum (Bodewig and Badiani-Magnusson 2014).

The rationale for a multiple-textbook policy, in which several textbooks are approved for each subject and from which local authorities or schools select their preferred textbook, may be described in terms of "breaking the link" between the textbook and the exam. By approving more than one textbook, the MOE obliges schools and teachers to refer to the curriculum itself, not only the textbook. When Shanghai pioneered the People's Republic of China's (PRC) earliest multiple-textbook system, it was designed to overcome examination-oriented school practices so as to build quality-oriented education (Cui and Zhu 2014).

Similarly, when Taipei,China made the transition to a multiple-textbook policy, the MOE stated that for the past several decades, students in primary and secondary education had been required to use only the textbooks published

by the National Institute for Compilation and Translation, so students could do well in their joint senior high school entrance exams simply by memorizing the contents of the textbooks. Some students would even refuse material taught by teachers outside the bounds of these textbooks on the grounds that it would not appear in exams set by an examination committee (Ministry of Education, Taipei,China). However, an unforeseen result of the policy was a further boost to "cram schools" because students worried they were not doing enough if they studied just one textbook. The cram schools were able to collate the key points from the different textbooks.

However, a multiple-textbook policy depends on an adequate educational publishing infrastructure and a large enough market to allow for publishers' economies of scale. It also depends on political will. (See section 9 for more discussion.)

Implications

- Syllabus writers, textbook writers, and test item writers can be guided by textbook policy to follow an approach in which syllabuses and textbooks include higher-order learning and not only fact-based content that encourages rote learning and memorization.
- Textbooks can include examples of regular revision and tests that include both lower- and higher-order learning.
- Multiple-textbook policies (see section 9) can break the link between textbook and examinations but are not appropriate for all countries (including for reasons of system scale).
- In centrally planned, single-textbook systems, greater investment in continuous professional development for teachers will be required in order to support broader curriculum and assessment strategies.

6

THE LANGUAGE OF LEARNING

Text is considered to be at an appropriate level when at least 90% of the vocabulary can be understood on first reading. Students brush up on their knowledge at a study group at the Madrasah Wak Tanjong (photo by ADB).

Both the cognitive and the language levels of textbooks can be barriers to learning. Textbooks written in language that is at too high level reinforce teachers' tendency to focus only on the most advanced students in the class, while other students resort to memorizing content that they do not understand. Indian education economist Karthik Muralidharan identifies three rules of thumb in struggling education systems, including that "textbooks are usually written by elites and only benefit the best students" (Mirchandani 2015). Textbooks written in a language that is too advanced send a signal to teachers and students alike that government policy is designed to fail most of its students (in other words, a further "implicit function").

In the early grades in particular, the language of textbooks should be appropriate to children's developmental level, gradually and carefully introducing subject-specific language. To achieve this, textbook writers should have personal experience of average (or even below-average) students' reading level, in terms of vocabulary as well as syntax and sentence length. Grade 1 textbooks can be particularly problematic: the Shanghai curriculum is one of the few to explicitly state that *only by the end of grade 2* will children be able to "understand textbook content; express opinion after reading passages" (Liang et al. 2016, p. 22).

Whatever the subject of the textbook, all textbook writers have a role in developing students' reading knowledge and skills. Among early reading specialists, a text is considered to be at an appropriate level when at least 90% of the vocabulary can be understood at the first reading. The threshold for textbooks—where the information is often more densely written than in a supplementary reading book—should be at the same level or even higher. Textbook writers can make use of teachers' knowledge of typical reading levels in order to estimate the amount of new vocabulary they expect students to acquire in each lesson.

It is beyond the scope of this report to explore wider issues of language policy. However, textbook policies are one of the major considerations in the development of language policy, especially when supporting children from minority language communities. Evidence suggests that the most effective language education policy involves the use of a child's first or home language in the early years of schooling, alongside the introduction of a second language, both as subject and, later, as a parallel medium of instruction (UNESCO 2016).

The issue of selecting which languages to support by means of textbook provision is critical, and should be based not only on the size of the language community but also on the ability of the community to contribute to developing a language framework that textbook writers can operate within (including standardized terminology for "noncultural" subjects, such as mathematics).

In spite of recommendations by many language specialists, minority language policies—for pragmatic reasons—are usually applied only to lower primary grades (followed by an "early exit" to the national or majority language). While the mother tongue syllabus teaches foundational literacy skills, students at the same time begin to learn oral skills in the national language, in preparation for transferring their newly acquired reading and writing skills from their mother tongue to the national language (especially where the script is the same).

Once a minority language policy has been adopted and the number of approved languages agreed, it will be necessary to enable each school to select the textbooks it needs. This in turn requires flexibility in textbook distribution (see section 13).

A common challenge in providing textbooks and resources for minority language communities is the presence of several home languages in the same classroom, which is beyond the scope of this report. (However, see Erling et al. 2017.)

Implications

- Textbook language whether for teaching literacy or other subjects should be at an appropriate level (whether in mother tongue or second language):
  - Language register should be as close as possible to students' home language.
  - Instructions to exercises and activities should be short, with shorter sentences for the lower grades.
  - The introduction of subject-specific language should be carefully controlled to support the target competencies, and should conform to the guidelines for syllabus writers in section 4.
  - The readability of the textbook should be included in the criteria for evaluation.
- Policies regarding textbooks for minority languages:
  - Should specify arrangements between government and the minority languages regarding the actual number of language-speakers (both teachers and students) to be provided with textbooks.
  - Should integrate with other resource requirements, particularly teacher deployment and training.
  - Usually require decentralized textbook ordering system, to ensure each school receives textbooks in the correct language (see section 13).
- Textbook policies in countries with emerging minority language orthographies need to consider not only the consequences for textbooks for mother tongue but also other subjects; for example, mathematics, where the subject-specific language may not yet be well established.

7

TEXTBOOK PLANNING, WRITING, AND DEVELOPMENT

Singapore's textbooks particularly for math have become widely used in many countries. Photo shows Singaporean students solving a math problem (photo by ADB).

Textbooks in higher-achieving education systems are usually written by teams of writers who combine academic authority and classroom experience. Teachers with experience in the target subject and cycle should be included in writing teams, ensuring that concepts are presented in a way that is appropriate to students, with appropriate language and pedagogy. This is particularly important for primary school textbooks. In Japan and the ROK, teachers have traditionally led elementary school textbook writing teams (Tani et al. 1993, p. 75; Usiskin and Willmore 2008, pp. 99–101). Textbooks that are developed purely by curriculum specialists are less likely to be effective.

In many high-performing Asian education systems, textbook writers work in a highly collaborative way, while in other countries some writers in a team may have only a notional role, their presence signifying that the appropriate institutions are represented in the writing team. As a textbook writer in Japan described it, "The reasons for poor textbook quality are: (a) lack of conceptual and methodological expertise among the authors; (b) lack of a proper textbook development process among the textbooks' producers; (c) absence of good editors, reviewers and language consultants; and (d) superficial attention to teachers' and students' participations and voices" (Ahmed 2013, p. 258).

Large teams of writers require good coordination. (For reasons of cost, large teams may be less common in purely commercial environments, where publishers seek to reduce costs.) The risks of not providing such coordination were highlighted in a recent World Bank project appraisal document for Viet Nam: "MOET is accustomed to having a large number of curriculum and textbook developers working independently of each other. This modus operandi led to incoherence

> "Textbooks developed purely by curriculum specialists are less likely to be effective. Textbook writing teams should include teachers with experience in the subject."

and duplication of content in the curriculum" (World Bank 2015, p. 16). The key to good management is an experienced series editor, or editor-in-chief, who is able to provide overall guidance and quality assurance.

Textbooks benefit from being reviewed and also trialed before being approved and implemented. Viet Nam trialed its new English textbooks (co-written by MOET with publishers Macmillan and Pearson) for 1–2 years each (Van 2015, pp. 1–15). Cambodia's new mother tongue textbooks were also piloted for 2 years (UNESCO 2015). Trials are easier when textbooks are government-authored, but in decentralized systems government can also require commercial publishers to trial their textbooks before submitting them for approval.

Without a strong series editor, textbook writers may instinctively take a previous textbook as their starting point, even where the curriculum has changed. This will dilute the impact of the new curriculum, with the result that little gets changed in the textbook or in the classroom.

Implications

- The selection of writers is critical. Textbook writing teams should include expert teachers, with 5–10 years of experience in the target subject and cycle, working alongside academic content specialists. All writers should be selected for the contribution they will make to the work, not because of the institution they represent.
- Writing teams require a good editor-in-chief, who is not only the academic authority but also the spokesperson for the team. The editor should ensure that the writers use the curriculum as their reference rather than the previous textbook. Textbook writers for a new curriculum should not rely on simple "tweaking" of the textbook from the previous curriculum.
- The introduction of a new curriculum and new textbooks, whether developed centrally or by commercial publishers, should allow time for proper review and revision of manuscripts as well as trialing of sample textbook materials.

8 GOVERNMENT AND THE PRIVATE SECTOR IN TEXTBOOK DEVELOPMENT AND DELIVERY

The issue of selecting which languages to support by means of textbook provision is critical. One of the biggest printing houses in Uzbekistan produces textbooks in seven languages (photo by ADB).

In recent years, there has been a movement among high-performing education systems and emerging economies of Asia toward a liberalized, multiple-textbook policy, in which commercial publishers play a large part. The rationale for this trend is educational. In the PRC, where all students throughout the country used the same textbook until the Shanghai curriculum reforms of the late 1980s, the relationship between curriculum content and textbooks evolved from a unified national textbook that was "difficult, complicated, obscure, and outdated" toward a "curriculum context connected with real-life interests and experiences of students and modern society" and a "new textbook system of one standard and multiple versions" (Qiquan and Liya 2013, p. 20). Despite this, some of the continent's most populous countries continue to publish textbooks centrally and probably will do so for years to come (Box 1).

While textbook policy inevitably reflects political environments, there is no natural link between political systems that describe themselves as liberal and textbook policies that can be described as liberalized. Furthermore, while it may be possible to position countries on a scale according to their degree of centralization or

Box 1: Centralized Systems

The most centralized textbook systems in Asia and the Pacific are found in Central and South Asia. In the former subregion, this is a legacy of the former Soviet Union system, while in the Indian subcontinent it reflects systems that have remained in place since the colonial era.

Bangladesh, India, Nepal, and Sri Lanka all have similar systems in which textbooks are free of charge and cheaply manufactured. In Bangladesh and India, the textbooks are for single-use only. (Outside Asia, many countries of the Arab World also follow policies of low-cost, low-specification textbooks, which are reprinted each year.)

However, it is also a feature of countries in the Indian subcontinent that many schools lie outside the state sector and therefore there is also a viable, commercial educational publishing sector. Total private school enrollment in grades 1–12 in India is estimated at approximately 35%. Private schools in India and many other countries study in English, but the curriculum may be same, for example in Tamil Nadu. In Pakistan, private sector enrollments represent over 40% of the total.

Source: Asian Development Bank.

▲ **South Asia has one of the most centralized textbook systems in Asia and the Pacific.** Students attend class in a coeducation system in Dhaka (photo by Abir Abdullah).

liberalization (Box 2), there are many examples of mixed models in terms of textbook policy (Box 3), and there is no single direction of travel. There are also several examples, in Asia, Europe, and sub-Saharan Africa, of countries that are currently seeking to recentralize some or all of their government textbook publishing (Abrams 2016, Sigai 2017, International Publishers Association 2016).

The impact of a competitive, multiple-textbook market in which the customer is the driving force is undeniable from the perspective of continuous improvements in textbook content. Textbook authors in Hong Kong, China, for example, are often asked by their publishers to study examples of the most successful textbooks in the market. In order to be successful, publishers and authors must continuously seek to improve.

Supplying government school textbooks can have great benefits for the development of a national publishing industry, which in turn can have economic and social benefits for the book sector in general and for wider literacy. In those lower- to middle-income countries where textbooks are provided by the private sector, textbooks can represent over 90% of the total book market (Read 2015, p. 127).

Box 2: The Transition to Liberalization

Many countries of East and Southeast Asia have transitioned to—or are intending to transition to—a devolved textbook approval system in which commercial publishers must satisfy criteria set by the Ministry of Education (MOE) and compete to promote their approved textbooks.

Japan made the transition to a devolved system generations ago, while **Viet Nam** is currently in the process of making such a transition.

In **Malaysia**, prior to the 1970s, all textbooks were imported. From the 1970s, manuscripts were developed by the MOE (and the textbooks for secondary schools were published by multinational publishers). Since the late 1980s, the MOE has announced open tenders in which a single publisher is awarded the contract for each textbook series.

▲ **Malaysia's textbook policy is highly centralized with little autonomy for schools.** Photo shows a primary school in Johor Bahru (photo by ADB).

For some economies, the devolution of textbook policy is a political statement. In **Taipei,China**, where the centralized textbook system was abolished for primary schools in 1996 and for postprimary schools in 1999, the textbook policy extolls the merits of a liberalized textbook system: "All the liberal and democratic countries in the world are open in the selection of textbooks."[a]

Statements by the World Bank and the Organisation for Economic Co-operation and Development concur with the above: "Most countries whose students perform well on international tests accordingly confer substantial autonomy to local authorities and schools."[b]

[a] Ministry of Education, Taipei,China. Education in [Taipei,China], 2010/11. Taipei City.
[b] World Bank. 2013. Malaysia Economic Monitor: High-Performing Education. Bangkok. p. 67.
Source: Asian Development Bank.

Box 3: The Mixed Model

Some high-performing Asian education systems have adopted a mixed approach, in which the Ministry of Education (MOE) has retained some responsibility for textbook publishing in subjects where government perceives a national interest.

In the **Republic of Korea (ROK)**, textbook policy began to be liberalized in the 1990s: postprimary schools may now choose from textbooks that have been "authorized" by the MOE and for which schools can use their textbook funding; or "approved" textbooks, for which a school must find its own funds. The content for core subject textbooks (apart from English) for primary grades in the ROK continues to be developed by the MOE, and the manuscripts are contracted out to publishers for editing, design, production, and delivery. It is believed that primary schools require more guidance from a government-published textbook than postprimary schools.

▲ **In Singapore, the Ministry of Education publishes textbooks for languages (Chinese, Malay, or Tamil).** Photo shows students of Madrasah Wak Tanjong learning basic Arabic language skills (photo by ADB).

Taipei,China's textbook policy states that the MOE may compile textbooks "when necessary". In **Singapore**, the MOE publishes the textbooks for languages (Chinese, Malay, or Tamil), as well as for ethics.

Such mixed approaches may lead to tensions between government publishing and the private sector. Often it is the government that gives way. For example, following public protest led by students in 2012, the Education Bureau in Hong Kong, China, decided to withdraw their proposed National Moral Education textbooks.

In 2015, the ROK announced that in the future it would publish the post-primary history textbooks itself, in order "to establish a correct and balanced historical perspective based on objective facts and faithful to constitutional values."[a] Following public protests, the MOE relented and decided to publish its textbook alongside other commercial textbooks. Few schools opted for the government's history textbooks.[b]

[a] J. Jung-yoon and L. Se-young. 2015. After 42 Years, State History Textbooks are on the Way Back. *Hankyoreh*. 13 October 2015. http://english.hani.co.kr/arti/english_edition/e_national/712608.html.

[b] C. Sang-Hun. 2016. South Korea Scraps Park Geun-hye's Contentious Textbook Policy. *New York Times*. 27 December 2016. https://www.nytimes.com/2016/12/27/world/asia/south-korea-textbook-park-geun-hye.html?partner=rss&emc=rss.

Source: Asian Development Bank.

Over the past 20 years, **Singapore** has moved to a commercial, multiple-textbook system in order to "harness the expertise and creativity of the educational publishers, leading to a greater variety of interesting and stimulating instructional materials for selection" (quoted in Tomlinson 2013, p. 145). The development of Singapore's education publishing sector in this period is instructive and perhaps unique in demonstrating a successful transition to multiple commercial publishers by means of privatizing *the government's own textbook publishing department*. In 1996, the MOE closed the Curriculum Development Institute of Singapore, and any publisher could now submit primary textbooks for approval (secondary school textbooks had always been published commercially) (Kong et al. 2008). Since that decision, Singapore's textbooks particularly for math have become widely used in many countries (Tan 2016).

However, the MOE in Singapore has retained the publishing of some textbooks, such as mother tongue and those subjects that are related to national education and moral development (Chia 2014). It is worth noting that given the issues

surrounding history textbooks in the ROK and Japan, the Singapore MOE did not include history among the subjects it would continue to publish, although Singapore's latest social studies textbook has attracted some controversy on social media. In fact, the Singapore MOE has recently begun to explore strategies for reverting full responsibility for textbook publishing back to itself or doing without textbooks entirely. It is possible that the MOE does not see a textbook tendering system as suitable while it is attempting to introduce new ideas and overhaul again its overall pedagogical approach.

In **the PRC**, the People's Education Press (PEP) publishing house is directly under the auspices of the MOE. From 1950 to 2000, PEP was the sole producer of all textbooks for basic education. Despite the textbook policy reforms of 2001, books at primary and secondary level are still mostly supplied and delivered to schools by PEP. In fact, most publishers in the PRC are owned by state companies, although major international publishers have been able to form successful local publishing partnerships (Box 4).[1] The educational publishing industry is tightly regulated by the MOE and provincial education commissions and administrations, including foreign partner publishers, may not print trademarks on the covers of their copublished textbooks. International publishers operate under subsidiaries or representative offices, and collaborate with local publishers on co-editions of titles, or under joint ventures.

Box 4: Low-Cost Centralized Systems

Critics of devolved textbook policies argue that the profit motive leads to higher prices. In the **Indian subcontinent** and in **Viet Nam**, traditionally, hundreds of millions of textbooks have been efficiently supplied to schools every year at very low prices.

In **India**, the government and/or board textbooks are very low-priced. One example is the ninth grade English textbook, which costs 12 rupees (₹). A commercial publisher's English textbook for eighth grade would be in the range of ₹200–₹ 250 (international publisher communication to author).[a]

The average unit cost (including printing and delivery) per textbook in **Bangladesh**'s centralized system, in which the printers themselves deliver to local authority delivery points, is 30 taka (approximately $0.30).

In **Viet Nam**, textbooks have for many years been developed centrally by the Ministry of Education and supplied at an economic cost to all students across a large and diverse education sector. However, Viet Nam announced in its 2015 Decision Note a new "one curriculum, many textbooks" policy that is intended to be rolled out nationally in 2018–2019, having been piloted for 3 years.

▲ In Viet Nam's new policy, schools will be given the authority to select their preferred textbooks. Thai Nguyen Province, Viet Nam benefited from a secondary school education development project initiated by ADB (photo by Viet Tuan Tran for ADB).

[a] ₹12 = $0.15; ₹200–₹250 = $2.15–$2.65.
Source: T. Phong. 2016. VNEN Documents to be Developed into Official Textbooks. *Vietnamnet*. 12 May 2016. http://english.vietnamnet.vn/fms/education/156133/vnen-documents-to-be-developed-into-official-textbooks.html.

[1] Some titles copublished under these partnerships enjoy significant market share, for instance FLTRP and Macmillan's *New Standard English* (NSE), which extends from kindergarten to tertiary education and has sold around 420 million copies since its inception. The primary segment of NSE was first published in 2001 when English became compulsory at primary level.

The PRC's commitment to multiple textbooks is uncertain. Recently, because of rising "quality" concerns, the MOE has appointed experts to develop textbooks for Chinese, history, and politics (moral and ethical studies), which it nominated PEP to publish. According to one publisher, editions of these three subjects by other publishers will be phased out in the coming years. In this development, parallels can clearly be seen with the newly evolving, potentially recentralizing policy in Singapore.

In addition to rationales based on breaking the link between syllabus and exams, or bringing in new pedagogy, advocates of liberalization may also seek to address more logistical issues. Commercial publishers of approved textbooks are usually able to deliver large numbers of books to remote and distant locations. Within a well-designed framework prepared by the MOE, publishers can provide textbooks at affordable prices and with timely delivery. Even in populations as widely spread as Solomon Islands, for example, the books reach the schools on time, while in the comparable environment of Timor-Leste, the vehicles and personnel of the Direcao da Logistica, part of the MOE, are unemployed for most of the year and less able to deliver the services at the same level as Solomon Islands.

The transition from a centralized, one-textbook system to a multiple-textbook system can be problematic. Local capacity needs to be developed gradually to enable an emergent publishing sector to play its part. This takes time, which governments are not always able to provide. In the very first round of submissions in 2000, publishers in Singapore were given only one year to develop and submit completely new series of textbooks (Aziz 2003).

In several countries, in Asia and elsewhere, the devolution of textbook publishing to commercial publishers has indeed faced considerable challenges. The example of **Malaysia**, where a single commercially published textbook is approved per subject, suggests that contracting the publishing of textbooks out to the private sector does not in itself lead to improved educational outcomes. Malaysia's textbook policy, as well as other aspects of Malaysia's education system, is highly centralized with little autonomy for schools (see section 9).

In 2013, as a response to poor enforcement of a multiple-textbook policy, the Government of **Indonesia** brought all textbook publishing back under its own roof during the introduction of the new curriculum. Until a new law in 2005, schools in Indonesia had bought textbooks from publishers for re-sale to parents as part of their revenue-earning activities. When this was banned, schools started to organize book bazaars and invited publishers to sell books to students (Utomo et al. 2009, p. 7). The lack of a strict enforcement of using approved textbooks led to continuing collusion between schools and publishers, resulting in higher textbook prices. Under Indonesia's planned National Book System Law, publishers will again develop textbooks subject to evaluation by the MOE, with a choice of textbook for each subject. The MOE's own textbooks will compete for endorsement against books developed by third parties (Box 5).

Box 5: Public–Private Competition

Competition can take several forms. In **the People's Republic of China** model, no publisher is strictly privately owned. In other cases, the Ministry of Education publishes particular textbooks *in competition with* commercial publishers.

In **Viet Nam**, which intends to follow this model of competition, it remains to be seen how such competition will work in practice. In **Indonesia**'s new policy, books developed by the Ministry of Education will compete against books developed by third parties to win endorsement for use in schools (personal communication with the Asian Development Bank).

In **Bangladesh**, textbook publishing for grades 6–9 experienced a limited privatization initiative in 2004–2008, wherein the bureaucratic response to textbook privatization was mixed. Although the government supported the policy and moved forward with its adoption, it continued to allow the National Curriculum and Textbook Board to publish its own textbooks, which was ultimately an impediment to privatization.[a]

▲ **In Viet Nam, it remains to be seen whether a strong private sector will emerge from the new multiple-textbook system.** Under Viet Nam's former single-textbook system, examination questions tended to follow the relevant textbook used in schools, rather than the official curriculum (photo by Viet Tuan Tran).

[a] ADB. 2015. *Policy Reform in Bangladesh's Secondary Education (1993–2013): Tracing Causal Processes and Examining the Asian Development Bank's Contribution*. Manila. https://www.adb.org/sites/default/files/evaluation-document/177777/files/topical-ban-sec-educ.pdf.

Source: Asian Development Bank.

Implications

- Privatizing textbook publishing requires developing good policy and managing policy well:
  - Encourage the development of national publishing capacity and encourage new ideas from both inside and outside the country.
  - By taking gradual steps, government can test the water to assess and develop national commercial publishing capacity. It can also minimize the risks associated with textbook costs.
  - Policymakers may see publishing houses purely as businesses that lack educational expertise or awareness of national or social interests. However, several countries that have experienced the most criticisms of their textbooks in the media are countries with centralized systems.
- To successfully publish textbooks in a mixed model, such as, for example, the ROK and Singapore, the MOEs require in-house publishing skills and operations as good as those of the private sector.
- Very few MOEs in countries without a strong commercial educational publishing sector have managed to publish high-quality textbooks.

9

MULTIPLE-TEXTBOOK SYSTEMS: THE GREAT LEAP

Because of poor enforcement of a multiple-textbook policy, the Government of Indonesia brought all textbook publishing back under its own roof in 2013. Photo shows students attending an English class at the MAN Yogyakarta III School (photo by ADB).

In multiple-textbook systems, "users" have a choice of textbooks. The users may be the schools themselves, or local authority representatives of the schools. The Organisation for Economic Co-operation and Development identifies greater autonomy for schools, including a choice of textbooks, as being directly related to educational achievement (although, of course, *relation* does not mean *causation*):

> Results from [the Programme for International Student Assessment] suggest that school autonomy in defining curricula and assessments relates positively to the systems' overall performance .... For example, school systems that provide schools with greater discretion in making decisions regarding student assessment policies, the courses offered, the course content, and the textbooks used, tend to be school systems that perform at higher levels (OECD 2011, p. 42).

As described in section 5 above, multiple-textbook policies are also intended to break the link between textbooks and examinations, to ensure that teachers pay attention to the curriculum rather than simply "covering the textbook". A 2009 MOE report in Viet Nam found that many teachers were not paying attention to the curriculum but were dependent on textbooks to cover all the content. The "teacher dictates; students copy" method was common (Law and Miura 2015, p. 127). Multiple-textbook systems are also intended to benefit from the skills provided by commercial publishing companies and to provide for continuous, consumer-led improvements by means of competition.

Around the world, countries have implemented varying levels of autonomy in terms of textbook selection. Several Asian countries operate a policy in which textbooks are evaluated and approved by the MOE for selection by users. In contrast, in most European countries there is no prior approval: a school may use any textbook it wishes and government schools therefore operate exactly like private schools but with public funding. Market forces in lower-income Asian countries may not operate in the same way. For example, the chief executive officer of Pearson Education India comments, "When a textbook in physics reaches a teacher for evaluation and recommendation, there are 30-plus options on the table .... How can the teacher evaluate so many books and decide which is the best for his or her students? .... So, then, content is no more the king. It is price and relationship with teacher and school that sells the book" (Welbound, n.d.).

> “Under a multiple-textbook policy, parents and schools need to be aware that the textbook does not represent the content that will be examined at the end of the year or cycle.”

In most multiple-textbook systems, the school itself selects its textbooks. Exceptions include **Japan** (primary and middle schools), where the local school board consisting of supervisors, head teachers, classroom teachers and parents makes the selection on behalf of the local schools (Ministry of Foreign Affairs 2005a, Usiskin and Wilmore 2008) and **the PRC**, where the provincial education department or city government decide (Sargent 2011, pp. 47–72). The rationale for the PRC's textbook selection process appears to be to ensure coherence between in-service training, textbook pedagogy, and the assessment system. In **Viet Nam**'s new policy, schools will be given the authority to select their preferred textbooks and publishers will be required to provide training on the new textbooks. Postprimary schools in **the ROK** select from among textbooks authorized by the MOE. In **Thailand**, in theory, each school has the funds and the right to select textbooks itself but, in practice, according to one publisher, “the provincial Office of Basic Education Commission has considerable influence on decision making” (personal communication).

Implementing a successful multiple-textbook policy requires an understanding by all stakeholders—not only by policymakers—of the policy rationale and objectives. Several countries have experienced confusion after the introduction of a multiple-textbook policy. According to one observer (personal communication) in **Taipei,China**, professors who are responsible for designing examinations for the college entrance exam are expected to design their questions based on the contents of different versions of textbooks. If most questions of their examination sheet are found highly related to the content of a specific version, students and parents will question the impartiality of these professors or even the fairness of the examination itself. Most professors tend to adopt equal amounts of material from all major textbooks. Since this practice is well known to students and their teachers, it is not uncommon to find students from prestigious schools studying from more than one textbook, particularly in English and mathematics. Parents are also vital stakeholders in such a policy shift. Whether or not the textbooks are provided free of charge, parents as well as schools need to be aware that the textbook does not represent the content that will be examined at the end of the year or cycle.

In addition to a likely period of confusion during policy transition, critics of multiple-textbook systems argue that the evaluation process may not be robust enough to filter out low-quality textbooks, and that end users may not be able to

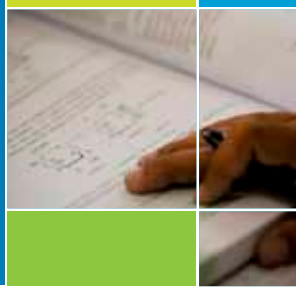
make the best choice. Such critics may also argue that the end users prefer to get on with the core activity of teaching and have their textbooks chosen for them. Experience in many countries shows that as long as the conditions are controlled and there is no undue influence on those making the choice, the role of the school and its teachers in the selection of textbooks is generally positive.

Implications

- Multiple-textbook systems can be a way of breaking the link between the textbook and the examination.
- Involving teachers in textbook selection can provide a valuable counterbalance to the overly academic tendencies of some textbook writers, although a system in which local authorities select on behalf of their schools can also have benefits in terms of teacher supervision and training.
- In countries transitioning to a multiple-textbook policy and where schools have the responsibility to select textbooks, the MOE should ensure that schools (and parents) understand the multiple-textbook principle, to avoid schools or students believing they need to buy copies of each textbook approved for each subject and grade.

10

ENSURING QUALITY: EVALUATION, APPROVAL, AND SELECTION



Initiatives in Indonesia suggest that the establishment of a reading culture in a large number of schools may be under way. Photo shows a Chemistry textbook to demonstrate how modern learning merges with tradition in Yogyakarta Madrasah (photo by ADB).

To some extent it is inevitable that newly developed systems take time to become strong enough to perform well, in which all stakeholders are able to play their part. As with any process that is subcontracted to outside suppliers, the purchaser still needs the expertise to be able to procure the desired quality at an economical price.

The following section focuses mainly on systems in which publishers submit textbooks for evaluation and approval. For many countries in Asia, this process is still in the process of being developed. While MOE-centralized systems may also follow internal evaluation and approval procedures, in such systems more weight may be attached to the seniority of those representing their institutions than to the relevance of their personal experience, with the result that textbook evaluation may be superficial and perfunctory: superficial because the evaluating authority does not wish to undermine the work of its own ministry, and perfunctory because the nature of the process is not in great depth.

Submission of Textbook Proposals

Many submission procedures require the anonymity of the publisher. In **Hong Kong, China**, for example, all printed copies of the textbooks submitted should be "double-blind", that is, they should not contain any book titles or information about the publishers, authors, advisors, etc., to enhance the objectivity and impartiality of the textbook review (Education Bureau, Hong Kong, China 2018, p. 3). This initial anonymity gives way to an open and transparent negotiation between the parties once a textbook has been provisionally approved.

Several high-performing systems operate such two-stage textbook submission processes to good effect (see Box 6). In the first stage of submission, publishers must demonstrate that they have properly considered the vision of the curriculum and syllabus. The call for proposals may describe the specific elements of the vision that publishers should address, and also how long this document should be, within the publisher's overall proposal. Following this first stage, the MOE provides feedback.

Submissions may consist of single textbooks or series. **Hong Kong, China**, allows publishers to submit in batches for textbook cycles (e.g., grades 1–6) (Education Bureau, Hong Kong, China 2018, p. 3). Evaluating and approving textbooks in series, rather than grade by grade, may also have implications for

Box 6: The Two-Stage Submission Process

In the **People's Republic of China** (PRC), the evaluation committee provides detailed feedback to the publishing house. After modification, the textbooks have to be re-examined.[a]

Lianghuo Fan, a former textbook editor in both the PRC and **Singapore**, both of which operate a two-stage submission and evaluation process, comments that textbooks are essentially textbook developers' own interpretation and reflection of the intended curriculum in the process of textbook development. They must study and hence establish good knowledge of the curriculum; and more importantly, work together and get information and feedback from curriculum developers.[b] He adds, in a comment to the author, "When I served as a chief editor in both countries, I received detailed feedback and sometimes even recommendations."

The **Republic of Korea**'s two-stage submission process is described in Article 9 of its Regulations on Curriculum Books, including the appeal process.[c]

Viet Nam also plans to follow a two-stage submission process:

- Based on the curriculum, publishers will develop the outline.
- The Ministry of Education and Training (MOET) will evaluate and approve the outline.
- Based on the approved outline, publishers will develop and organize the testing of the draft textbooks.
- The publisher will collect comments on the draft textbooks.
- MOET will evaluate the completed textbooks.
- Publishers will refine and finalize the textbooks.
- MOET will give final approval.

In **Hong Kong, China**, the Curriculum Development Council follows a multi-stage consultation process.[d]

In **Taipei,China**, the Reviewing Committee offers suggestions for revisions to the publishers, who might revise their textbooks or seek to justify their decisions. There may be two or three review cycles.

▲ **Textbook policy inevitably reflects political environments.** However, there is no natural link between political systems that describe themselves as liberal, and textbook policies that can be described as liberalized (photo by Viet Tuan Tran).

[a] J. Li. 2008. Curriculum Development in China. In Z. Usiskin and E. Willmore, eds. 2008. *Mathematics Curriculum in Pacific Rim Countries: China, Japan, Korea and Singapore*. Charlotte, NC: Information Age Publishing.

[b] L. H. Fan. 2010. Principles and Processes for Publishing Textbooks and Alignment with Standards: A Case in Singapore. http://docplayer.net/28820034-Principles-and-processes-for-publishing-textbooks-and-alignment-with-standards-a-case-in-singapore-lianghuo-fan-nanyang-technological-university.html.

[c] Ministry of Education, Republic of Korea. 2015. Regulations on the Curriculum Books: Presidential Decree No. 26709, 15 December 2015. https://elaw.klri.re.kr/kor_service/lawView.do?hseq=37171&lang=ENG.

[d] Education Bureau, Hong Kong, China. 2009. Working Group on *Textbooks and e-Learning Resources Development: Main Report*. http://www.edb.gov.hk/attachment/en/curriculum-development/resource-support/textbook-info/wg%20final%20report.pdf.

Source: Asian Development Bank.

the timing of curriculum implementation. Until 2012, the ROK followed the practice of approving grade by grade but has now moved to a cycle-based or "bunched" system.

In order that the submitted manuscript is appropriate in terms of teaching time, activities, and other aspects such as language level, publishers should also be required to show they have microtested the materials in schools. The MOE should cooperate with publishers to ensure that publishers have access to schools in order to carry out their microtests.

Evaluation Criteria

The criteria for each subject and cycle should be developed by the MOE as part of preparing new calls for proposals, and may be grouped under the following five headings, which are the framework used in **Hong Kong, China**:

- **Content**: syllabus coverage
- **Learning and teaching**: methodology
- **Structure and organization**: while some aspects of the organization and sequence of the textbook may be prescribed by the syllabus, textbook writers should have some freedom to interpret the syllabus in their own way and provide creative solutions.
- **Language**: the language of the textbook is vital to the learner's ability to access the content of the page.
- **Textbook layout**: visual aspects, including minimum appropriate font size and line spacing for a given grade level.

Criteria may vary according to subject and cycle. A version of the criteria may later be used for textbook selection by schools (or by those making the final selection on behalf of schools). For practical purposes, the criteria should be deep and few. Each criterion reflects an aspect of the textbook that is found throughout the textbook, which requires the evaluator either to hold all the criteria in his or her head throughout the review of the textbook, or constantly reread it for each criterion.

In its new multiple textbook policy, **Viet Nam** will evaluate and approve textbooks using the following general headings, each of which has many subcriteria:

- objectives, principles, teaching methods, and assessment;
- knowledge content;
- form and presentation; and
- teaching materials and equipment.

The ROK provides a set of generic evaluation criteria as well as a set of subject-specific criteria (Korea Institute for Curriculum and Evaluation 2013, pp. 78–79). The subject-specific criteria cover

- observance of the curriculum (including teaching and learning methods),
- selection and organization of content, and
- accuracy and fairness of content.

In **the PRC**, the MOE's Textbook Development Division sets the textbook standards or criteria. The assessment process may take several months. Evaluation criteria are broad and include the following: the publication must be lawful, curriculum standards must be followed, students' developmental stage as well as social and scientific developments should be reflected, and the quality standards issued by national departments must be met. According to one publisher, more detailed evaluation criteria on how to follow the curriculum do not exist.

Evaluation Panels

Evaluation panels generally include a balance between academic expertise and practical experience in the relevant subject and cycle. (For the composition of panels in **Japan**, see Ministry of Foreign Affairs of Japan 2005b.) Panels should include expert teachers with a minimum of 10 years' experience of teaching in the target cycle and subject. The teachers should be newly selected for each evaluation, so that there is no risk that they might be suspected of having links with any publisher.

Criteria for the composition of evaluation panels (and the role of moderator, see below) might include regional, urban or rural, and gender balance. These criteria might also be included in the call for proposals, as an indication to publishers of the MOE's commitment to high standards of evaluation. In **Viet Nam**, according to the Prime Minister's Decision on Approval of the School Education Textbook and Curriculum Innovation Scheme of 27 March 2015 (not available online), the criteria for designating members to the National Textbook Appraisal Committee as well as for the evaluation process should be publicized and transparent. Of course, countries in the process of developing new structures need to invest time and resources in making sure the criteria have the outcomes intended. In **Hong Kong, China**, which has a long history of textbook evaluation, the Education Bureau has set up a textbook review panel consisting of in-service teachers, panel chairs and other education professionals (Education Bureau, Hong Kong, China 2009). The inclusion of teachers in evaluation panels can be controversial. One publisher in Japan, for example, observed that until recently, "some senior teachers were members of the adopting committee at the local level, and the members not publicized. It is a closed committee. This was a problem … the government (also) prohibits any teacher being involved in the reviewing and giving comments and opinions to publishers when new textbooks are going to be adopted." In **the ROK**, "Deliberative Councils" responsible for "compilation, authorization, approval, price determination, publication" of textbooks should consist of at least five members, drawn from "teachers; persons with research career in industrial firms or research institutes; parents; persons recommended by citizen's organizations; persons with expertise in the publication of curriculum

books; relevant specialists working for price survey agencies or cost-accounting agencies; other persons with professional knowledge of the relevant subject or books" (Ministry of Education, Republic of Korea 2015, article 19).

Each evaluation panel may include a nonscoring evaluation moderator to orient evaluators to the requirements of their task, review their scores and if necessary ask them to clarify any inconsistencies. This may include checking that evaluators' scores are internally consistent and asking for explanations regarding any inconsistency. The evaluators should practice using textbooks that will not form part of the evaluation itself (similar to examiners marking students' exam papers). Evaluators can use score sheets to write a summary of their comments. The moderator can check the evaluators' scores against their comments. The moderator should also ensure that the voices of the teachers on the panel are not overwhelmed by the voices of their senior (academic) colleagues. The moderator should sign to confirm that each evaluator has—to the best of their knowledge—worked freely of any external interference. The moderator may be someone with outstanding experience in their field and not necessarily a former teacher of the subject in the cycle being evaluated. The moderator may orient evaluators prior to the evaluation, including using sample materials to practice using the evaluation criteria and agree a common approach. (In some high-security evaluation systems, a trainer trains more evaluators than actually required. At the end of the training or orientation, the evaluators are selected from among those who have been trained. This also has the advantage of ensuring that nobody knows which individuals will form the actual evaluation commission.) While evaluators may often be newly appointed for each evaluation, the moderator may be reappointed.

Textbook Selection

Two systems of textbook selection operate worldwide: local authority selection and school-based selection. In some countries, the principle of school-based selection has been employed in order to reduce the risks of undue influence on the selection (the principle being that the more decentralized the decision, the more challenging for any party seeking to influence the outcome).

In **the PRC**, textbooks for primary and lower secondary are selected by prefecture-level educational authorities or by city or county-level educational authorities. Education bureaus issue a public notice for a selection committee including teaching researchers, teachers, and parents. Each area must choose at least three versions from the allowed textbook options. Some choose more; for example, Beijing has five versions of English textbooks for the primary cycle. One expert commentator in the PRC observed with regard to the advantages of selections being made by the local authority, "Total autonomy is a waste of collective wisdom and expertise" (private communication to author).

In **Japan**, elementary schools and junior high schools operated by prefectures or municipalities are under the purview of local boards of education, within a system

providing for "textbook selection districts" where all schools use the same set of textbooks. As of 2011, Japan as a whole was divided into 582 such districts of roughly similar population (Hiroshi 2012). Further, groups of cities or towns typically join together to form adoption areas that select textbooks for compulsory education, making selections on the basis of teacher recommendations (TIMSS & PIRLS 2015b). Secondary schools select their own textbooks.

In **Singapore**, schools are encouraged to select and use the learning materials listed in the Approved Textbook List. In **Hong Kong, China**, schools have complete freedom to select their textbooks from the approved list. In **Taipei,China**, schools form committees to select their textbooks from the approved list. In **Viet Nam**'s new policy, schools will also have the responsibility for selecting from a list of approved textbooks.

Implications

- Publishers should submit an outline and sample manuscript before developing manuscripts and layouts for the entire cycle.
  - This reduces the need for publishers to invest in a complete textbook series that may not be approved.
  - This also allows the MOE to ensure that the final materials are as good as possible.
- Textbook submissions should be anonymous.
- Textbook evaluation panels should include
  - teachers with adequate experience of the target subject and grade, and
  - a moderator.
- The selection of textbooks by end users (i.e., schools or local authorities on behalf of schools) may result in a more competitive and more efficient system (which may also be more robust against possible outside influences), but this may be a long-term strategy for countries starting the process of liberalization.
  - Those in charge of selecting the textbooks should be in touch with the needs of the end users.
  - Mechanisms need to be in place to prevent outside interference in the selection process.

11

THE SOCIAL MESSAGE

Textbook content (text and illustrations) should consider social and ethnic balance as well as inclusion. Photo is taken from ADB's Second Textbook Development Project (photo by ADB).

The social content of textbooks is clearly an explicit function. Whether published by or approved by government, textbooks carry messages. This may be by means of specific topics but also in the texts and illustrations. In government textbook publishing systems, greater controversies occur over the social content of textbooks because the textbook is an official document. Controversies can also arise in multiple-textbook systems but those textbooks that have "slipped through" the evaluation process may not have a great impact in the schools themselves: multiple-textbook systems are generally better able to avoid the tendency to partisanship that some government textbooks display (Education World 2017).

In their useful study of Australian and Hong Kong, China textbooks, Lee and Collins (2010) recommended that guidelines for textbook writers and publishers should include recommendations for—among other things—accurate descriptions of contemporary practices and equal visibility for female and male characters with a wider range of occupational roles and personal traits. Even in cases where a balanced treatment of the two sexes may not seem possible (as when excerpts from earlier texts containing gender-biased language or stereotyping are included, as found in many Australian textbooks), teachers should contribute to the process by drawing attention to and heightening awareness of the undesirability of such features. They recommend asking these questions:

- Do the school texts include an unbiased view of the full range of human potential for women and men, both textually and visually?
- Do the school texts include sufficient information on important men and women?
- Do the school texts contain any sexist language?
- Do the school texts show equality in the order of appearance of women and men?

In all cases, textbook writers (whether government employees or in the private sector) need guidance on issues including inclusiveness, gender balance, and ethnic balance: they may unthinkingly use stereotypes precisely because the images are familiar and therefore appear not to present a "barrier" to students accessing the content (Coconuts Singapore 2014, Ullah and Skelton 2013, Equal Opportunities Commission n.d.).

During the writing of textbooks, teachers' voices can provide a valuable resource in representing public opinion and avoiding later controversies (Batra 2010).

In addition to explicit issues of content, the pedagogy of the textbooks itself may be a further means of encouraging particular social behaviors, such as collaboration between students and respecting the views of others. Curriculum statements may promote such approaches, which should be consistently implemented by the textbook writers. Ultimately, many teachers will present the texts in their own way. One Western scholar based in Japan commented:

> The content of history textbooks is important because it provides a basic knowledge framework for teaching and learning in schools, and because of textbooks' status as a public version of history—though we must also be cautious about overestimating their influence, given the creative use often made of them by teachers, and the many other sources of historical knowledge that are available to children (Cave 2013).

Implications

- Textbook content should be considered from the perspective of
  - specific instances of social and ethnic balance as well as inclusion (in the text and illustrations);
  - national narratives and their alignment with overall curriculum vision; and
  - a pedagogy that supports critical inquiry, social, and emotional learning.
- Criteria regarding appropriate treatment of gender, ethnic differences, and inclusiveness should be included in calls for textbook submissions from publishers, or in the specifications provided to the MOE's own textbook developers in centralized systems.
- Teacher-reviewers are a valuable resource for textbook writers seeking to confirm that they have avoided controversial statements and content.

12

MANAGING THE COSTS

Several international organizations have examined ways of reducing the cost of textbooks. ADB's Second Textbook Development Project funded textbook printing (photo by ADB).

Textbooks and learning materials represent a large, recurring cost for all education systems (for workbooks, see section 15). The overall system cost is not only a reflection of the unit cost or the published price. Other significant factors include the following:

- the life of the textbooks: the longer the book lasts, the lower its annual cost to the system;
- the number of textbooks required per grade; and
- the balance between the number of re-usable textbooks (i.e., not for writing in) and the number of consumable books (for writing in and therefore for single use only, i.e., workbooks).

Several international organizations have examined ways of reducing the cost of textbooks. Among others, a 2015 paper of the United Nations Educational, Scientific and Cultural Organization urged global policymakers to model their approach on the manufacture and delivery of vaccines, the so-called Gavi model (UNESCO 2016a, Wilson 2017, Results for Development Institute 2016b). This is unlikely to be fruitful since textbooks are not universal in the same way as medical products: each country's textbooks are specific, national, cultural products, which require updating from time to time. Furthermore, while clinical trials can show a specific vaccine to be universally more effective than others, this does not apply to textbooks.

While there are examples of very low-cost government-published textbooks that reach students in adequate numbers in very large systems (e.g., Bangladesh, Egypt, Viet Nam), there are as many examples of government publishing that do not. The critical factor for policymakers is to ensure not only that adequate numbers of textbooks arrive in schools on time, but that the content itself is worth the cost of manufacturing and delivery.

Policymakers can achieve a balance between system costs, efficiency, and quality. The unit prices of commercially published textbooks can be controlled by government, as can the number of pages and other specifications that affect manufacturing costs. For example, in the ROK, all textbooks are published in a standard A4 format on a standard quality of paper. Policymakers can also require publishers to submit textbooks within a maximum price. (See Appendix 3 for further details.)

Free Provision, Parental Purchase, and Textbook Loans

There are four models for providing textbooks to students:

- free provision by government (annual replacement);
- free provision by government, as a loan (for reuse);
- textbook rental (rental fee paid by most parents); and
- full parental purchase (by most parents).

In a majority of countries worldwide, textbooks for students in primary schools (or the basic education cycle) are provided free of charge, even though in some cases the limited quantities of books may not provide students with the full benefit of having textbooks in class. There is a clear policy relationship between compulsory education and the provision of free textbooks: policymakers may hesitate to extend basic or compulsory education to include higher grades because of the costs of providing more free textbooks (for example, the much-delayed decision to extend the primary cycle from fifth to eighth grade in Bangladesh).

Worldwide, there is no direct relationship between national income levels and government policies with regard to free education. Although in the PRC, Europe, and North America most systems provide free textbooks to all students in basic education, in high-income economies in Asia such as **Hong Kong, China** and **Singapore**, the costs have always been borne by parents. Parents continue to pay for textbooks in Viet Nam. In Singapore, this appears to be a cultural expectation that individuals should contribute to the costs of national services such as education and health. Whatever system they follow, all countries ensure that the lowest-income families are provided with free textbooks, although the process of determining which families benefit varies from country to country.

Single Use and Reuse

The systemic costs of textbook provision are related to the life of the textbook. Without exception, in all the countries of Europe and North America where textbooks are free of charge, the textbooks are of high specifications and are reused for as many years as possible for the duration of the curriculum. In countries where parents pay for the textbooks, there is inevitably a lively market for reselling the books second-hand.

Some countries in different regions of the world have successfully established textbook rental systems, in which parents pay an annual fee for the use of a set of required textbooks (see Textbook Rental Systems subsection below). The annual fee is therefore set at a percentage of the total cost. Governments may also contribute to the overall cost of these rental systems. In such systems, the textbooks are of course reused for as many years as possible.

In most countries, the difference between using a textbook for 1 year or several years represents the single largest cost variable. Although many high-performing high-income systems use a textbook for 1 year only (Box 7), a well manufactured textbook—even in the early years of primary when it may be less easy to ensure that children take good care of their books—should last for 2–3 years. Reusing textbooks of course requires improvements to the paper, cover board, and binding quality. However, a textbook with a 4-year life may only be 20% more expensive to manufacture than one with a 1-year life (UNESCO 2016a, p. 6).

In order to ensure also that the content of the textbooks is valid for the expected period of book life, government should avoid requiring publishers to make corrections to approved textbooks. In countries with long-standing traditions of government publishing and annual replenishment use, such as in Bangladesh, India, and Viet Nam, curriculum developers (who are often also the textbook developers) are accustomed to making small changes to the textbooks each year, sometimes in response to comments by other specialists or because of issues raised in the media.

Textbooks that are intended for single use often include activities that allow or require students to write in the textbook itself rather than in exercise books. This in turn encourages an approach in which many of the activities are of the "right or wrong" or "fill in the gaps" type, which may reinforce a particular pedagogy as well as a rote-learning approach.

Box 7: To Use or Not to Reuse Textbooks

In **Shanghai**, textbooks are reused for 2–3 years except for primary mathematics, where students write in the books and the books are therefore resupplied every year. The policy of reusing textbooks dates back to 2008. However, some commentators add that the policy on the reuse of textbooks varies from province to province.

In general, textbooks in **Japan** are given to students in basic education and are used only for a year.

In the **Republic of Korea**, where the government provides textbooks for free in primary and middle schools, the textbooks tend to be collected at the end of the year, not for reuse the next year but for recycling. As some students want to keep the textbooks in which they have made personal marks (many of the textbooks are designed for writing in), the collection of textbooks is partial and voluntary.

It appears to be a common cultural factor in higher-income countries in Asia—even where textbooks are provided free of charge, such as in Japan and the Republic of Korea—that parents and students expect to own the textbook and it is therefore not reused.

▲ **In 2000, with support from ADB, the Government of Uzbekistan implemented a pilot textbook rental system.** After more than a decade, most of these rental systems are still in operation (photo by ADB).

[a] Z. Usiskin and E. Willmore, eds. 2008. Mathematics Curriculum in Pacific Rim Countries: China, Japan, Korea and Singapore. Charlotte, NC: Information Age Publishing. p. 116.

Source: Asian Development Bank.

In systems where textbooks are reused and government tops up existing stocks each year, schools may need advice on how to ensure equity each year between children who receive a new textbook and those who receive a used textbook. One possible way is to randomly redistribute the textbooks within the class each term. This ensures that the school collects the loaned textbooks at the end of each term, and also allows the school to keep a closer eye on the condition of the books.

Reusing textbooks of course depends on schools having adequate storage facilities so that the stock can be collected and housed from one school year to the next. It also depends on developing a culture of textbook care among students and their families.

Textbook Rental Systems

Several lower-income countries in Asia have implemented rental systems as a way of sharing the overall costs of education with parents, while aiming to reduce the financial burden. In such systems, schools rent a set of textbooks to students at the beginning of the school year for a fee (set by government) and collect the books back at the end of the year. The schools may remit the fees back to government.

Such systems are supported by a textbook revolving fund in which the annual expenditure on book purchases from a dedicated fund is balanced by the annual income into the fund from rental fees, government contributions, or a mixture of both. Textbook revolving funds are generally restricted to expenditure on specified teaching and learning materials.

According to the Department for International Development (DFID) of the United Kingdom review of rental systems, textbook rental funds may be (i) national, (ii) regional or district-based, or (iii) school-based (DFID 2011). They may be self-financing, via parental contributions, or government-supported via a percentage subvention, by matching funds, and/or support for the poorest families.

In 1997, **Armenia** launched a new textbook procurement scheme to solve the government's inability to provide textbooks for all students. The textbook revolving fund achieved full cost recovery within 4 years, purchasing replacement copies as textbooks reach the end of their target life. Such systems depend on establishing a climate of trust between parents, schools, and government. The Finnish educationalist Pasi Sahlberg commented that in Armenia, "No cases of corruption or misuse of rental funds have been reported during the 11 years of existence of this system" (Sahlberg 2009). The Armenia revolving fund now includes information and communication technology (ICT) and provides training to all newly appointed principals.

Rental systems operate successfully in several countries where governments have sought to reduce costs through a cost-sharing mechanism, especially in the countries of the former Soviet Union, including Georgia, Mongolia (Independent Evaluation Department 2015), and Tajikistan (UNICEF 2013). In 2000, with

support from the Asian Development Bank, the Government of **Uzbekistan** implemented a pilot textbook rental system that was quickly rolled out nationally.

After more than a decade, most of these rental systems are still in operation, and in some cases the funds have developed surpluses that have been reinvested in the school system; Armenia is a particularly successful example. However, some textbook rental systems have not been so successful. For example, mismanagement of funds led to the collapse of the systems in the Kyrgyz Republic (DeYoung et al. 2006, p. 101).

Parents need to be persuaded of the benefits of rental systems. In countries that are planning an increase in the numbers of years of free compulsory education, the MOE may consider this an appropriate time to introduce a rental system: parents may appreciate that the introduction of a rental fee for secondary school textbooks, which are always much more expensive than primary school textbooks, will reduce the costs of education in this cycle significantly and will compensate for the introduction of cost-sharing for primary schools.

Implications

- Extending textbook life is critical to reducing system costs. In lower-income countries in particular, there is no justification for reprinting all textbooks every year.
- In commercially supplied textbook systems, price controls can be set by government.
- Governments should study the overall required teaching and learning materials profile for each grade and consider whether textbooks are the most suitable form of materials in each subject and grade.
- Textbook rental systems work well when
  - governments are fully committed and are prepared to increase the rental fee when necessary, to cover rising costs (e.g., for paper and printing);
  - parents are persuaded of the value of contributing the rental fee, knowing that their child is guaranteed a set of textbooks; and
  - the rental fee is for the whole set of textbooks that each child needs.
- In textbook reuse policies (whether loan or rental), schools should have good teaching and learning materials (TLM) usage and conservation systems:
  - good school and classroom storage;
  - simple TLM management, record-keeping, and conservation systems;
  - training in TLM usage and management; and
  - regular and informed inspection and supervision.

13

GETTING THE TEXTBOOKS TO THE USERS

In countries with multiple-textbook systems, the publisher is generally responsible for delivery of textbooks. However, government should still monitor that the delivered textbooks adhere to quality standards, and are those that it approved (photo by ADB).

For many governments, the timely availability or delivery of textbooks is one of the main indicators of a successful textbook policy. In **Bangladesh**, where the National Curriculum Textbook Board (NCTB) describes itself as the largest state-owned publisher in the world due to the number of books it prints and distributes annually, the delivery of books at the start of the school year is a cause for newspaper headlines celebrating the "textbook festival." The NCTB contracts printers to deliver textbooks to *upazila* (subdistrict) level and the Department for Primary Education arranges delivery to the schools. Delivery is monitored centrally at the Department for Primary Education by means of digital reports from each district. The NCTB began to procure textbooks via international competitive bidding as of 2010, as a condition set by development partners in the sector program.

Myanmar follows a similar system. Until 2015, the MOE distributed all textbooks itself. Now, printers distribute to the township level, where the MOE Township Education Offices manage distribution to schools. In both countries, textbooks are resupplied each year, so government calculates textbook production based on enrollment figures and the target student–textbook ratio. However, enrollment figures can be inflated for a variety of reasons and need to be verified through regular spot checks.

Similar to Viet Nam's centrally managed system, the systems in Bangladesh and Myanmar can be measured by the fact that each student expects to receive a full set of textbooks each year. Supply matches demand. However, in both Bangladesh and Myanmar, a major complaint by schools is the physical quality of the textbooks, which do not survive the school year. The Myanmar Comprehensive Education Sector Review of 2012/13 found textbooks in schools in adequate numbers, but the quality of the textbooks was so poor as to make them inadequate for their purpose.

An alternative picture can be seen in **India**, where the majority of states do not manage to deliver textbooks on time (OXFAM India 2015). A study by a nongovernment organization on textbook delivery in India in 2014–2015 showed that in 457 schools across 10 states, textbooks were not available in 50% of the surveyed schools (Prakash 2017).

In **Nepal**, which has attempted a mixed approach in which government textbooks for grade 6 and above are printed and distributed by the government's Janak

Education Materials Centre, while grade 1–5 textbooks are printed and distributed by the private sector, shortages and delays are reported throughout both cycles (Budathoki 2016).

In countries that have introduced multiple-textbook systems, the publisher is generally responsible for delivery of the textbooks ordered by the local authority or school. In this case, the local authority or school has the responsibility for monitoring the timing, quantity, and quality. However, in this situation, government still needs to have the expertise and resources to monitor that the delivered textbooks are those that have been approved by government, and that the quality of the manufacturing is up to the required standard.

Even when the MOE is able to deliver stock to local education authorities, the final stage of transporting the books to the school is often beyond the resources either of the local authority or the school. According to textbook specialist Vincent Bontoux (personal communication), **Timor-Leste** is typical of many lower-income countries: the textbooks distributed by the central *Direção da Logística* to the regions do not reach schools because there is no transport or budget. Schools that are closer to district stores may collect their stock, and may even take more than their official allocations, while schools in rural and remote locations may only hear later that books have arrived at the district warehouse. By the time they find out, they discover that much of the stock has been taken.

In many centralized textbook systems, the MOE supplies replacement copies of textbooks based on schools' declared stock and requirements. This is always fraught with difficulty, due to unreliable reporting.

In countries where private sector publishers are responsible for textbook provision, the distribution of the textbooks is usually the responsibility of the publisher, who may deliver to a local center (such as is the case for MOE-developed primary textbooks in the ROK) or more often to the school. Schools usually receive textbooks within a month of the start of the academic year, though longer delays sometimes occur in more populated states (Fredriksen et al. 2015). However, some countries arrange for a central or regional distributor to distribute publishers' books to the schools, such as in Brazil, for example, where the Post Office carries out all distribution.

The Costs of Delivery

In centralized systems, delivery can vary from 30% of the published price to as little as 10%. According to Nguyen Dang Quang of **Viet Nam**'s Education Publishing House, the country's current centralized distribution system has been closely organized with the distribution fee of only 24%, resulting in reduced book prices. Also, direct supplies to schools are also prioritized to minimize distribution through bookstores and dealers.

The *combined* costs of textbook production and manufacturing in Bangladesh, using international competitive bidding procedures for the past 5 years, has been under $0.50.

The Role of Intermediaries (Booksellers)

In most lower-income countries, bookseller networks are weak, with few branches in rural and remote areas. Several development projects have attempted to help strengthen the network of booksellers and book distributors, in order to support this particular link in the textbook chain. DFID supported the Ministry of Education, Science and Technology in Kenya to develop the bookseller network in order that schools could order their preferred textbooks from their local booksellers. The system has been in operation for almost 30 years. Currently, the ministry is planning to recentralize textbook distribution on the grounds of reducing costs (Mutanu 2016).

In **the PRC**, a local publisher commented to the author that "textbooks are generally ordered by schools at local state-owned Xinhua Bookstores, which then deliver the books to schools before the start of the school year. It is a strict policy for students to get their textbooks when they come to school on the first day" (see also Liang et al. 2016, p. 55).

Retailers' discounts vary widely and to a large extent depend on the maturity of the book sector. In highly developed sectors in western countries, discounts can be as much as 50% of the published price, for educational books as well as trade books.[2] In Japan, it is reported to be a relatively low 30% (of which 8% goes to the wholesaler and 22% to the retailer) (Japan Book Publishers Association 2017). In Thailand, where booksellers also provide the link between publishers and schools, discounts range from 25% to 45%.

[2] The publishing industry generally distinguishes between "trade" books, which are sold to the general public, and educational books (including textbooks and academic books). Discounts are usually bigger on trade books, which often have to be stocked in the shop itself and which sell in single copies.

Implications

- Governments may succeed in delivering adequate quantities to schools, with all textbooks replaced each year. However, this is a costly commitment in a lower-income system (compared to reusing textbooks).
- Where the MOE textbooks are printed and distributed on an annual basis of 1:1, policymakers in large populations (where economies of scale can operate even at regional level) should consider devolving textbook ordering and distribution down to the regional level. This is to
  - bring the process closer to the end users; and
  - bring the end users closer to the authority responsible for the timeliness and accuracy of the deliveries.

  Local authorities and schools can be vital in providing the pull factor to monitor the proper and timely delivery of textbooks.
- Where textbooks are intended to be reused (whether published by the MOE or by publishers), schools should have cash budgets, based on actual enrollments, to manage their own textbook stock and replacement orders. In this way, schools (i.e., the end users) can monitor the efficiency of delivery and help avoid losses in transit (whether through corruption or mismanagement). Without school-level budgets, it may be more practical and efficient to require schools to make textbooks last for 3–4 years. In this case, government can replenish textbook stocks based on the target depletion rate. While this will lead to imbalances and overstocking, it is probably less inefficient and quicker than relying on inaccurate and untimely school orders.
- Where textbooks are published commercially, booksellers, in collaboration with publishers, should deliver direct to schools. (The higher costs associated with delivering textbooks via booksellers in a multiple-textbook system are an almost unavoidable part of the flexibility required by such a system.)

14 TEXTBOOK MANUFACTURING

A major issue for government textbook publishers using private sector printers is government's technical capacity to ensure quality. Government textbook publishers should be able to monitor the quantities and timing of textbook delivery by suppliers (photo by ADB).

The number of countries printing textbooks in their own government-owned printing houses has dwindled in recent years. In one of the most recent examples, Myanmar, which was until 2015 a highly centralized system, has now outsourced textbook printing to a government-approved list of printers.

The policy decision regarding textbook printing may be more focused simply on whether to print inside or outside the country. This is a more difficult decision for many governments, involving issues of currency and frequently of powerful local, commercial interests. While printing outside the country is often more cost-effective than printing inside the country (UNESCO 2016a, p. 40), which may be due as much to import duties and value-added tax as to manufacturing overheads, economic national interests may override considerations of cost. In 2015, a dispute over the printing of Bangladesh's primary school textbooks—subcontracted through World Bank-supported international competitive bidding—led to serious delays and manufacturing quality problems when national printers combined to submit prices that were significantly less than the National Curriculum and Textbook Board (NCTB) had anticipated. (They were also unconvinced that the national printers were capable of delivering at the price quoted.) The result was a delivery of last-minute, poorly printed textbooks that were entirely manufactured within the country (Sharifuzzaman 2015).

A major issue for government textbook publishers using private sector printers is government's technical capacity to ensure quality from the supplier and to monitor the quantities and timing of textbook delivery. The annual printing of tens of millions of NCTB textbooks in Bangladesh, for example, is overseen by NCTB's own *curriculum* specialists, making the staff unavailable for their own work for long periods. In much of India, also, this can lead to undersupply or late supply.

Specifications

Printing within the country often has implications for textbook specifications. For example, many countries do not have capacity for fully automated thread-sewn binding, which is a standard specification for a durable textbook. Printing specifications must be adequate for the expected life of the book. According to a Thai publisher, textbooks in that country are printed on either newsprint or lightweight, wood-free paper with a perfect binding that is not durable, particularly in the local climate. In the new textbook loan policy, introduced

in 2018, it is unlikely therefore that the textbooks will last 1 year, let alone the expected 2 years. Middle-income families will consequently choose to buy their own copies, exacerbating inequality.

In order to keep manufacturing costs down, the extents (number of pages) of textbooks in countries that provide free government-published textbooks are generally less than in other countries. Although the extent of the textbook is not in itself a barrier to effective learning, this requires the textbooks to be appropriately planned and written.

With improvements in printing technology and higher expectations among educators (including among development partners assisting low-income countries), most countries now provide four-color textbooks for primary schools. Bangladesh and Sri Lanka both adopted four-color printing in 2012, while in Nepal textbooks for grades 1–2 began to be printed in color from 2017 (Himalayan News Service 2016).[3]

Several countries continue to specify a particular type size for each grade (e.g., NCTB in Bangladesh), and some are even more specific about page margins and other details. While this was common in the former Soviet Union and is still found in much of Central Asia, it is also notable in some otherwise liberal policy environments. Japan, for example, prescribes the use of color, page size, number of pages, and type of paper. Until 1999, high school textbooks in Japan were mostly black and white. After that time, several rules were relaxed, and color was allowed (Langham 2007). However, the result is that textbooks in Japan are very lean and compact compared to their counterparts in other industrialized countries: they are very inexpensively produced paperbacks, with a separate book for each semester, each at under 100 pages (OECD 2011, p. 142).

In 1992, the ROK announced very detailed specifications, including page size, margin, font size, line spacing, line length and number of lines, extent, paper quality and colour density, and binding. In 2009 this was relaxed, with the result that only the page size and paper weight is now specified (Korea Institute for Curriculum and Evaluation 2013, p. 80). See also DFID's useful paper (DFID 2011), which recommends specifications for text paper, cover board, and binding.

[3] The South African publishers' association estimated that requiring books to be published in black and white instead of color would save roughly 3% (Publishers Association of South Africa. Industry News. http://www.publishsa.co.za/industry-news).

Implications

- Government textbook publishers should contract printing to the most competitive supplier, wherever their location, subject to national policy on printing within the country.
- The MOEs that subcontract printing need to have the technical know-how to enforce the required standards, as well as to monitor the timing and delivery. This monitoring can be simplified and made more accurate through a well-designed digital accountability system.
- It is beyond the scope of this report to recommend printing, paper, and design specifications. Policymakers should decide how much detail they need to insist on, in their requirements of publishers and printers. They should obtain samples with a range of specifications, examine practices in other comparable countries, and carry out their own tests.

15

NOT JUST TEXTBOOKS

Workbooks, or write-in books, are only viable in high-income systems. Reusable textbooks are preferred for reasons of economy and, with the possible exception of primary mathematics, also for pedagogical reasons (photo by ADB).

This section addresses key nontextbook printed materials, namely workbooks and reading books. Other printed materials such as wall charts, work cards, etc. are too diverse to consider and little research is available in terms of their cost effectiveness or educational value.

Workbooks

For most countries, the following statement is entirely accurate and pertinent: "There is a dearth of conceptual literature on the functions of pedagogic texts. Most of the literature on learning materials focuses on textbooks, and the function is generally assumed. Workbooks as a category of learning and teaching material, and what functions they may serve, is neglected" (Hoadley and Galant 2016, p. 4). Workbooks may give the appearance of being "child-friendly" but, given a choice between one or the other, they are not widely believed to be as cost-effective as textbooks, even for mathematics (Fleisch et al. 2011, Allington 2002). In literacy lessons, according to former International Literacy Association president Richard Allington, "No study has ever identified completing workbook pages as effective practice" (Allington 2013, p. 527). An exception can be made in the earliest grade(s), when the amount of writing required is not great and when basic skills are being developed and practiced. In subsequent grades, pupils can get more practice and develop a wider of competencies with the support of a textbook rather than a workbook.

In **the ROK**, the government provides workbooks for all grades of primary mathematics. Jeong Suk Pang of the National University of Education notes that in the case of elementary mathematics, usually simple problems are introduced in textbooks, whereas more difficult ones are presented in workbooks (Usiskin and Willmore, eds. 2008, p. 109). In **Sri Lanka**, the MOE provides workbooks for several subjects in an attempt to tackle the growth of private tuition.

Reading Books

For schools with sufficient financial resources, the main nontextbook material for most—if not all—schools is a range of reading materials, whether in printed or digital formats. The ideal scenario in the view of most reading specialists is a well-stocked school library, managed by a trained librarian, or classroom reading books. The Progress in International Reading Literacy Study (PIRLS) report for

2011 stated that "having students read books and a variety of different types of materials is fundamental to developing their reading comprehension skills and strategies" (Mullis et al. 2011, p. 238). The minimum scenario should be a range of grade-level readers for the primary (as well as, where appropriate, the preprimary) cycle. The range should be broad enough to reflect different reading levels and interests. Packaged with mother tongue textbooks, these can provide vital reading practice as long as they are well written and produced. However, very few lower- to middle-income countries provide schools with grade-level reading books, whether directly as MOE-published books or indirectly as funding for the purchase of commercially published books, and we know of no examples in Asia of high-quality MOE-published children's reading books (although the MOEs in some Central Asian economies—for example, the Kyrgyz Republic—*do* provide literature textbooks to accompany the mother tongue [grammar] textbook).

The presence of reading materials, or a library, alone is not enough to make a difference to learning in most cases. A study in Bangalore, India, found that libraries had little impact on academic achievement despite the fact that they made a significant change in the level and quality of available resources and involved pedagogical methods designed to support the existing curriculum. This is not to say that libraries cannot play an important role, but rather to suggest that to increase the possibility of doing so, libraries must do more than simply provide additional resources and bimonthly programming. The results stand in contrast to many recent studies in developing countries that showed large positive effects of programs that provided additional resources while teaching students using a pedagogical method that is different from their normal experience (Borkum et al. 2012).

On the other hand, a major study to determine the reasons for the significant difference in reading attainment between Hong Kong, China and Taipei,China Grade 4 students in the PIRLS 2006 assessment exhibited "markedly contrasting instructional strategies in Chinese reading lessons" and "the Hong Kong, China teachers' readiness to use a wide range of reading material in lessons, in contrast to the prevailing practice in Taipei,China of using the same textbook with all students in the same grade." Using various reading materials helps to develop students' skills of reading for a purpose (Tse et al. 2016). The earlier policy in Hong Kong, China, regarding reading books was reviewed following weak results in their very first PIRLS experience in 2001. The reforms led to Hong Kong, China placing first in the 2016 PIRLS assessments (TIMSS & PIRLS 2017). Japan and the ROK have both seen the success of introducing early morning reading time, supported by a wide range of reading materials. In the ROK, inspired by Japan's initiative of the same name, The Morning Reading movement is one of the biggest and most effective campaigns to stimulate children's reading (Court 2017). A range of initiatives in Indonesia suggests that the establishment of a reading culture in a large number of schools may be under way (Heyward and Martin 2017).

Even in centralized textbook publishing systems, the MOEs should support reading by supporting national publishers to create appropriate high-quality books. Reading books are a vital lifeline for small publishers and for developing a wider reading culture.

In some lower-income countries, it is often considered not to be economically feasible to provide reading books in the necessary quantities. Where they *are* supplied—often via a short-term project—the books are often not replaced. In this case, other sustainable solutions must be sought. The effectiveness of reading aloud to students, which requires a smaller quantity of books, has been demonstrated. We Love Reading, a project founded in Jordan in 2006, is based on the simple concept of training volunteers to read books to children in easily accessible public spaces.

Several digital formats of reading books have recently become widespread in lower- and middle-income countries. Among these is the low-cost WorldReader initiative, which has been introduced by WorldReader Kids in much of sub-Saharan Africa as well as in South and Southeast Asia. More details on digital learning materials can be found in Appendix 2.

Implications

- Workbooks, or write-in books, are only viable in high-income systems. Reusable textbooks are preferred for reasons of economy and, with the possible exception of primary mathematics, also for pedagogical reasons.
- The presence of reading books in libraries or classrooms is essential for developing early grade reading, accompanied by frequent and sustained reading instruction.
- As a very minimum in lower-income countries, the MOE can procure a literary "source book" for teachers' use in the early grades, containing high-interest texts of an appropriate level for oral literacy work and even for copying onto the chalkboard for textual decoding.
- Countries that have the resources to provide a wide range of reading materials for students to choose from have seen significant impact on reading behaviors and levels.

16

WHAT'S SO SPECIAL ABOUT COPYRIGHT?

Copyright is different from publishing rights. Copyright is automatically held by the writer of the material. Publishing rights are an organization's fundamental asset, its intellectual property (photo by ADB).

Intellectual Property

The difference between a publisher and a printer is widely misunderstood in many MOEs, which leads to a misunderstanding about copyright. A publisher is the organization that acquires the rights in or develops the content of a textbook or any other intellectual property, while a printer is a manufacturer. Copyright, according to all international conventions, is automatically held by the writer of the material. Of course, if the publisher commissions the writer, the arrangement regarding the rights will be a condition of the commission. The writer assigns his or her rights (these may be the entire copyright or only partial rights) to a publisher as part of a contract with the publisher. The publisher may, in turn, assign the rights that it has acquired to a third party. All such rights normally have time limits of several years, after which period the rights revert to the copyright owner.

Copyright is not the same as publishing rights. A publisher may, for example, assign foreign language rights in a text, while retaining the copyright. The foreign language publisher will then own the copyright only on the foreign language version of the text.

Publishing rights are a publisher's fundamental asset, their intellectual property. In some countries, where the financial incentive is large enough, publishers have agreed to assign their entire rights in a work to an MOE. Generally, publishers are reluctant to hand over such rights.

Government can usefully inform all users of textbooks of the meaning of intellectual property, which affects several activities in many schools. As an example, Hong Kong, China, provides such information (Intellectual Property Department, Hong Kong, China, n.d.).

Piracy

One of the arguments made by publishers is that compared to a government agency, they are better able to protect a published book from piracy. While government publishers should, in theory, be more capable of legally pursuing textbook pirates, in practice publishers are much more vigorous and effective in tracking down and taking pirates to court. As an example, the 2016 *Yearbook of China's Cultural Industries* reports that after it was fully liberalized, the People's Education Press (PEP) began to assert and protect its rights against other publishers who were publishing supplementary materials for PEP's own textbooks.

> "Textbook piracy may involve schools themselves, where they develop books and sell them to their own students using content from private publishers' textbooks."

Worldwide, especially in lower-income countries, the most widespread challenge to copyright law comes from textbook piracy and plagiarism. Like any other book, textbooks are prone to being pirated. In Pakistan, one multinational publisher estimated that the value of the pirated book market was greater than that of the genuine books (Kaiser 2017). Pirates may include schools themselves, such as some private school chains in Pakistan, where one publisher claimed (personal communication) that many school chains develop books and sell them to their own students using content from private publishers' textbooks. Combating piracy requires public information as well as legal pursuit. Many parents and students who buy pirated textbooks on the open market are unaware that the textbook has been pirated, even when the specifications of the book are clearly poorer than the officially published version. Plagiarism is even harder to monitor.

Copyright protection is as good as the legal system behind it. This is particularly evident in disputes between commercial textbook publishers and ministries of education. In Georgia, where the MOE has attempted to revert all rights in approved textbooks to itself, publishers took the MOE to court (International Publishers Association 2016).

One Singapore publisher commented privately that all publishers are very worried by Singapore's proposed new education exemptions to the Copyright Act, which are quite exceptional and would have a devastating effect on the educational publishing industry in Singapore.

In 2008, the Ministry of Education and Culture in Indonesia announced it would purchase copyright in all commercially published textbooks and would place portable document formats of the textbooks online for anyone to download and print. The ministry even specified the printing specifications for third party printers. The website Buku Sekolah Elektronik (electronic school books) states that

- the copier and/or seller is of Indonesian nationality or legally established in Indonesia;
- the copier's identity had to be stated on the first page of the books that are sold and/or distributed;
- the specifications of the text book for sale has to be according to the directions given by the National Minister of Education;

- the sales price for any books copied and sold must not be higher than the maximum price set by the National Minister of Education; and
- the book copied for sale has to show the price on the back cover.

According to an overview of the Indonesia book market produced for the 2015 Frankfurt Book Fair, in 2006 the MOE planned to make digital textbooks available all over the country, and it went on to produce its own teaching material. This resulted in a fiasco, and some publishers of the original textbooks ended up printing the digital material as the (often poor) schools were unable to use it (Frankfurter Buchmesse 2015).

State textbook publishers often feel no obligation to pay for permissions to use material from other sources; or lack the funds, knowledge, or processes to do so. This may include downloading and using photographs from the internet without permission, or quoting from other published texts. (See, for example, DTI News 2014.)

For some higher-income countries, the main issue regarding textbooks and copyright is so called "fair dealing" rights, by which schools may copy parts of textbooks and other materials for their students.

There is no doubt that online and free-access Open Educational Resources are a challenge to copyright laws, but the basic principle remains: the reproduction of such materials must be permitted.

Some piracy is simply a response of the market to a situation in which official copies of textbooks are difficult to find. This may even apply to digital textbooks. For example, in Indonesia, some of the file size of the books are as large as 23,000 kilobytes and take more than one hour to download. In the end, many teachers preferred to use textbooks available in bookstores (Ena 2013, pp. 30–31).

Implications

- Copyright lies at the heart of intellectual property. The MOE should work with publishers and the general public to inform all stakeholders and to protect intellectual property.
- Governments that publish their own textbooks must abide by copyright law when reproducing text or images, and must oblige publishers of textbooks submitted for approval to do the same.

17

CONCLUSIONS

Teacher's resources and other learning materials may be necessary for some subjects, especially for the mother tongue. Photo shows students in the Thai Hong Primary School in Johor Bahru who study the Malay language as one of their subjects (photo by ADB).

This report has explored textbook policies in a range of countries, especially high-performing educational systems that policymakers often look to as models, especially when they share cultural characteristics.

It is possible to see some broad common trajectories. Formerly centralized systems have gained the confidence to devolve the responsibility for textbook development to private sector publishers and to devolve the final selection of textbooks away from central administrators. This devolution has not always taken the same form. In the PRC and Japan, the selection of textbooks—the mechanism of "consumer choice" that lies at the heart of a flexible, competitive system—is carried out by local authorities with inputs from schools. However, Japan's system is a result of its unique history, in which school boards were established after 1945 as a counterweight to potential central nationalism. Japan's selection system has been put to the test by pressures relating to its history textbooks, but has been addressed through checks and balances provided by teachers' inputs in the selection process.

In the PRC, on the other hand, the system is not in practice very diverse: PEP, the former sole textbook publisher, is still the dominant publisher for primary and secondary school textbooks. To some extent, therefore, the PRC and Japan are outliers. In most countries with liberalized systems, the schools themselves have the final say over which textbooks, chosen from an approved list, suit their needs. This devolution can be accompanied by other devolved responsibilities, including school-based financial management.

This devolution of responsibility depends on the private sector being able to play its role, which in turn depends on trust in publishers as well as on perceptions of publishers' capacity. For countries that have traditionally been highly centralized and state-managed, this trust and capacity takes time to develop. However, most countries already have a reasonably flourishing local publishing sector that publishes textbooks for private sector schools. In the PRC and some other Asian countries, universities have also emerged as important publishing companies. (This is a unique phenomenon in Asia but rare in other countries, with the exception of two centuries-old, multinational British educational publishing companies, the Oxford University Press and Cambridge University Press.)

The process of transition to a devolved system can be easier when it is gradual: in the PRC, Shanghai pioneered the change when it opened up to multiple textbooks in the 1980s. Viet Nam spent 3 years trialing its new multiple-textbook policy

and has yet to roll it out. There is a risk for all policymakers that gradual transition is interrupted before it shows any results. Policy and politics is a fast-changing world in which change has to be swift in order to be seen as effective. The limited experiments with procuring textbooks from commercial publishers in India and Pakistan, for example, were too short to provide policymakers with any significant lessons (Lodhi 2011). However, in 2017, Khyber Pakhtunkhwa Province in Pakistan announced a new policy, which states that

> Improvement in the quality of education at all levels through better quality textbooks at affordable prices and other learning materials for promoting a knowledge-based society in Khyber Pakhtunkhwa. Choice and competition are major forces in achieving this objective. Choice on the part of the buyer promotes acquisition of knowledge, empowerment and participation. Competition on the part of the producer leads to a wider variety of products, improved quality, availability and affordable prices (Government of Khyber Pakhtunkhwa 2017, p. 3).

Whether or not the private sector is the main publisher, in almost all countries the printing and distribution of textbooks have been devolved to the private sector. The devolution of printing and distribution is an indication that the ultimate concern of most governments in the 21st century is not to control all aspects of the economy, but to control or vet the content and messages that are delivered to students.

Certain centralized systems have been very effective in delivering the right quantities of textbooks to schools on time, year after year. Viet Nam, which now seeks to replace that system with a devolved system; Bangladesh, where development partners have been the catalyst for timely deliveries of adequate quantities.

The decision to assign printing and distribution of textbooks to the private sector is usually made on the basis of cost and efficiency. Governments are able to design a system that results in an economical and efficient supply, and to control prices in consultation with the publishing sector. Countries that experience continual complaints about the high cost of textbooks are those that have chosen not to interfere in price as a factor.

A further challenge for countries in a transitional devolution of textbook procurement is the situation in which former state-owned publishers compete with commercial publishers. In the PRC, this challenge did not arise because all educational publishers that have emerged in the past 2 decades are majority state-owned, even where multinational publishers have a share in the business. In Viet Nam, it remains to be seen whether a strong private sector will emerge from the new multiple-textbook system. Singapore's trajectory in the 1990s was an example of how the former, dominant, state-owned Education Publishing Bureau continued to be a significant market force after it was privatized.

The degree of liberalization of textbook systems varies hugely. Several countries with high-achieving education systems have developed a "mixed model" approach to textbook policy. In the ROK, the MOE continues to develop the content of all core primary textbooks. Singapore has also kept all textbooks with social content under its own wing. In common with many countries in Europe, several highly liberalized textbook systems in Asia are now seeing pressures from central government to regain control over textbook development. In the PRC, this is seen mainly as an issue of textbook quality. In Singapore, it is due to government concerns about national identity.

Textbook policy follows education policy. It is noticeable that while many countries in Europe, North America, and Australasia have declared their admiration for aspects of high-performing East Asian education systems, the policymakers in those same Asian systems are now determined to reduce their focus on "achievement" and to emphasize "21st century" or "transversal skills". This determination reflects the same consistency of analysis and decision-making that led to those countries' outstanding educational achievements. Whether it is possible to rebalance high-stakes systems is a new question for all policymakers. Historically, no country has had to deal with the social costs of such success.

While the textbook policy trajectory of the PRC in the 2000s and now Viet Nam follows that of the ROK in the 1980s and Singapore in the 1990s, the majority of countries in Asia—at various income levels—continue to operate very centralized systems in which a single textbook in effect represents the syllabus. There are regional patterns, related to the historical experience; for example, the common heritage of the countries of the former Soviet Union; and the heritage of the countries of the Indian subcontinent. Furthermore, despite globalization, many countries still study their immediate neighbors for examples of policy and practice.

Can centrally planned educational systems lead to high-quality textbooks and good learning outcomes? The answer has to be a highly qualified affirmative, as long as certain high threshold factors are in place. Until its disbandment in 1996, Singapore's educational achievements and the quality of its textbooks grew out of the MOE's celebrated Curriculum Development Institute of Singapore, which ensured that highly experienced teachers played their part alongside academic experts who were up to date with current research in their fields of specialization (Hoong 2006). Singapore's curriculum and textbooks were also built on its deep understanding of pedagogy and learning: its adoption of Jerome Bruner's work, particularly in mathematics and science, has survived now for almost half a century.

As the 2010 McKinsey study, How the World's Most Improved Systems Keep Getting Better, pointed out, in 1997, Singapore launched Thinking Schools, Learning Nation, emphasizing a shift in focus toward enabling each student to reach the maximum of his or her potential. This focus on student ability required schools to be given greater flexibility and responsibility in how to teach and manage their students. The Thinking Schools, Learning Nation scheme gave teachers greater

freedom in classroom practice and gave principals the rights to take decisions on school management matters (McKinsey & Company 2018). Although Singapore is a small, tightly managed economy that does not face the challenges that larger countries do, the PRC's recent successes in international assessments have also come from a continuous focus on supporting high-quality teaching and learning that began in the 1980s.

Teachers' voices are critical to many steps in the textbook chain. Selecting expert teachers with experience of the target grade and subject is essential. As Larry Cuban observed of the experience of the United States, the history of top-down classroom reform is a history of failed efforts to alter what teachers regularly do daily.... Where and when there have been deep changes in classroom instruction, teachers were involved in the planning and implementation of the reform .... Reforms aimed at altering dramatically classroom instruction require working closely with teachers from the very beginning of a planned change and include using their existing expertise and expanding their knowledge and skills (Cuban 2017).

Contracting out services does not depend only on political will but also on the quality of the tender, the evaluation system, and the accountability system. The managers of such systems need to develop expertise. The condition for success is the coherence of the system and the expertise in charge. This is perhaps the overriding lesson from this report. It is a lesson that is both simple and hard: successful policy comes from the consistent application of a coherent vision.

APPENDIX 1: EVIDENCE OF THE IMPACT OF TEXTBOOKS

The evidence for the overall impact of textbooks on learning is harder to find than might be expected. In a 2015 paper published for the DFID–DFAT RISE initiative, World Bank educational economist Lant Pritchett commented:

> Nearly everyone agrees that providing textbooks to students who lack them will improve learning outcomes. Yet, as Glewwe and Muralidharan point out, there are now four different rigorous impact evaluations of textbook provision in four different places that do not find a significant increase in the learning of the typical student. And all four studies can provide, with evidence, a *different* reason why this is so. How can it be that providing textbooks to students without them doesn't increase learning in these contexts? (Pritchett 2015, p. 7)

A 2008 meta-review of 40 studies, published by the Rand Corporation, suggested why this lack of direct evidence is unsurprising:

> ... comparing schools with lots of textbooks to schools with few textbooks and attempting to control for other differences is unlikely to be convincing (as it is impossible to control for all the differences between the schools and thereby isolate the effect of the additional textbooks). Many nonexperimental studies unfortunately fall into this latter category (Evans and Ghosh 2008).

A focus on the evidence for the impact of structured pedagogy on learning in low-income countries, and the ways that textbooks can support such pedagogy, will be more fruitful for textbook policymakers (Snilstveit et al. 2016).

APPENDIX 2: THE DIGITAL DIMENSION

This appendix addresses only formal digital learning materials in textbook form. It cannot address all forms of access to digital content, including online resources; the field is too wide and too fast-moving. Nor does it attempt to address issues of infrastructure, connectivity, or the total costs of establishing and maintaining a high-performing information technology infrastructure in education sector.

Policymakers and publishers alike are equally anxious to enter the digital domain, even though many publishers are still unsure of how the required investments will pay off. According to Peh Shing Woei, chief executive officer of Shing Lee Publishers, a large Singapore publisher, going digital is a must for the educational industry and its players, or one risks becoming obsolete (Tan 2016).

However, evidence for a positive impact of computer-assisted learning in low income countries is still very limited. Although a large meta-study by 3ie found that "computer-assisted learning programmes can improve learning outcomes, in particular for maths test scores", it also found that "overall, computer-assisted learning programmes have had decidedly mixed effects [and] programmes where computer-assisted learning substituted for other lessons were more likely to produce negative outcomes" (Snilstveit et al. 2016, p. 32).

Very few textbook policies are explicit about the role of digital resources. Where official policies include electronic or digital textbooks they do not include other types of digital content. For example, Hong Kong, China's policy has only two additional sections that are specific to E-textbooks: they are evaluated according to their pedagogical use of e-features and their technical and functional requirements (Education Bureau, Hong Kong, China 2016a).

In the **People's Republic of China**, publishers currently do not need to submit e-book versions of course-books to the Ministry of Education. However, Shanghai Education Commission evaluates all products directly related to the textbooks, including digital textbooks.

The **Republic of Korea** (ROK) has been a center of interest for many other countries, following its announced intention of transforming the learning environment in schools entirely from paper to digital. It is worth noting that according to official statements made at the time, "In pursuit of its vision to export the digital textbook to other countries, the government established a systematic

implementation plan for the development of E-textbooks beginning in 2002" (Yang 2014, p. 131). Also, "One of the important goals of the project was to reduce the private tutoring market" (Kampylis et al. 2013, p. 111). Despite a well-planned schedule that was set out in the 1990s, the ROK's final step in rolling out the paperless learning environment was postponed at a late stage for several reasons including a concern about the harmful effects of students' overexposure to digital devices (Harlan 2012). The Ministry of Education has retained the printed textbook for the time being.

At the other end of the spectrum, in terms of providing access to digital resources, governments in many countries where textbook publishing is entirely centralized—and where all rights in the materials are therefore owned by the government—have taken a small first step of placing portable document files (PDFs) of school textbooks online: in India, the National Council of Educational Research and Training's e-Pathshala.nic.in website, and in Sri Lanka, the website of the Educational Publications Department: http://www.edupub.gov.lk/BooksDownload.php. This cannot be described as a digital textbook policy. As one commentator said, online learning platforms have, till date, failed to make an impact on India's educational conditions, primarily because they are mostly just digitized textbooks and course content (Kupathil 2015). In spite of the potential advantages of enabling students both within the country and abroad to have access to the official textbooks, there is unlikely to be any effect on classroom learning. However, even making online portable document files available can be a challenge: the latest online editions of Bangladesh's textbooks, for example, were uploaded as far back as 2011 (Alamgir 2017).

The Expectations of Transformation

Some policymakers subscribe to the idea of the transformational nature of digital learning without reflecting on what kind of transformation is desirable (apart, of course, from a desire for improved learning)? Do they want a transformation in the relationships between teacher and learner? Do they want teachers to transform their teaching? Do teachers want to transform their teaching? And are the teachers capable of doing this, even if they want to? What evidence do we have that large-scale communities such as teachers are able to transform themselves in this way?

Many international information and communication technology (ICT) initiatives are based on an assumption that the introduction of technology into the classroom will, in itself, be transformational. This assumption is the result of observations of other sectors of the economy and society. Comparisons are sometimes made between the potential impact of ICT in the classroom with the world of mobile telephony, in which some sub-Saharan countries were able to leapfrog from a weak infrastructure base to near-universal mobile phone usage. Such comparisons can be misleading.

Even where the infrastructure (reliable power, adequate hardware and software, and good maintenance) is available, digital classrooms do not lead to a digital leap forward in educational terms. Classrooms are complex arenas of well-rehearsed

practices that do not respond quickly to change. A valuable case study is Turkey's large-scale ($8 billion) FATIH initiative, which was a large-scale ICT investment that lacked a clear rationale (see Box A2). The starting point for policymakers must be classroom pedagogy and the relationship between teacher and learner.

Other studies, including those of the One Laptop Per Child program in Peru, note that for technology to make a difference it must be integrated with specific teaching and learning goals in mind, and accompanied by an implementation model that is practical and incentivizing to allow these goals to materialize:

> There is a counterargument popular among advocates of the One Laptop Per Child programs that focusing on distribution first and the implementation model second is a completely appropriate deployment model since children can learn a lot very quickly on their own. Teacher training programs, following this logic, should be tailored around real demands and needs exhibited by children using the technology, and not based on expectations on what will or should happen with it once deployed. However, evidence of failures abounds in contexts where hardware was the primary—or only—input, while positive evidence of self-taught students remains largely anecdotal (RTI 2013, p. 12).

Also, it seems obvious that resources have to be used to have an impact, but many interventions that provide inputs fail exactly because insufficient thought is given to how resources will be used. Infrastructure and other inputs are essential, but they work only when they serve the relationship between teaching and learning (World Bank 2017).

Box A2: Turkey's FATIH Initiative

Launched in 2011, the Turkish Ministry of National Education sought within 3 years to provide over 11 million tablets, preloaded with content, for all students as well as interactive white boards for all classrooms. According to World Bank specialist Mike Trucano, FATIH is "one of the largest national initiatives of this sort that is largely unknown outside that country's borders." Such large-scale, one-to-one educational technology programs can also be found in other countries including Kenya, Peru, Rwanda, and Uruguay.

In a 2013 analysis, specialists from RTI, in collaboration with the Turkish organization Education Reform Initiative, analyzed the reasons for the apparently limited success of such a large investment. The study was carried out 2 years after the Turkish Ministry of National Education had already distributed 63,000 tablets, as well as interactive white boards to 84,000 classrooms. It concluded that such projects should have a broad vision of the purpose of the technology, the expected outcomes, and the logic model that will lead to those expected outcomes. This vision was lacking in FATIH.

▲ **Digital classrooms do not lead to a digital leap forward in educational terms.** Even where the infrastructure (reliable power, adequate hardware and software, and good maintenance) is available, classrooms are complex arenas of well-rehearsed practices that do not respond quickly to change (photo by Mark Floro).

Source: RTI International. 2013. Turkey's FATIH Project: A Plan to Conquer the Digital Divide, or a Technological Leap of Faith? http://www.rti.org/sites/default/files/ resources/fatih_report_eri-rti_dec13.pdf.

Refining the Focus

Although continuous technological advances mean that new options are always emerging, policymakers in 2016 have the benefit of being able to study a wide range of international experiences. Several international overviews are also available, which can help today's policymakers to avoid the errors of their predecessors. Mike Trucano of the World Bank addressed these errors in what he called the "myths of going digital" (Fredriksen et al. 2015):

- ***"We Will Cut Costs by Going Digital."*** This is particularly the case where the infrastructure is not yet in place. In countries with weak infrastructure in sub-Saharan Africa, the cost of providing digital reading materials as opposed to print materials was calculated as being between 20 to 60 times more expensive. Obviously, costs can be controlled much better than this, but the risks of spiraling costs are evident. (See also Results for Development Institute 2016a, p. 30.)
- ***"The Content We Need is Already Available—and Free."*** In English, French, or Russian-speaking environments there is sometimes a temptation to think that there is plenty of free content, especially for students in secondary schools. For most languages, the content is not available.
- ***"If We Don't Act Now, We Will Fall Behind."*** This translates into the "political imperative" identified by the authors of RTI's FATIH study.
- ***"Digital Learning Materials Will Engage and Motivate Our Children."*** Some content may motivate learners and some approaches to the use of this content by teachers may motivate learners—and others may not. Some "digital textbooks" add little that the printed textbooks do not offer.
- ***"E-books can Simply Replace Textbooks."*** No national education system has yet moved entirely to digital. Even countries that have taken the lead in moving to "digital only" have taken a step back. The best-known example is the ROK, where a report by Korea Institute for Curriculum and Evaluation on the development of English teaching materials stated that given the diversity of physical settings and student characteristics at public schools in the Republic of Korea, a new model of digital textbooks is needed that can complement and supplement paper textbooks and enable students to learn on their own. For most countries with good digital resources, teaching and learning use both printed and digital materials. This therefore relates to Trucano's first point, regarding the potential of digital resources to save costs. They generally cannot and do not.

The Evidence of Impact

In a widely reported survey entitled *Students, Computers and Learning: Making the Connection*, the Organisation for Economic Co-operation and Development provided a first-of-its-kind international comparative analysis of the digital skills that students have acquired, and of the learning environments designed to develop these skills. The analysis compared data from 15-year-olds in member countries, posed critical questions as to what benefits might be expected from digital learning and attempted to analyze why the expected benefits do not always

occur. Among the most widely reported findings of the report was that were "no appreciable improvements in student achievement in reading, mathematics or science in the countries that had invested heavily in ICT for education. And perhaps the most disappointing finding of the report is that technology is of little help in bridging the skills divide between advantaged and disadvantaged students" (OECD 2015, p. 3).

A study of the evidence to support investment in ICT in Education, prepared in January 2015 for the Government of Nepal as a background study for a planned Early Grade Reading Project (Pouzevara 2015), argued that

- technology has the most impact when school systems are already strong,
- technology works best when it is applied with purpose to support very specific instructional goals, and
- teachers have to be in the driver's seat.

Similarly, in Myanmar, 33,497 schools were provided with ICT facilities in 2009, but evaluation showed the frequency of use of ICT for teaching and learning was considered to be very low (UNESCO Bangkok 2013).

The general lesson from the above OECD survey is that digital teaching and learning does not by itself have a revolutionary impact. Instead, it tends to reinforce or amplify existing practices. Technology in itself cannot transform learning.

The study by the Hong Kong, China Working Group on Textbooks and E-Learning Resources Development starts by defining e-learning as "The overall goal of all these strategies is to see a 'paradigm shift' in school education from a textbook-based and teacher-centered mode to a more interactive and learner-centered mode" (Education Bureau, Hong Kong, China 2009, p. 9).

In **the ROK**, digital textbooks were planned as part of phase 4 of the MOE's rollout of ICT in education (Han 2013). The target grades were from grade 5 upward, with the clear aim of helping students "develop 21st century skills such as creativity, collaboration, communication, critical thinking, and self-directed learning abilities". For an overview of development in the ROK, see https://www.youtube.com/watch?v=gVUl4RAxD1A.

In **Thailand**, the government planned to provide the world's largest number of free-of-charge tablets. The tablets were intended to remain the property of the schools for 3 years. During this period, students would take them home each day, and at the end of the period they would own them. The initiative faced continuous criticisms regarding both the procurement process and the reliability of the devices. But according to one Thai publisher (personal communication), the main issue was that the government did not realize that the device alone could not be used without content. The tablets were recalled in 2015.

In **Malaysia**, mathematics and science textbooks come with interactive CD-ROMs to facilitate understanding of the subjects.

Digital Textbooks in Textbook Approval Systems

In countries with policies that require official approval of textbooks, the development and approval of E-textbooks will not be different from that of print textbooks. One of the purposes for requiring textbooks to be approved is to ensure that the content meets social norms. Placing an official statement of approval on the cover of the textbook means that government approves of the entire content of the textbook. This applies equally to all formats. For such countries, digital resources will probably need to be organized along the lines of textbooks and to provide enrichment of the textbook in a "blended" approach. Such an approach may be implemented with or without students being provided with devices on a one-to-one basis.

Although the digital terrain is full of challenges, perhaps the most difficult challenge of any ICT intervention is ensuring high-quality content. This applies whether the entire digital content is to be evaluated and approved in the same way as printed content, or whether students also have access to internet content.

Examples can be found in many countries of high-tech hardware delivering very "low-tech" content. The first step for many ministries of education worldwide has been to place their textbooks online in a basic PDF format. In Jordan's Education Reform for the Knowledge Economy, launched in 2008, the new electronic textbooks were merely e-PDFs with the normal functions of a PDF including search and note-making facilities. Starting in 2002, Malaysia's Education Blueprint at first made its textbooks available electronically over the Ministry of Education portal as a PDF that could be searched and annotated (Farhan 2014). For its second phase (2016–2020), Malaysia's MOE is producing interactive textbooks for selected subjects, containing audio-visual and animation (Rajaendram 2016). The Textbook Division has introduced innovations in teaching and learning materials by producing CD-ROM alongside the textbooks produced. The CD-ROMs include texts, graphic illustrations, animation, audio, video, interactive multimedia and interactive activities which include simulations, computer games and interactive assessment. The CD-ROMs are also equipped with electronic notebook known as e-journal as a communication tool. Besides ensuring the textbook packages produced are of high quality and concurrent with the curriculum, efforts have also been made to ensure the suitability for the target groups and able to achieve the teaching and learning objectives. Students are given the opportunity to use the CD-ROM in their Malay language, English language, as well as science and mathematics classes (Ministry of Education, Malaysia, n.d.).

Digital Content and Blended Learning

A myth that Mike Trucano did not address was that digital textbooks will replace traditional textbooks. In fact, many advocates for digital textbook interventions believe the following:

- That there will be cost savings, because printed books—which have relatively short lives—will no longer need to be purchased.

- That school bags will become lighter, thereby reducing the risks to children's health.
- That a fully integrated school-based and system-based learning and assessment system can be developed, providing a real-time picture of all students' progress.

However, all the evidence suggests that for most education systems—at least for the foreseeable future—digital resources will be used *alongside* traditional printed resources in what is often described as "blended learning." According to a recent review of schools' use of e-books in the United States, all insist that a blend of print and digital content is the current standard in classrooms and school libraries, and is likely to remain so for a long time (Maughan 2015). Initiatives that have attempted to replace the textbook have often created confusion. In *Where Have All the Textbooks Gone*, Tony Read referred to Jordan's experience of developing digital textbooks: "the e-materials developers perceive e-materials as a replacement for, rather than as supplementary to, existing textbooks and teaching and learning strategies, with which a majority of Jordanian teachers are familiar and comfortable." The result was that "There was no evidence of a detailed, well-coordinated needs analysis intended to provide an integrated approach to the development and provision of teaching and learning materials in both print and e-formats" (Read 2015, pp. 255–256).

In 2012, the ROK government decided to scale back its plan to switch entirely to digital teaching and learning. Students would instead use a mixture of digital and printed materials. Meanwhile the government is studying the social and health issues, as well as infrastructure and educational outcomes (Ki-Hwan 2014). A recent analysis found that 'the government's ambitious and speedy implementation plan has been criticized for its lack of systematic examination of its impact on classroom teaching and learning practice. It is still unclear how effective digital textbooks are in teaching which subjects in which grades and whether students' achievements, attitudes, and/or motivation are improved by digital textbook use (Jang 2016). As of 2018, implementation in the ROK continues to be delayed.

The 2009 paper by the Working Group on Textbooks and E-Learning Resources Development in Hong Kong, China, stated that textbooks still have their explicit values and will not be replaced by E-Learning resources in the years to come (Education Bureau, Hong Kong, China 2009, p. 19).

In a 2014 online survey in France of over 15,000 teachers across all school cycles, it was found that digital textbooks were better at providing content and much better at stimulating students' interests, but—perhaps surprisingly—they did not appear to provide much support in terms of individual learning, remediation or evaluation. While the majority of teachers saw the E-textbooks as essential, 85% saw the digital medium as an additional resource alongside the printed textbook (TNS Sofres 2014).

Blended learning is not simply question of making more resources available. In many countries where teachers are faced with large class sizes, reduced teaching time (perhaps due to double shift schooling) the combination of formats

places even greater demands on teachers' time in an environment where most teachers—and inspectors—believe that the entire textbook must be taught in order to "cover" the syllabus.

Supporting Teachers, Students, or Both?

Policymakers should consider who is the main intended beneficiary of the E-textbooks. **The ROK**'s Digital Textbook project is clearly aimed at students: The goal of the Digital Textbook project is to create a future-oriented learning environment that enables learner-centered learning anywhere and anytime. Once a textbook is approved in the ROK, the publisher must develop and provide the corresponding digital textbook within a year.

Hong Kong, China's e-learning pilot scheme, launched in 2010, has no explicit theoretical or pedagogical model. This stance is typical of the education reform initiatives in Hong Kong, China, and the overall aim of which was to support self-directed learning, with the following project objectives:

- to develop, try out, and evaluate when and how E-Learning works best to bring about effective interactive learning, self-directed learning, catering for learner diversity in different curriculum and school contexts in Hong Kong, China;
- to explore commercially viable business models for the development of E-Learning resources, in order to meet needs of schools, teachers and students through collaborative partnership between pilot schools and other sectors; and
- to help the Education Bureau chart the way forward for progressively wider use of E-Learning in schools (Education Bureau, Hong Kong, China 2009).

Hong Kong, China's strategy was to invite schools individually or in groups to submit proposals for how they would develop and use the resources. Successful schools received grants. Most schools or groups have information technology service providers and textbook publishers as business partners, as recommended by the Education Bureau.

With regard to publishers, Hong Kong, China's initiative found a low level of engagement from business partners due to the low profit margin and delays in the delivery of E-Learning technology tools (e.g., Learning Management System) or resources.

Japan's Consortium for Renovating Education of the Future project was launched in 2010 and is led by the University of Tokyo with funding from the Ministry of Education. The aim of the project is to convert more traditional, didactic teaching styles prevalent in Japanese classrooms to more future-oriented, collaborative, knowledge-constructive approaches. The old, experience-based concept of learning was didactic, a process involving those who know handing down the knowledge to those who do not know. The society requires a newer concept, which defines learning as a process rather than an outcome. Learning as a process has to be dynamic, practiced by each individual

differently from others, and progresses over time. “The teachers who are quick to grasp this shift tend to be more successful in our project. We do not know yet a sure method to support the slower teachers’ conceptual change” (Miyake 2013, p. 90).

The Consortium for Renovating Education of the Future project is characterized by a strong pedagogical underpinning.

The content of E-textbooks may be considered in terms of both teaching and learning:

- For the teacher: supporting traditional teaching with the addition of photos; animations; simulations; videos; audio; and other resources including Classroom Response Systems (classroom communication systems, or voting machines).
- For the student: highlighting, annotating, searching, bookmarking, referring, and editing

An example of the kind of functions that E-textbooks might usefully include can be found in a valuable 2015 study (Lin et al. 2015) of the attitudes of teachers in Taipei,China, which described itself as the first study to report findings regarding teacher perceptions of E-textbooks in Taipei,China. The researchers grouped their findings into three requirements:

- E-textbooks should be approved in the same way as print textbooks.
- E-textbooks should have not only textbook contents but also digitalized assessments or teaching materials such as assignments and academic records.
- E-textbooks should have multimedia presentation functions to help the students learn.

As support for teachers, textbooks may support whole class teaching, either by projection using an interactive white board (or smart board); or via individual devices. Whole-class teaching models of course reinforce traditional classroom dynamics, which as described can assist in the successful adoption by teachers of new technologies and content. Such models might be supported in classrooms where the infrastructure exists, by one-to-one learning in which each student has his or her own device.

One-to-one scenarios allow students to pursue their own learning from time to time within the traditional teacher-led classroom.

In the conclusion to the 2013 study *ICT-Enabled Innovation for Learning in Europe and Asia*, Kampylis, Law, and Punie (2013) state:

> One very encouraging finding from the discussion was the fact that a change of focus from technology to pedagogy has been observed among the stakeholders, particularly teachers and school leaders. This is the

most important professional learning that was found to be associated with enhanced student learning outcomes through the use of ICT.

Where substantial learning gains were observed, implementation always focused on the use of ICT to empower student learning and support learner-centric pedagogy that leverages learner interest and encourages self-directed learning and collaborative knowledge creation (Kampylis, Law, and Punie 2013, p. 123).

The Costs of Going Digital

Some policymakers are motivated by the potential cost savings of digital learning. However, in many countries where the authors have personal experience, policy-makers have not taken a sufficiently informed view of the potential costs and are sometimes seduced by the fact that digital textbooks and other books are often sold online at lower prices than the printed editions.

Countries that have adopted e-books in their education system have support at a federal level because the adoption of e-books in the classroom requires a tremendous amount of financial resources, training, and collaboration with many related organizations (Yang, in Kampylis et al. 2013, p. 133).

Investments in digital learning, contrary to some expectations, are unlikely even in the long run to save money. Digital learning, especially during the initial phase of investment, is costly.

The costs of investing in an effective, reliable, and sustainable digital strategy are high and must include (i) capital costs, (ii) annual recurrent operational costs, and (iii) infrastructural costs such as teacher training and teacher support costs. These costs must be covered before any investment is made in the learning content itself.

Developing digital content (that is, before the manufacturing stage) is more expensive than developing content for traditional textbooks. It includes extra copyright fees and expensive video content, as well as the costs of the extra technical skills required inside the publishing organization. One leading Japanese publisher estimated the cost of developing a series of four social studies textbooks at $100,000 (Murai 2015). This confirms other publishers' experiences. Even when manufacturing costs are included, depending on the number of copies of printed textbooks, and in some cases the number of licenses for digital textbooks, the overall extra cost of publishing digital content may be greater than the cost of printing a traditional printed book, especially in secondary schools where the numbers of printed textbooks are often much smaller and therefore the cost savings on printing are less. The only significant savings for a digital textbook are therefore in the cost of delivery.

The higher development costs can exclude many potential suppliers from taking part in potential calls for offers. In some economies (Hong Kong, China for example), the MOE entered into cost sharing with suppliers in order to kick-start

the development of digital textbooks. In 2012, the Hong Kong, China government budgeted 50 million Hong Kong dollars for the E-Textbook Market Development Scheme, to facilitate and encourage the participation of potential and aspiring E-textbook developers to develop a diverse range of E-textbooks in line with our local curricula. The intention was to undercut the textbook publishers, whose prices were seen as too high. (In Hong Kong, China, parents pay for textbooks.) Therefore, the Education Bureau designed the tender to appeal to other organizations and even individuals to submit materials. (The initial products were reportedly not of high quality. This cycle was similar to the appearance of the first generation of CD-ROMs in the 1990s: traditional publishers lacked the technology while the technology companies lacked the expertise to develop high-quality learning content.) The materials submitted by the providers had to be adaptable to various devices, including smart phones. Three years later the average price of the digital textbooks was 30% less than the printed editions. However, some digital editions were considerably more expensive (Yeung 2015).

Hong Kong, China has also seen the development of some Open Access (Creative Commons) E-textbooks, developed by the Open University of Hong Kong.

There is as yet no research on the relative impact of digital and printed textbooks.

In terms of digital resources, therefore, it is possible to identify three groups of policies:

- countries with a commitment to transforming classroom learning, with a more independent, self-directed role for the learner; for example, the ROK and Japan;
- countries where policy is more focused on supporting traditional teacher-centered pedagogy; and
- countries that have digitized the standard, printed versions of textbooks; for example, Bangladesh and India.

Implications

- Policymakers in countries where textbooks are developed or approved by government (therefore, all countries of Asia) should consider how digital content will be approved.
- In a classroom based on print textbooks, the teacher interprets the textbook for the students. If, however, the textbook provides much more stimulation than the teacher is able to provide, where will the student's attention be focused? The digital textbook will be a "frontal" format, although extension material for further self-study and assessment can be added.
- For several reasons, including the commercial and infrastructural, digital textbooks will not replace printed textbooks but will extend and complement the printed editions.
- One of the advantages identified for digital textbooks is the potential for frequent updating. How will approval processes address this?

APPENDIX 3: PRICES AND PRICE CONTROLS: AN OVERVIEW

Former Soviet Union (Central Asian Republics)

Most charge a rental fee. The textbooks are generally reused for 3–4 years. In the rest of the continent, there is little pattern, with a continuing strong tradition of parental purchase in some countries.

Hong Kong, China

The majority of parents buy their own textbooks. There is no price control and prices are a recurring issue. According to one publisher in Hong Kong, China, the competition element acts mainly on the number of ancillary components offered by the publisher, rather than on the core textbook prices.

Publishers can be required to maintain the price at the level at which the textbook was approved, or to increase it by an amount agreed in the original contract of approval.

Indian Subcontinent

India, Bangladesh, Pakistan, and Sri Lanka all provide textbooks free of charge for basic education (in government schools). In India, since the introduction of Sarva Shiksha Abhiyan ("Education for All") in 2008, all state education boards have provided textbooks free of charge to students in grades 1-8 (Abhiyan 2015, p. 29). The recent improvements in Bangladesh's distribution of textbooks for primary schools (grades 1-5) are due to annual multidonor primary sector support. However, all textbooks across the subcontinent are of low specification and are therefore resupplied on an annual basis.

Indonesia

The majority of parents are required to buy the textbooks.

Japan

The prices paid to publishers are fixed by the government (Hiroshi 2012). The textbooks are provided to schools free of charge, but schools pay for the teacher's guides themselves.

Malaysia

Since 2008, the country has operated a Textbook Loan Scheme, in which textbooks are free of charge to all students, with parents paying only when a textbook is lost (Ministry of Education, Malaysia, n.d.; Ministry of Education, Malaysia 2008)

Myanmar

The country has succeeded in providing free textbooks in basic education (including up to senior secondary) on an almost 1:1 basis. The Ministry of Education is currently considering introducing a small charge for lost books in primary schools (based on a deposit paid at the beginning of the year). In other lower-income countries such as the Lao People's Democratic Republic and Nepal, textbooks are in principle provided free of charge but depend on development partners to help achieve adequate ratios.

People's Republic of China

Having introduced free textbooks for rural communities in 2007–2008, when compulsory basic education was extended to nine grades, the PRC introduced free textbooks for all students in basic education in 2017 (Xinying 2015). The textbooks are loaned to students and are intended to be reused.

Republic of Korea

Prices of authorized and approved textbooks are determined by the publishers, but the MOE can in certain circumstances intervene to reduce prices (see Ministry of Education, Republic of Korea 2015, Article 33). In 2014, the government attempted to reduce textbook prices by 35%–45%: The ministry revised the Regulations on Curriculum Books ... so that the education minister can order price adjustments if they are deemed to have been unfairly set. In response, the publishers threatened to withhold their textbooks (Eun-ji 2014). The collapse of the country's second largest wholesale bookseller in 2017 was attributed to the new regulations concerning textbook prices (Min 2014).

Singapore

Families are required to buy textbooks from the market, although private sector organizations and nongovernment organizations contribute free textbooks for lower-income families. Prices form part of publishers' submissions of textbooks for evaluation, and their agreements with the MOE limit the possible price increases during the textbook approval period. As a result, according to a 2006 report, "While the Gross National Income per capita has increased about 300% from 1985 to 2003, the prices of textbooks have only gone up by about 70%" (Hoong 2006, p. 6).

Thailand

Textbooks are free to parents. Schools receive a subsidy to buy textbooks:

- Publishers are invited to bid.
- School should purchase most suitable textbooks at lowest price.
- Teacher selects textbooks with the approval of the school board (Jittidecharak 2012).

Thailand recently announced that from 2018 there will be a new policy of lending textbooks free of charge, but workbooks will still be given annually, which students can write in.

Viet Nam

Parents currently pay for textbooks, but the government provides free textbooks for all ethnic minority students and those in especially disadvantaged communes under Program 135 for Socio-economic Development for especially disadvantaged ethnic minority, mountainous, border, remote, and isolated communes. Under this program, localities buy textbooks from provincial books and educational equipment companies, to supply to target students. The total number of distributed and sold textbooks equal 20% and 80%, respectively.

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Textbook Policies in Asia

Development, Publishing, Printing, Distribution, and Future Implications

This comparative report provides an overview of the textbook chain, starting with its origins in the curriculum, and suggests ways in which policymakers can make improvements at every point in the chain. With evidence from a range of countries, mainly in Asia, the report is intended as a resource for policymakers and as a reference and benchmark for education systems. Although the report focuses on textbooks, which are the priority for governments and teachers and which represent the greatest item of expenditure on teaching and learning materials, it also includes other teaching and learning materials, including digital resources.

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