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Producing Textbooks in Developing Countries

Ministries of education need to rethink their heavy involvement in publishing textbooks. A call for more competition

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Half the world's children typically sit in classrooms sharing only one book among the entire class, learning by rote, or copying, probably inaccurately, old and often inappropriate texts written on a blackboard by an underpaid, undereducated teacher. These are the children of the developing world, in countries facing difficult economic choices and under severe financial constraints. The absence of textbooks is a major handicap that will not only affect these children but also the development prospects of their countries. The evidence is now clear that textbook availability is one of the most consistent predictors of academic achievement among students in developing nations. Levels of available reading materials strongly determine the kind of educational experience a nation is able to provide for its children and youth.

Many developing countries could improve their educational systems by changing the way their ministries of education procure and produce textbooks. Governments could allow more competition in textbook publishing and use the savings in total expenditures for textbook production to increase the number and quality of textbooks and teaching materials. In some countries, however, reduction of costs would not supplant the need for additional resources.

Background

In the past few decades, there has been a significant expansion of formal schooling in developing countries. Maintaining these new facilities is very expensive. Typically, education accounts for approximately 12 percent of public recurrent expenditures, but often is as high as 30 percent. While primary school teaching staff in most developing countries has quadrupled since 1960, two out of three poor nations have had to reduce educational

See also Textbooks in the Developing World edited by Joseph P. Farrell and Stephen P. Heyneman, World Bank, 1989, \$18.95.

spending. Reductions have fallen most heavily on nonsalary items such as chalk, maps, furniture, equipment, and textbooks. Such expenditures in primary education represented about 4 percent of recurrent educational expenditures in Africa and about 9 percent in Asia, compared to approximately 14 percent in members of the Organization for Economic Cooperation and Development in the 1970s. These expenditures were squeezed even further in the 1980s. In the early 1980s, Bolivia spent only \$0.80 per year on nonsalary inputs for each of its primary school students; Malawi spent \$1.24; Indonesia \$2.24; Brazil and Thailand \$4.00; Mexico \$5.64; and Algeria \$8.96. These compared to \$300 spent in Sweden and other Nordic countries.

Countries that spend about \$1.00 (or less) per student on nonsalary expenditures, which have to include classroom materials, are at the lowest level in the quality of education. At this level, there is likely to be only one book per class—with students reproducing texts and notes into their notebooks, from which they study for their examinations. This yields rote memorization of simplistic information, often with large gaps in logic, out-of-date facts and interpretations, and little explanation of texts. This is the basic method of education in many of the poorest countries.

Educational systems that spend about \$3.00 per student provide a significantly broader and more effective educational experience. They are usually able to afford one book per child per year for each subject. China is a good illustration. Every year each child in China buys a new book for each subject. The price to the student is relatively low—15 cents each. But the books in question are often manufactured poorly and filled with mistakes (e.g., maps show countries and names in the wrong place; figures or drawings are barely legible).

Where countries are able to spend \$40 per child on nonsalary expenditures, as is the

case in Malaysia, they can provide half a dozen titles in every subject—with books at different reading levels. In this case, the teacher becomes an organizer and manager of information instead of merely an explainer of facts. Students with special skills and problems can be identified and reading materials chosen accordingly. This approach entails a significant revolution in teacher preparation and in expectations about what teachers should do. Although considerably more expensive, it produces better-prepared students.

By contrast, many OECD countries spend about \$300 per child per year on nonsalary materials alone. In US elementary schools, for example, the amount spent on supplementary reading materials has increased by 40 percent during the 1980s and is now about \$171 per child per year. In Japan, Norway, and Sweden there are more than 15 titles of supplementary readers available per subject. Teachers do not teach from a single textbook any more, nor even from several textbooks. They present information from photocopied materials designed for specific lesson plans, or from film strips and computer programs. All of this yields much self-generated learning; students are expected to research information themselves.

Developing nations unable to provide adequate numbers of textbooks are likely to see a further decline in already low levels of educational achievement among their schoolchildren. To ameliorate this situation, countries will have to find resources from within the education sector or from other sectors. Authorities will have to find ways to produce and distribute more textbooks and related materials for the same or at a lower cost. This may involve different techniques: using competitive (sometimes international) suppliers rather than public monopolies; narrowing the range of subject matter; finding new ways of financing the production of reading materials; and altering the "quality" standard for

texts (for example, using fewer colors, lighter paper, and fewer illustrations). It requires a complete reorganization of the way textbooks are published and manufactured in developing countries.

Textbook production

The textbook production process consists of three basic, consecutive actions: the design of pedagogic or teaching materials, their manufacturing (printing), and their distribution.

Design. It is reasonable to expect that a government would wish to maintain control of textbook content to see that it is consistent with curricular objectives. But the content can be designed in many different ways: as a regular civil service function of the ministry of education, or by the publishing industry. In the latter case, content specifications can be established by ministries of education, while the actual design (how many chapters? which visual aids? how strong a cover? what reading level? etc.) can be decided on the basis of competitive bids by private firms. The process can also include both elements (as in Turkey) with some books being designed on the basis of competitive bidding, while others continue to be designed within the ministry of education. Ministries of education in Malaysia and Mexico began by designing all their textbooks in-house, but shifted to external publishers in part to facilitate the development of local publishing industries. Today their competitive bidding extends to international firms too. The result is often lower overall costs and better quality than totally in-house design. An argument against this is that in many countries there is not enough local publishing capacity. But that capacity can be developed only if a shift in policy occurs in the ministry of education.

Printing. Sometimes, ministries of education also manufacture their textbooks in-house, to preserve jobs or simply to increase the use of their installed printing equipment. A government printer may charge an artificially subsidized price to the ministry of education, but this does not mean that the job will be less expensive in real terms for the public sector than one done by a private printer.

Distribution. It is not necessarily desirable or financially advantageous for a government to distribute printed materials through its own civil servants, transport, and specialized storage facilities. There may be less costly and more efficient alternatives. Admittedly, books may be more difficult to distribute than some products; however, if soap and matches get efficiently distributed to rural areas through private companies, it may be possible to distribute textbooks through

similar mechanisms.

Factors affecting choice

Three economic factors need to be weighed in deciding whether it is better for the ministry of education or private companies to design, manufacture, and distribute textbooks. First is the size of readership. Indonesia, for example, has more children in school than the United States and Canada combined. In Sierra Leone, on the other hand, the size of the readership is small. In general, the larger the readership, the more likely that a viable local textbook industry can develop.

The second factor is the language used. The more international the language, the more likely that there will be relevant materials already available. For subjects taught in Spanish, Portuguese, English, or French, a variety of texts exist on the international market. For a local language or languages, a government may have to develop the materials itself, involving some cost. Similarly, the more international a subject (e.g., arithmetic versus national history) the more competitive textbook production would be and the less expensive it will be to develop such materials.

The third factor is the level of curriculum specialization. If books on university level physics, geography, or natural sciences are being developed, a ministry of education will have to invest in materials of good visual quality. Often, it is feasible to mix the contents: a ministry of education may mix its own textual material with imported high-quality visuals that already exist, thus avoiding the cost of duplicating. The key element today is the development of new graphics and printing technologies. It is a relatively simple task for even low-income countries to sponsor the production of educational materials using designs drawn from widely divergent sources. It is no longer a question of simply selecting between local and foreign materials.

Textbook protection

Countries often try to protect the design, manufacturing, and distribution of local textbook industries from foreign competition. Several reasons are given to justify these policies (and the costs they impose on society as a whole). One reason is national interest. Textbooks must be manufactured locally to preserve a strong national identity. Another reason is the protection of local employment. The grace period required for the development of strong local capacity is yet another reason. The problem is that such "infant" industries end up being protected for years; in the case of educational materials, often for 25–30 years.

Protection is also seen as saving foreign exchange. But local production raises other problems. Foreign exchange is still usually required to import paper and maintain printing presses. When foreign exchange is scarce, the presses may stop running for lack of materials or spare parts, with the result that textbooks are not produced. Whether foreign or local manufacturing requires more foreign exchange is a matter of debate. Regulations must be examined carefully to see if protective measures will actually save on foreign exchange.

Conclusion

By and large, all countries seek the same goal: to provide high quality education to all children, at the least cost. In developing countries, public finances are low, and resources cannot easily be found by reductions from other sectors. Ministries of education must save money without jeopardizing their objectives. They cannot expect to provide all educational services themselves, in-house, and free of private cost.

Changing the textbook production process does not have to affect standard educational goals nor result in books of lesser quality, or whose aims are not consonant with national goals. Neither are changes in the production process an ideological matter. It is a question of good management. The responsibility of the education ministry is to manage the sector well, and to set political orientations aside in attaining that objective.

Further, it is not necessarily true that removing protection from textbook production in developing countries will benefit publishers in developed countries. Companies in Colombia, India, Mexico, and Nigeria now export textbooks and textbook technology. Changing production processes will likely benefit publishing industries in developing countries because they enhance competition. By tapping local talent for writing, printing, publishing, and distributing textbooks in their countries, ministries of education can encourage exports to other countries. But other countries will not become a market unless they too have been reconsidering their production process and open their textbook market to international competition.

In the final analysis, the yawning gap between the demand and supply of quality textbooks makes it imperative to alter approaches to their production in developing countries. By the year 2000, about 80 percent of the global school population or some 626 million children will be enrolled in schools in the developing world. These numbers provide a strong incentive to educational policymakers to change their views on textbook production in developing countries. ■