

8. Teaching Materials

(a) Why Costs are High

All subjects, of course, need some teaching materials — textbooks, exercise books, chalk, wall charts, etc.. But practical subjects generally need more materials than other subjects. For example:

- *Home Economics* requires food, cleaning materials and water;
- *Needlework / Tailoring* requires cloth, thread and needles;
- *Horticulture* requires seeds, fertilisers and sacks;
- *Animal Husbandry* requires young animals and food;
- *Secretarial Studies* require typing and carbon paper, computer disks and general stationery;
- *Automechanics* requires spare parts, grease and fuel;
- *Metalwork* requires the basic metals, solder, etc.; and
- *Woodwork* requires the basic woods, varnishes, glues, etc..

An extra cost in all cases arises from transportation. This is particularly serious for small and remote schools.

The usual methods for obtaining materials are outlined in the following checklist:

Method	Requirements
a. Private suppliers select and import educational equipment and distribute it to schools through their own channels.	Adequate foreign exchange and unrestricted import; substantial funds under the control of/allocated to schools.
b. Private suppliers arrange for some local manufacture and only import items that cannot be made locally.	Adequate foreign exchange and an equipment-oriented local manufacturing industry. Equipment funds for individual schools.

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| c. Selected small-scale private industry is able to design and manufacture according to specifications, and distributes to local schools. | A well-developed local small-scale industry with a good distribution network. Equipment funds for individual schools. |
| d. Design, manufacture and distribution is managed by the Ministry of Education with assistance from local or foreign industries. | A government-operated equipment and materials centre with designers, technicians, and storage/packing facilities. |
| e. Low-cost teaching aids are made by the teachers and students. | Design and manufacturing instructions; tools, facilities and time; enough funds at the school level; incentives. |
| f. Materials are supplied by foreign aid schemes. | Storage and distribution system; method for selecting recipient schools within the system. |

(b) How Costs can be Reduced

The two main ways to reduce costs are by (i) bulk purchase, and (ii) use of local materials.

(i) Bulk Purchase

In some systems, the government arranges bulk purchase and distribution. Sometimes this effects dramatic savings. In Jamaica, for example, a ream of paper normally costing \$45.00 through a retailer can be obtained from the Central Purchasing Agency for just \$18.00.

Other countries have no such government-organised systems; but schools can take their own initiative to group together and make bulk orders. In this way, they obtain discounts from larger orders, and reduce the costs of transportation.

Bulk purchasing has disadvantages as well as advantages, however. The situation may be summarised as follows:

Advantages of Bulk Purchasing:

- It offers opportunities for considerable savings, particularly if

Costs of Materials: A Comparison of Different Subjects

One school in Jamaica has analysed the costs of materials for each student in each subject. The table below summarises its findings for students in Grade 10 and in the Vocational 1 stream. It shows a wide variation, with physics and electricity as the most expensive, and general class subjects as the least expensive.

Subject	Annual Cost of Materials per Student (US\$)
Physics	25.20
Electricity	25.20
Machine Shop	21.40
Home Economics	20.00
Automechanics	16.60
Building	15.00
Engineering	15.00
Carpentry & Joinery	15.00
Nutrition & Cookery	10.00
Dressmaking & Needlework	10.00
Commercial Practice	7.60
Art & Craft	4.60
Chemistry	4.40
Business Studies	4.00
Typewriting	3.60
Biology	3.00
General Class Subjects	3.00

competitive tendering/bidding is provided for.

- It facilitates standardisation of equipment among schools.
- It requires administrators to think ahead.

Disadvantages of Bulk Purchasing:

- It cannot be implemented in emergency situations.
- It is sometimes associated with delays in delivery, especially when

orders are from overseas.

- It is likely to require substantial storage facilities and personnel to monitor stock movements etc..

(ii) Use of Local Materials

Materials produced within the country are usually cheaper than imported ones; and sometimes schools can obtain very cheap materials from their own neighbourhoods. For example:

- Scrap merchants may have spare parts for automechanics and metals for metalwork;
- Sawmills can supply off-cuts for woodwork and for fuel in domestic science;
- Builders' yards can supply bricks and cement;
- Pottery-makers can supply glazing materials and mica, and
- Printers can supply coloured cards and paper.

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* Purchase of Locally-Available Materials
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* A great many useful materials for practical subjects can be
* purchased locally at low cost. They include:
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* Aluminium sheets   Mosquito mesh       Sandpaper
* Ball-bearings     Nails and tacks      Screws
* Balloons         Needles             Sealing wax
* Bicycle inner tube Nylon fishing line   Staples
* Bicycle spokes   Paint brushes       Steel wool
* Candles          Paper clips         Straws
* Cardboard        Paper or plastic cups String
* Clothes pegs     Pipe cleaners       Thick wire
* Curtain rings    Plastic bags        Thin wire
* Electrical wiring Plastic sheets      Tin plate
* Electronic parts Plastic tape        Thread
* Hooks            Plastic tubing     Various glues
* Marbles         Polystyrene foam    Wooden beads
* Metal tubing    Razor blades       Wooden dowelling
* Metal foil      Rubber bands       Wooden sticks
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