Appropriate teaching aids

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When health workers from a developing country visit a national or international "centre of excellence," they may feel frustrated rather than helped. They realise that they have no access to high technology books, journals, films, and slides, or to the new ideas on how to use them. This discovery may prompt doubts about their ability to do their work in the absence of such props. Some are tempted to abandon their posts altogether and look for a solution in academic activity. This happens so often that there is a steady drain of skilled people from the health service periphery to the centre—regionally, nationally, and internationally. This flow needs to be reversed, and those who work at the centres should share their knowledge and resources with those who work in the periphery. Relevant, practical, up to date and inexpensive books and other teaching materials need to reach district training schools and community health workers. In addition, it is essential to ensure that people know how to use them.

Appropriate teaching materials

The teaching materials that are needed include books, newsletters, films, flannelgraphs, and colour slides. Of these, books are the most important because they are durable and require no equipment to use. Western medical books adopt a theoretical or systematic approach, and use technical and grammatically complex academic language. Any practical instructions that they include are frequently incomplete and may be difficult to extract. Primary health care workers with limited secondary education, who use English only as a second language, may find such books impossible to read. Thus there is a need for appropriate health training books, which was first recognised in the late 1960s.¹ Nevertheless, it was not until the early 1970s that Cripwell and colleagues worked out in detail what syntax second language English speakers could and could not understand easily.² Recent publications have extended their techniques and the information is presented in simple language with short, active sentences, and limited vocabulary.³ A page of solid print may be daunting so it is advisable to break it up with lists, slogans, titled paragraphs, and illustrations, which may improve understanding and are often remembered long after the text is forgotten. Both these features are shown in two recent books by David Werner.^{4 5}

Cost is a major consideration, but if a book is subsidised at publication the cost to the reader may be kept down to about £2 (0.5p to 1p per page), and experience has shown that peripheral health workers buy books that are made available to them at this price.⁶⁻⁸ Import and currency restrictions may limit the availability of books—local reprinting may help to overcome this. Organisations that distribute books at low cost include TALC (Teaching Aids at Low Cost), and the Voluntary Health Association of India.

NEWSLETTERS

Short, simply produced newsletters may provide up to date information and continuing education. They have the advantages of providing information in small doses, and they are easy to

read and very helpful for isolated health workers who may not be able to obtain or afford up to date books. Several newsletters are sent free anywhere in the world to anyone who sends in their address and a request—for example, *Diarrhoea Dialogue*.⁹ Locally produced journals, such as *Afya* in Kenya, and *Bwino* in Zambia, help to fill local needs, and even more locally based duplicated newsletters, such as *Shasta Barta*, for a community health programme in Bangladesh, help to keep isolated health workers in touch with others in their own programme.¹⁰

LOCALLY PRODUCED BOOKS

Locally produced books are needed to overcome cultural barriers as well as trade restrictions. Books that are written in another country may not be appropriate for local needs. Isolated health care workers need straightforward texts that are written in the local language, with simple illustrations that include people with local facial features, clothing, and implements. Books produced internationally are more likely to be useful as reference works for translation and adaptation. An example of what may be achieved is provided by a community health programme in Guinea Bissau that trains completely illiterate village health workers. They have achieved this by producing very simple pictorial training materials and by using picture symbols instead of words, both for training and to label containers of medicine.¹¹ Many other valuable training ideas are included in *Helping Health Workers Learn*.⁵ To take an example, simple symbols cut out of cardboard may be used to teach village health workers the use of antibiotics. The authors found that after two days' playing with these symbols village health workers understood the use of antibiotics better than some doctors.

SLIDES

Colour slides are extremely popular with health workers, because they may short circuit the struggle to describe things in words, and show exactly what the teacher means. They are, however, suited only to students who have had some secondary education. Slides have several advantages over films. They are cheaper, and require simpler projectors, and they are more flexible, because the teacher may select and arrange the material to suit his or her own lecture and to go at his or her own speed. Slides may be used with a prepared tape, but they are probably best used with a printed text. The teacher should use the text as a guide and source of ideas, rather than as a set lecture. TALC has been particularly successful in developing and distributing sets of slides, on over 60 topics. The material is supplied at minimal cost: 24 slides together with a detailed text and teaching guide and a small plastic viewer, and including postage and packing, all cost less than half the price of a new colour film.

FILMS

Although films are popular as entertainment, many teachers have become disillusioned with them as teaching aids. They are expensive, and each copy may be used only about 30 times. They aim at a wide audience, so that they may not be locally relevant, and the teacher cannot control the speed of delivery. It is difficult and expensive to maintain a film projector in a

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hot, dusty climate, and in some rural areas annual maintenance may cost as much as the original equipment. Video productions may eventually replace films because the cost of production and of duplication is much less.

FLANNELGRAPHS

Flannelgraphs have proved useful for teaching health workers about growth charts and for putting over simple messages in the villages. TALC distributes a growth chart kit, which includes a yellow flannel background chart, and a moveable calendar of months, dots, and labels to put on to the background. To teach health workers to fill them in, you need cheap duplicated paper growth charts for each student. A precut stencil to help you to prepare these is included in the kit. To aid interpretation, you need either slides, or a flannelgraph, or both. You cannot satisfactorily draw a growth chart on the blackboard. Flannelgraphs are also useful for health education of the public. You can build up a story on a flannel board, using pictures which have either cloth or sandpaper on the back. The pictures must show local objects as far as possible. For this reason, these materials often need to be locally produced. A flannelgraph for teaching child health and nutrition has been widely used in west Africa, and to this has now been added a flannelgraph on helminths. Both of these are designed for use at village level.¹² Another important health education medium is drama, whether acted by people, as in Nigeria,¹³ or by puppets, such as the "wayang kulit" of Indonesia.

The future

During the past 20 years there have been great developments in our ideas about health, and these are matched by similar developments in ideas about education. Bringing health workers in from remote stations to somewhere more central for refresher training is expensive and has the effect of reducing what may already be a limited peripheral health service. Thus few courses

are arranged, and, when they are, they include senior rather than junior workers. A distance learning programme (working on the principle of the Open University in the United Kingdom) could train the whole health team and provide a continuing training programme for health workers who have had practical experience of the problems that they are expected to deal with and need some feedback. Above all, distance learning is a way to get ideas about how to improve health outside academic institutions and in the community.

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- 4 Werner D. *Where there is no doctor*. Palo Alto, California: The Hesperian Foundation, 1977.
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- 10 Schweiger M. *A community worker's newsletter*. TALC slide set, 1984.
- 11 Chabot J. *A community health project in Africa*. TALC slide set, 1984.
- 12 Gordon G, Gordon S. *Nutrition and child health flannelgraph*. Available from TALC, 1982.
- 13 Hilton D. "Tell us a story": health teaching in Nigeria. In: Morley D, Rohde J, Williams G, eds. *Practising health for all*. Oxford: Oxford University Press, 1983.

Organisations mentioned in the text

TALC, Teaching Aids at Low Cost, Administrator: Mrs B Harvey, Box 49, St Albans AL1 4AX, UK.

VHAI, Voluntary Health Association of India, C-14 Community Centre, Safdarjung Development Area, New Delhi 110016, India.

AMREF, African Medical and Research Foundation, Box 30125, Nairobi, Kenya.

The Hesperian Foundation, Box 1692, Palo Alto, CA 94302, USA.

AHRTAG, Appropriate Health Resources Technology Action Group, 85 Marylebone High Street, London W1M 3DE, UK.

Are the concentrations of gastrointestinal hormones, especially gastrin and vasoactive intestinal polypeptide, affected by drugs other than H₂ receptor antagonists?

Gastrin, the hormone made in the antrum of the stomach whose main role is to stimulate acid secretion from the fundus of the stomach, is released when the pH of the gastric content rises above about 3 or when the local nerves are stimulated—for example, by gastric distension. Thus gastrin release is probably stimulated by any agent that prevents secretion of or neutralises gastric acid and this therefore includes atropine like drugs, all the antacids, and the newer acid inhibitory agents such as omeprazole, and the H₂ receptor antagonists. Strictly speaking, vasoactive intestinal polypeptide is not a gastrointestinal hormone as it is found only as a neurotransmitter in the nerves of the gastrointestinal tract and indeed many other organs of the body. A small amount escapes into the circulation but the concentrations are never high enough to be biologically important (except rarely when produced by a tumour resulting in the watery diarrhoea syndrome).

There are no drugs that are recognised as causing a biologically significant rise in circulating vasoactive intestinal polypeptide levels. The duodenal hormone secretin is released by acid, thus drugs that inhibit gastric acid secretion result in lower levels of secretin. The pancreatic hormone, pancreatic polypeptide, is under important vagal tonic control, and its release is therefore stimulated by cholinergic drugs and strongly inhibited by anticholinergic drugs such as atropine. Its release is also greatly inhibited by opiates and also codeine phosphate. Since pancreatic polypeptide does not seem to have an important physiological role, there seems to be no consequence of altering its release. The influence of drugs on the remaining gastrointestinal hormones—namely, motilin, gastric inhibitory peptide,

neurotensin, peptide YY, somatostatin, and enteroglucagon—have not been studied sufficiently for any sensible comment to be made at present.—S R BLOOM, professor of endocrinology, London.

What are the hazards of asbestos ironing boards and the asbestos "string" sold in hardware shops for insulation? Is the sale of such asbestos items legal?

The hazards of domestic asbestos products, as of asbestos used in industry, differ according to the type. "Blue" asbestos may cause mesothelioma or asbestosis. White asbestos may cause asbestosis. These effects seem to be dose related. Lung cancer can be a complication of asbestosis, particularly in smokers. Very small amounts of blue asbestos are unlikely to cause asbestosis and even then it will probably be mild. Small amounts are unlikely to cause mesothelioma but the outcome is invariably fatal. That is why the use of blue asbestos is rightly banned. Very small doses of white asbestos are extremely unlikely to cause asbestosis. Properly used, white asbestos has not caused detectable excess mortality.¹ Nevertheless, continually fraying ironing boards and strings of white asbestos are a potential hazard and should be avoided. If they are covered and sealed down so that asbestos does not escape they present no hazard and are there to protect from the very real hazard of fire. The use and importation of blue asbestos are prohibited by the Health and Safety Executive. The sale of asbestos goods in shops is not prohibited, but articles containing asbestos must be clearly labelled.—W R LEE, professor of occupational health, Manchester.

¹ Berry G, Newhouse ML. Mortality of workers manufacturing friction materials using asbestos. *Br J Ind Med* 1983;40:1-7.