

Pedagogic Evaluation of a 'Self-instructional' Material in Medicine

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Self-instructional Material (SIM) is the mainstay of distance education in any situation. However, the pedagogic effectiveness of it must be ensured before it is supplied to learners. This becomes absolutely imperative in a discipline like Medicine where human lives are involved. Tejinder Singh presents here one of the ways of evaluating SIM in medicine. His findings should encourage those who are involved in the developmental testing and evaluation of SIMs, not only in the field of Medicine but also in other disciplines too.

INTRODUCTION

Continuing education has a very vital link with the quality of health services available in a country¹. Notwithstanding the quality of planning that is done at the top, many health programmes fail to give the desired result because the people at the implementation level cannot translate them into practice. Unless the physician working at the primary health centre is able to learn and find ways of putting them to use, new programmes, approaches and techniques become useless. In today's world, where medical knowledge doubles every five years or so, continuing education assumes special significance.

Continuing education aims to stimulate and promote learning. The learning process needs to continue after basic training not only for updating the technical knowledge but also to support and motivate the health worker at the peripheral level.

A variety of approaches² have been proposed for imparting continuing education. A few begin at the top and percolate down to various levels by training programmes. Others generate at the local level and aim at lateral spread. In both the strategies, the message tends to get diluted and distorted and maintenance of programmes becomes extremely difficult. Time, finances, distances and other resources hinder a vast majority of learners to gain any meaningful advantage from such attitudes.

Distance learning³ provides an alternative channel to overcome many of these limitations. Learner autonomy not only makes them acceptable but at the same time its cost effectiveness makes continuation of a programme extremely easy.

With this background, an attempt was made to evaluate pedagogic effectiveness of a self-instructional material (SIM) in medicine so that recommendations regarding their utility for continuing medical education can be made.

MATERIAL AND METHODS

a) **Content area:** Immunisation was chosen as the

representative area. This was done because of its prime importance in reducing infant mortality and the fact that despite its importance, the logistic aspects of immunisation are not given adequate weightage in MBBS curriculum. The entire contents were divided into five hypothetical units, out of which one was actually prepared.

b) **Target audience:** The material was primarily aimed at the medical officers working at the primary health centre level. However, to increase coverage, it was ensured that too many technicalities donot creep in and even paramedical workers having working knowledge of English could benefit from it.

The following objectives were sought to be attained by the learners:

- Enumerate composition and storage conditions of different vaccines.
- Describe maintenance of cold chain.
- Recall National immunisation schedule.
- Enumerate doses and side effects of different vaccines.

c) **Evaluation of the material:** Although the material was targeted for medical officers, it was tested on 20 third year medical students. This was done to eliminate the influence of working conditions, government circulars and discussion with peers. Third year medical students, on the other hand, provided a 'virgin' population in whom learning could be directly attributed to SIM.

Before they were given the material, the learners were given a pre-test. This was in the form of a story (appendix I) of an immunisation clinic in which 10 mistakes had been deliberately built in. The learners were graded depending on the number of mistakes they identified.

The SIM was now given to the learners for a period of 7 days during which they were requested to go through the material and comprehend it. Self check exercises were provided to facilitate learning. At the end of this period, the test was readministered to them and scores calculated.

RESULTS

The mean scores at pre-test and post-test were 1.20 ± 0.76 and 9.0 ± 0.55 respectively. The difference is statistically highly significant ($p < 0.01$).

DISCUSSION

The present study was an attempt to evaluate the pedagogic efficacy of a SIM on immunisation. The material was prepared keeping in mind all guidelines for such material⁴. The material was found to be highly effective in imparting knowledge.

Because of financial limitations, the material had to be cyclostyled. The lay-out and diagrammatic representations etc. also could not be put across in a satisfactory manner. However, the pedagogic utility was proved.

As already discussed, SIMs can provide an effective and efficient channel for continuing education. Till now, hardly any SIM related to medicine is available. If we produce SIMs on common problems, specially those which are not adequately covered during formal teaching and on newer approaches, it should be possible to fill this void. Updated knowledge and skills of physicians would mean a better output, in spite of limited resources, and in the long run, a better health status of our population.

APPENDIX

Format of test used for Learner evaluation

You are the medical officer incharge of a Primary Health Centre and are not happy with the quality of immunisation services provided at your centre. You seek the help of a friend, who gives you a secret capsule that will make you invisible. One day, you take the capsule and decide to note each and every action of your health workers, Maya and Geeta, without their being aware of it. Here is what

you see.....

Maya arrives at 8 a.m and Geeta shortly afterwards. After greeting each other, they sit down to work. Maya opens the fridge removes a vial of polio vaccine from the freezer. Geeta tells her that fresh stock of vaccines will be arriving today and Immunisation Officer also might visit the centre. To make room for the fresh stock, she arranges all vaccines a little behind so that the new ones can be accommodated. It is becoming warmer now—Maya takes out a cold water bottle and as she takes a sip of water, she tells Geeta that they must store more water for people who will be bringing the vaccines. She fills up a jug and places it on the top shelf. To make it accessible, she places the vials of DPT in the chiller tray so that they stay cold.

By now, a large number of mothers have gathered for immunisation of their babies. Finding it difficult to read the markings on the syringe, Maya pulls her table, on which vaccines have been placed near the window so that she can correctly fill the syringe. The tempo of work fast builds up — and it is with precision that she gives 1cc DPT and 5 drops of polio vaccine to each baby. There is however, an unusual rush today and even after exceeding an hour of the specified timing, 2 patients are still left to be attended.

After administering the polio vaccine to all the babies, both wait impatiently for the supplies which have not yet arrived. Finally the van comes two hours late. Geeta tells Maya that it is too late today to arrange the vaccines properly in the fridge but if they leave them out, the vaccines will be spoiled. Maya agrees saying that they must keep the vaccines inside the fridge. As they are about to open the door, power supply fails. Quickly, they remove some water bottles, keep the vaccines in door compartment and close the fridge.

A lot of things need to be improved, if the vaccines are to be used effectively, you tell yourself.

Can you enumerate the things that need to be improved?

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