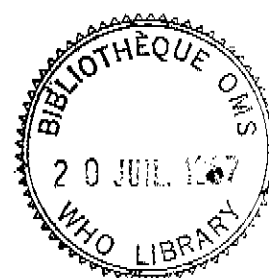


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# THE ROAD TO RELEVANCE:

Integrating learning by objectives  
with relevance  
to health needs of the community

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## P R E F A C E

This document is directed towards teachers of health personnel interested in the concept of "learning by objectives". It is designed to promote an understanding of the appropriate use of this concept, by examining its historical evolution in the light of thirty years' experience of its use. The text describes the way in which it has been used, and misused, in the past.

The text will also be of particular interest to students, since it demonstrates how they can be involved in the organization of their own learning.

It is hoped that this review will help both teachers and learners to clarify their thoughts on the application of the concept of learning by objectives, making their teaching and their learning more effective and relevant to health care for the community. This concern for relevance is directly in line with the strategies of the World Health Organization for the achievement of health for all.

### Introducing learning objectives

The use of learning objectives is an important part of the educational process, enabling learners to be quite clear about the goals they are aiming to achieve. What we must be equally sure about is that they are aiming at the right goals. The goals are wrong if they are not directly related to the health needs of the community which the students will serve when they graduate.

#### 1. What are learning objectives?

First of all, learning objectives are not an end in themselves.

They are tools, the means to achieve an end. In the case of health science students, this end is the maintenance or improvement of the health of the community by means of improving the education of health personnel. It also means making sure that educational programmes for health personnel are directly related to the needs of the health system.

Second, "irrelevant" objectives are worse than no objectives at all. We could even say that some learning objectives may have a negative effect on our health.<sup>(1)</sup>

Educational objectives, as generally described in the literature, can be criticized on two points; not only for the way in which they are expressed but, more seriously, for their lack of relevance to the health needs of the community. Even if those objectives may have been articulated clearly and precisely, they might still aim at goals which have little relevance to the actual health situation.

The concept of learning by objectives has been around for more than thirty years. Some teachers may cite it in the name of a "revival" in education whilst continuing to apply the same old methods and practices in their teaching. Learning objectives used in this way have done nothing more than perpetuate the development or continued existence of educational and training programmes which have little relevance to community health problems.

It is a waste of time and energy to define educational objectives without including the essential element of relevancy. It is fundamental that educational objectives take relevance into account if they are to help solve health problems or meet the demands of health services.

Failure to set appropriate and relevant objectives has given learning objectives a bad name. As a result, a valuable educational tool is in danger of being discarded. Not because it is ill-conceived, but because of the way it is used by teachers, some of whom are ill-prepared for their task as educators. Teachers must first be introduced to the concept of learning by objectives and trained to apply it in a learning situation.

So let us now look at the application of educational objectives, instead of focusing only on the concept. The application of educational objectives as an approach to curriculum development and the teaching/learning process is straightforward and easy to understand. What is needed is a clear understanding of how the concept of learning by objectives can be used in the teaching/learning process and in formulating educational objectives directly related to community health needs.

2. What kinds of educational objectives are there?

An educational or learning objective is essentially learner-oriented. The expression "Educational objectives" is often used in conjunction with additional adjectives such as :

- (1) institutional or general
- (2) intermediate or departmental
- (3) specific instructional or terminal
- (4) psychomotor or sensorimotor (related to practical skills or manual dexterity)
- (5) intellectual, cognitive, or contributory
- (6) affective, attitudinal, behavioural, or relational
- (7) theoretical
- (8) practical
- (10) cultural



A community-oriented and learner-oriented education system helps students to develop the competencies they need to respond to the health needs of the community

These differences in terminology may confuse the best intentioned teachers. Since we are concerned here with a community-oriented and learner-oriented system, the most appropriate terms are those which describe the competencies required of students or graduates to respond to the health needs of the community.

### 3. What are the different levels of educational objectives?

There are different levels of objectives, ranging from the most general to the most specific. They should be related to the ultimate goal of providing appropriately trained and competent health professionals, who are aware of the health situation in the community where they will work and capable of dealing effectively with its problems.

Table 1. Levels of Objectives

Level	Term used in education	Term describing a professional action
The most general level	General learning objectives	Professional <u>functions</u>
Intermediate level	Intermediate learning objectives	Professional <u>activities</u>
The most specific level	Specific learning objectives	Professional <u>tasks</u>

In order to understand the different levels of objectives and their use in the teaching/learning process, let us look at examples of professional functions, activities, and tasks:

(a) General objectives (at the level of an institution)

These are broad statements describing the competencies a learner should acquire by the end of an educational programme in order to perform the functions of his or her category of health worker, i.e., physician, nurse etc. These are set by an institution or school for each category of health worker.

These professional functions describe what a physician or a nurse, for example, is expected to do in performing his or her role.

The following is an example of a set of nine functions:

- providing curative and rehabilitative care
- providing preventive care
- planning, organizing, and evaluating a health service or services
- planning, organizing, and evaluating a health education programme
- training other health personnel
- participating in research
- collaborating with other services in the interest of overall community development
- working effectively in a health team &/or leading it
- evaluating one's own activities & updating one's skills as needed.

These functions constitute the professional profile of the physician or nurse. Lists similar to this can often be found in the introductions to the curricula of faculties of medicine or nursing. They are intended to draw attention to the main focal points of the curricula. But in too many cases, the curricula themselves do not reflect these points.

(b) Intermediate objectives

These are obtained by breaking down professional functions into activities. They describe more precisely the competencies a health worker must acquire by the end of an educational programme.

A set of professional activities corresponds to a professional function.

For example: to plan and supervise the care provided to a terminally ill patient in his home by his family. This professional activity is a part of the function of providing curative and rehabilitative care.

(c) Specific (instructional) objectives

These are arrived at by breaking down an activity into precise tasks that a health worker is expected to perform and which can be measured, e.g., to take a blood sample (5ml), using a syringe, from the cubital vein of an adult.



Learning by objectives for each category of health personnel must be directly related to the needs of the community to be served

#### 4. The basis for defining learning objectives

We have shown how learning objectives must be derived from the professional profile of any category of health personnel.

In drawing up a professional profile related to community health needs the following should be taken into consideration:

- (1) defined health needs; health demands and resources of the community to be served;
- (2) national health policies and plans;
- (3) functions of the other members of the health team;
- (4) relationship of the local health services to health manpower development;
- (5) characteristics of the student body and teaching staff;
- (6) traditional characteristics of the health profession;
- (7) scientific progress;

Although learning objectives for each category of health personnel may differ from one community to another, in all cases they must be directly related to the needs of the community to be served.

5. How do we obtain the data needed to formulate learning objectives?

One method is the critical incident technique, i.e. descriptions of significant incidents in which persons are observed during the performance of their professional role.

A more direct method is the time and motion study, or job analysis.<sup>(2)</sup> This is usually accompanied by prospective studies, or a description of what practitioners of the future should do.

Another method is based upon morbidity and mortality statistics.

Simpler, quicker and cheaper techniques include open-answer or closed-answer questions. The answers to these questions provide descriptions of the functions and tasks of any member of the health team, based on interviews with members of these professions.

Although these methods have existed for several decades, unfortunately they are not often used<sup>(3)</sup>. When they are used, they sometimes result in long lists of learning objectives of questionable relevance.

The worst situation is when each department of a school, representing one or more disciplines, defines its educational objectives (so called "departmental objectives"). Even worse are the curricula constructed theoretically on the basis of these questionable objectives. They usually bear no relationship to the objectives and are teacher-centred rather than student-centred.

6. How do we construct a relevant and learner-centred educational programme?

In order to avoid the above pitfalls, the following approach will not only ensure relevant objectives, but also ensure that the active learning of the students corresponds closely to the objectives set.

Therefore this approach will satisfy two basic principles in the education of health personnel: relevance and active learning.

The educational concepts underlying these principles are:

- problem-based learning (problem solving) to emphasize active learning
- community-based education to ensure relevance

Problem-based learning, as described by Barrows and Schmidt<sup>(4)</sup>, has been successfully used as an educational approach in a number of schools, some of which belong to the Network of Community-Oriented Educational Institutions for Health Sciences.<sup>(5)</sup> Problem-based learning is a continuing subject of research.

Problem-based learning enables students to learn how to solve priority health problems by first understanding the scientific principles necessary to the solution of the problem. Beginning with a health problem, a small group of students (five or six) first discuss the case within the limits of their capability, under the guidance of a faculty member. They identify the underlying principles they need (learning issues) to solve the problem, using textbooks, journals, standard references and resource persons.



Community-based education exposes students to a balanced variety of health care settings

Community-based education (CBE) is a more recent educational approach which is increasingly used.<sup>(6)</sup> It exposes students throughout their studies, from the beginning, to a balanced variety of health care settings, ranging from the community to the primary, secondary, and tertiary health care services. In these settings, the students are led to identify the priority health problems that form the basis for the problem-based learning process described above.

Whenever students, with the guidance and supervision of their teachers, identify a priority health problem (PHP), the next step is to apply the problem-based learning (PBL) process to determine what must be done by health personnel in the health service system to deal with the problem.

The sum total of actions needed to deal with health problems determines the functions and tasks of any given category of health personnel. Every student of the health sciences is helped to deduce for himself which of these actions is applicable to his or her own profession.

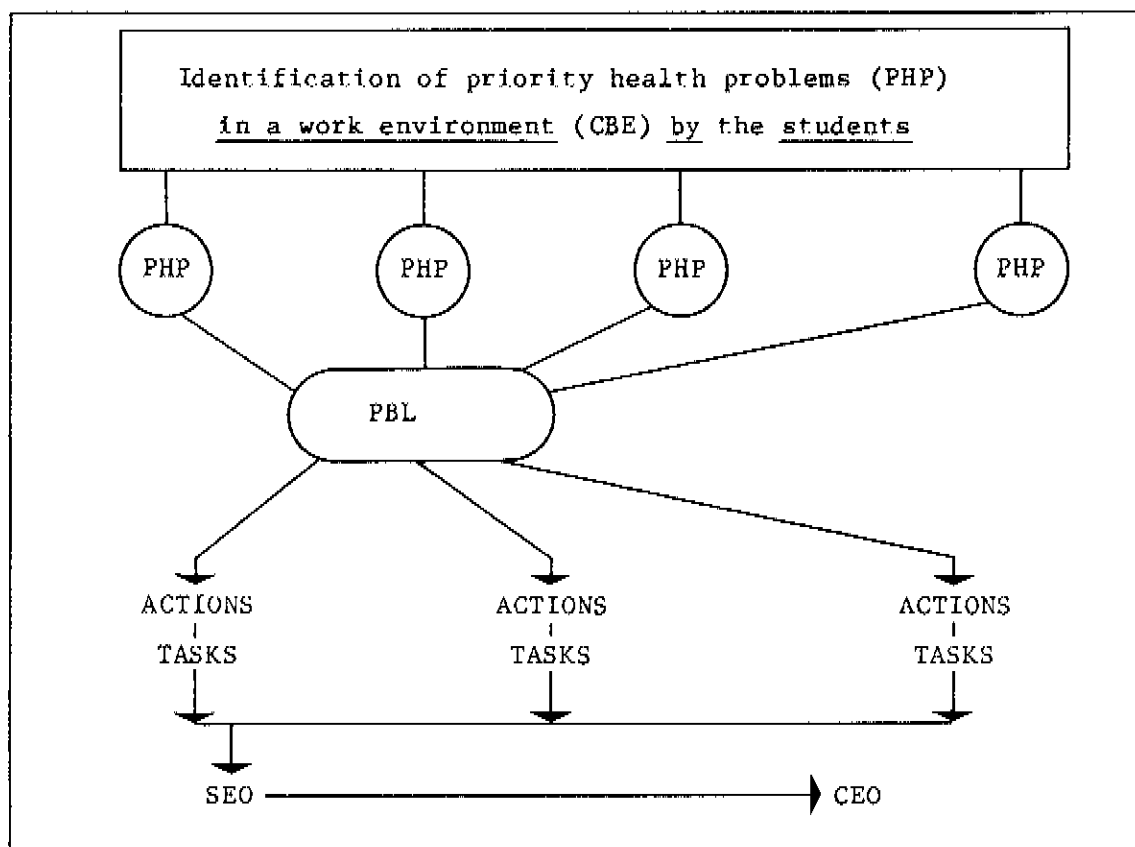
These actions correspond to professional tasks (see above) which in turn determine the specific educational objectives (SEO) and contributory educational objectives (CEO) or learning issues. (See table 2)

The sum total of the professional tasks correspond to the professional activities. These activities together constitute the general functions of each category of health profession. (See table 1)

If the concept of problem-based learning is applied, students will be able to play an active role in the learning process by defining the educational objectives and learning issues (contributory objectives) that correspond to their future professional role, with its inherent functions, activities, and tasks.

If the concept of community-based education is applied, students in the course of their studies will be able to identify health problems that are similar to the problems they will meet later in practice. They will also acquire the motivation and ability to learn how to learn and therefore to continue to learn after they graduate.

Table 2



As an example the following Tables 3 and 4 indicate what could be the activities of students during periods of one or three weeks.

Table 3 (example of a one week duration)

	M	T	W	T	F	
AM	INDIVIDUAL WORK (I.W.)	SMALL GROUP (PBL)	FIELD WORK CBE	DEBRIEFING	SMALL GROUP WORK	AM
PM	INDIVIDUAL WORK	BRIEFING		CONSULTATION OF AN EXPERT AND/OR INDIVIDUAL WORK	EVALUATION OF THE WEEK	PM

Table 4 (example of a 3 week period)

	Week 1					Week 2					Week 3				
AM	I.W	SG PBL	I.W	EXPERT	BRIEFING	FIELD WORK (CBE)	DEBRIEFING	I.W	SG PBL		EXPERT	EVALUATION OF WEEK			
PM	I.W	I.W	SG PBL	I.W				I.W	EXPERT		SG PBL		I.W		
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F



Students use a problem-based approach to learning to identify the best means of solving priority health needs

7. The concept of learning by objectives in perspective (1955-1985)

If we look back at the way the concept has been used in the learning process, we can distinguish three distinct historical stages:

a) From 1955 (Mager) to 1965

- The traditional way of setting objectives led to the definition of educational objectives formulated separately by each teaching discipline. This resulted in a teacher-centred educational programme and the objectives were not usually related to health needs.

b) From 1965 (G. Miller) to 1975

- The next stage was designed to rectify these defects. Professional roles were defined by teachers, hence the listing of all functions, activities, and tasks corresponding to that role. This was followed by a definition by the teachers of the specific educational objectives and the contributory educational objectives (learning issues).

Although the role, functions, etc., were supposedly derived from the health needs of society, the objectives defined by the teachers were not always relevant and the educational programme remained teacher-centred.

c) From 1975 to now

The present situation, in a small number of innovative schools, <sup>(7)</sup> is that the relevance and effectiveness of educational objectives are ensured by the students defining priority health problems in the health care working environment of health care practice, i.e., community-based education. They then use the problem-based approach to identify what needs to be done to resolve these problems.

The actions (tasks) needed to solve the problems become specific learning objectives (and it is from these that the contributory educational objectives are derived). The sum of these objectives (tasks) corresponds to the professional role. The result is a learning situation that is learner centred (learning by doing) and relevant to priority health problems.



The learning situation should be learner centred and relevant to priority health problems

Table 5 below outlines the different ways of learning by objectives

Table 5. Learning by objectives

<u>Method</u>	<u>Characteristics</u>
<p>1955 - 1965</p> <p>Traditional: Educational objectives defined for each discipline or department of studies</p>	<p>Lack of relevance</p> <p>Teacher centred</p>
<p>1965 - 1975</p> <p>"Recuperated": The role of each health professional is defined by teachers including functions, activities, and tasks.</p> <p>The specific educational objectives (SEO) and the contributory educational objectives (CEO) derived from this role definition by the teachers.</p>	<p>Based on a theoretical assessment of the community's health situation and needs.</p> <p>Learner oriented (in theory only) because based on learning objectives but teacher-centred (in reality) because students are not involved in the process.</p>
<p>1975 - 1985</p> <p>Incorporating relevance and effectiveness: identification of <u>priority health problems</u> (PHP) in a work environment (health care setting) (CBE) by the <u>students</u> of a health profession.</p>	<p>Community-based educational programme (students identify health problems and needs) (CBE).</p> <p>Problem-based learning (PBL) determines actions to solve health problems.</p> <p>Educational objectives are relevant to community health needs (in reality) and programme is learner centred (in reality)</p>



A major role for teachers is to ensure that students develop problem-solving skills

## 8. The fundamental role of the teacher

These paragraphs are for those who did not stop reading at the end of paragraph 6 in the false assumption that teachers have NO role to play in a learner-centred approach.

Teachers who limit their role to giving lectures cannot fully appreciate the value of community-based education and problem-based learning. A broader role for teachers is described in detail in the literature<sup>(8)</sup>. In summary this means that teachers should make themselves available to perform the following functions:

- to provide constructive criticisms of the learning objectives and working methods of the students and also help students to derive learning objectives from a professional profile;
- to select and organize learning activities and to prepare learning aids and materials;
- to confront students with new problems;
- to ensure that students develop problem-solving skills and the ability to justify their actions on the basis of scientific principles;
- to supervise the students' progress and assess the quality of their work;
- to encourage intellectual discipline;
- to set an example.

Nostalgic remarks are often made about the good old days before professional educators had begun to invade the educational black box. One could then lecture and enjoy the feeling of satisfaction any good teacher has the right to expect. Nowadays, teaching is somewhat more complex, especially if it is accepted that it should be for the benefit of the learner and not only for the satisfaction of the teacher.

Some teachers are already fulfilling some of these functions. Readers who are disappointed or disillusioned by what they are doing at present, readers who are tired of repeating lectures containing the same information as students can find in textbooks or scientific publications, readers who feel "something else" needs to be done to educate competent health professionals of tomorrow, please contact us directly or the nearest medical education center.

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(8) Guilbert J.-J. Educational handbook for health personnel. Revised Edition. Geneva, World Health Organization, 1986.(Offset Publication No. 35).