CHAPTER ONE

Overview: A Six-Step Approach to Curriculum Development

RATIONALE AND ORIGINS

The six-step approach described in this book derives from the generic approaches to curriculum development set forth by Taba (1), Tyler (2), Yura and Torres (3), and others (4) and from the work of McGaghie et al. (5) and Golden (6), who advocate the linking of curricula to health care needs. Underlying assumptions are: (a) educational programs have aims or goals, whether or not they are clearly articulated; (b) medical educators have a professional and ethical obligation to meet the needs of their learners, patients, and society; (c) medical educators should be held accountable for the outcomes of their interventions; and (d) a logical, systematic approach to curriculum development will help achieve these ends.

A SIX-STEP APPROACH (FIGURE 1.1)

Step 1: Problem Identification and General Needs Assessment

The first step begins with the *identification and critical analysis of a health care need or other problem.* The need may relate to a specific health problem, such as the provision of care to patients infected with human immunodeficiency virus (HIV), or to a group of problems, such as the provision of routine gynecologic care by primary care physicians. It may relate to qualities of the physician, such as the need for health care providers to develop as self-directed, lifelong learners who can provide effective care as medical knowledge and practice evolve. Or it may relate to the health care needs of society in

D.Kern and others. Curriculum Development for Medical Education: A Six-Step Approach. The Johns Hopkins University Press, 1998.

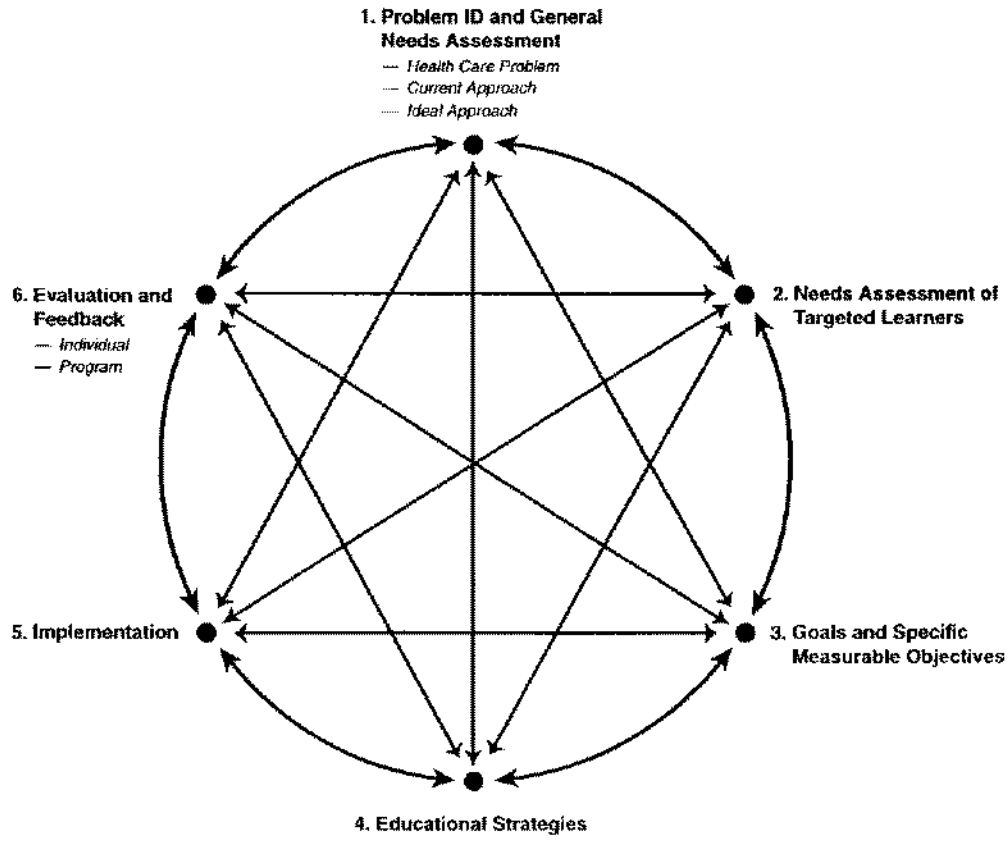

Figure 1.1. A Six-Step Approach to Curriculum Development

general, such as whether the quantity and type of physicians being produced are appropriate.

A complete problem identification requires an analysis of the *current approach* of patients, practitioners, the medical education system, and society, in general, to addressing the identified need. This is followed by the identification of an *ideal approach,* which describes how patients, practitioners, the medical education system, and society should be addressing the need. The difference between the ideal approach and the current approach represents a *general needs assessment.*

Step 2: Needs Assessment of Targeted Learners

This step involves assessing the needs of one's targeted group of learners or medical institution, which may be different from the needs of learners and medical institutions in general.

EXAMPLE: The *general needs assessment of practicing primary care physicians* may have revealed (a) deficits in their provision of acute and preventive care to HIV-infected patients; (b) biases against homosexual and substance-abusing patients, resulting in avoidance of such patients; and (c) the lack of formal training. The *needs assessment of one's targeted learners,* however, may reveal that all of these learners have received training and feel comfortable caring for patients with HIV disease in the hospital, and that they almost all feel comfortable providing care for homosexual patients. On the other hand, these learners may have received no training and may exhibit deficits in the preventive care of HIV-infected patients and may

have negative feelings about caring for patients who are substance abusers. Accordingly, new curriculum development for these learners would best focus on preventive care and on barriers to caring for substance-abusing HIV-infected patients.

Step 3: Goals and Objectives

Once the needs of targeted learners have been identified, goals and objectives for the curriculum can be written, starting with *broad or general goals,* then moving to *specific, measurable objectives.* Objectives may include cognitive (knowledge), affective (attitudinal), or psychomotor (skill and performance) objectives for the learner, process objectives related to the conduct of the curriculum, or even clinical outcome objectives. Goals and objectives are crucial because they help to determine curricular content and learning methods and help to focus the learner. They facilitate communication of what the curriculum is about to others and provide a basis for its evaluation. When resources are limited, prioritization of objectives can expedite the rational allocation of those resources.

Step 4: Educational Strategies

Once objectives have been clarified, *curriculum content is chosen and educational methods are selected that will most likely achieve the educational objectives.*

EXAMPLE: *Curriculum Content.* Based upon the above example of a needs assessment of targeted learners, one objective of this HIV curriculum might be to help targeted learners become proficient in the use of antiretroviral agents. Curriculum content, therefore, will need to focus on antiretroviral agents and their appropriate use.

EXAMPLES: *Educational Methods.* Case-based, problem-solving exercises that actively involve the learners are more likely to improve clinical reasoning skills than is attendance at lectures.

The development of physicians as effective team members is more likely to be achieved through their participating in and reflecting on cooperative learning experiences and work environments than through reading and discussing a book on the subject.

Interviewing, physical examination, and procedural skills will be best learned in an environment that supplements practice with self-observation, observation by others, feedback, and reflection.

Step 5: Implementation

Implementation of a curriculum has *several components:* procurement of political support for the curriculum; identification and procurement of resources; identification and address of barriers to implementation; introduction of the curriculum (e.g., piloting the curriculum on a friendly audience before presenting it to all targeted learners, phasing in the curriculum one part at a time); administration of the curriculum; and refinement of the curriculum over successive cycles. *Lack of attention to any of these components can threaten the success of a curriculum.*

Step 6: Evaluation and Feedback

This last step has several components. It usually is desirable to assess the performance of both *individuals* (individual evaluation) and the *curriculum* (called program evaluation). The purpose of evaluation may be *formative* (to provide ongoing feedback

so that the learners or curriculum can improve) or *summative* (to provide a final "grade" or assessment of the performance of the learner or curriculum).

Evaluation can be used not only to drive the ongoing learning of participants and the improvement of a curriculum but also to gain support and resources for a curriculum, and, in research situations, to answer questions about the effectiveness of a specific curriculum or the relative merits of different educational approaches.

THE INTERACTIVE AND CONTINUOUS NATURE OF THE SIX-STEP APPROACH

In practice, curriculum development does not usually proceed in sequence, one step at a time. Rather, it is a dynamic, interactive process. Progress is often made on two or more steps simultaneously. Progress on one step influences progress on another (as illustrated by the bidirectional arrows in Figure 1.1). For example, limited resources (Step 5) may restrict the number and nature of objectives (Step 3) as well as the extent of evaluation (Step 6) that is possible. The development of evaluation methods (Step 6) may result in a refinement of objectives (Step 3). Evaluation (Step 6) may also provide information that serves as a needs assessment of targeted learners (Step 2). Time pressures, or the presence of an existing curriculum, may result in the development of goals, educational methods, and implementation strategies (Steps 3 and 4) prior to a formal problem identification and needs assessment (Steps 1 and 2), so that Steps 1 and 2 are used to refine and improve an existing curriculum rather than develop a new one.

For a successful curriculum, curriculum development never really ends, as illustrated by the circle in Figure 1.1. Rather, the curriculum evolves, based upon evaluation results, changes in resources, changes in targeted learners, and changes in the material requiring mastery.

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