CHAPTER ONE

Overview
A Six-Step Approach to Curriculum Development

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RATIONALE AND ORIGINS

The six-step approach described in this monograph 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 advocated the linking of curricula to health care needs. Underlying assumptions are fourfold. First, educational programs have aims or goals, whether or not they are clearly articulated. Second, medical educators have a professional and ethical obligation to meet the needs of their learners, patients, and society. Third, medical educators should be held accountable for the outcomes of their interventions. And fourth, a logical, systematic approach to curriculum development will help achieve these ends. Accrediting bodies for undergraduate, graduate, and continuing medical education in the United States require formal curricula that include goals, objectives, and explicitly articulated educational and evaluation strategies (7–9). They are beginning to require outcome measurements (10).
A SIX-STEP APPROACH (FIGURE 1.1)

Step 1: Problem Identification and General Needs Assessment

This 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 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 identification of an ideal approach that 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: Targeted Needs Assessment

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

EXAMPLE: Targeted Needs Assessment. The problem identification and general needs assessment for a substance abuse curriculum for internal medicine residents revealed a high prevalence of substance abuse and consequent disorders in the United States, an increasing prevalence of methamphetamine abuse, underdiagnosis of substance abuse disorders, and underuse of evidence-based therapies by practicing physicians. The targeted needs assessment revealed a high prevalence of heroine abuse and low prevalence of methamphetamine abuse among patients using the targeted training center. The targeted learners were already being trained and felt competent in smoking cessation counseling. However, they received little training in the use of screening instruments for and the diagnosis and treatment of alcohol and other substance abuse disorders. Neither the residents nor their outpatient preceptors were trained or certified in the use of opioid agonist (buprenorphine) treatment, nor were they trained in the expert-recommended screening, brief intervention, referral, and treatment (SBIRT) approach to management.

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 and then moving to specific, measurable objectives. Objectives may include cognitive (knowledge), affective (attitudinal), or psychomotor (skill and behavioral) objectives for the learner; process objectives related to the conduct of the curriculum; or even health, health care, or patient outcome objectives. The development of goals and objectives is critical because they help to determine curricular content and learning methods and help to focus the learner. They enable communication of what the curriculum is about to others and provide a basis for its evaluation. When resources are limited, prioritization of objectives can facilitate 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 on the above example of a targeted needs assessment, two objectives of the substance abuse curriculum for residents were that residents and outpatient preceptors become 1) proficient in SBIRT and 2) proficient and certified in office-based opioid agonist use. Training in smoking cessation counseling, which would have been duplicative, was omitted.

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

The development of physicians as effective team members is more likely to be promoted through their participation in and reflection on cooperative learning and work experiences 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: obtaining political support; identifying and procuring resources; identifying and addressing barriers to implementation; introducing 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); administering the curriculum; and refining the curriculum over successive cycles. Implementation is critical to the success of a curriculum. It is the step that converts a mental exercise to reality.

Step 6: Evaluation and Feedback

This step has several components. It usually is desirable to assess the performance of both individuals (individual assessment) 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 evaluation 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 limit the number and nature of objectives (Step 3), as well as the extent of evaluation (Step 6) that is possible. Evaluation strategies (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, 4, and 5) before 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 on evaluation results, changes in resources, changes in targeted learners, and changes in the material requiring mastery.

REFERENCES


