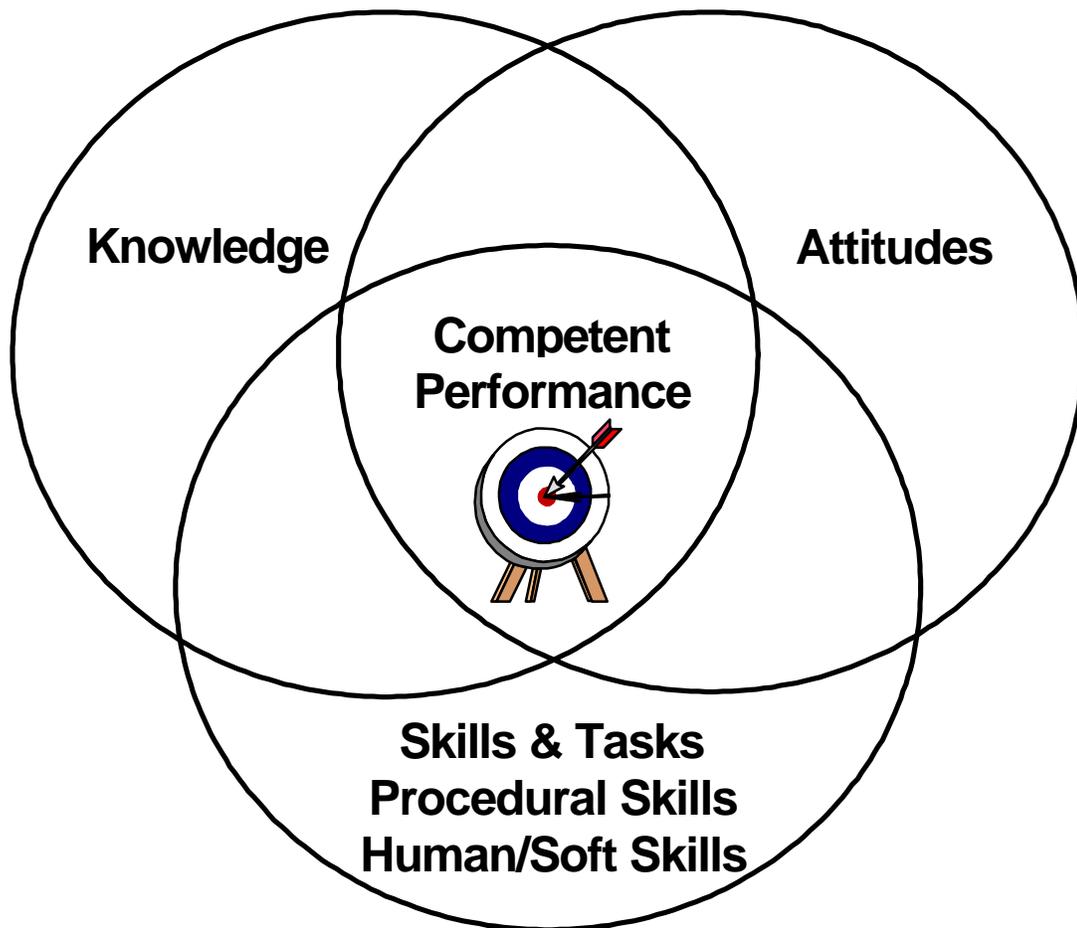


**CURRICULUM DEVELOPMENT**  
**GUIDE:**  
**TECHNICAL EDUCATION AND TRAINING**



**BUREAU OF MEDICINE AND SURGERY**  
**1996**



## INTRODUCTION

The competency-based model of curriculum development described in this guide will be used for all technical education and training programs or courses (i.e., all officer, enlisted, and cross-Corps programs that qualify graduates to perform a specific job or that certify graduates to perform specific skills or functions) under the cognizance of the Bureau of Medicine and Surgery.

A companion volume with adaptations for developmental courses, such as management and leadership courses, is under development.

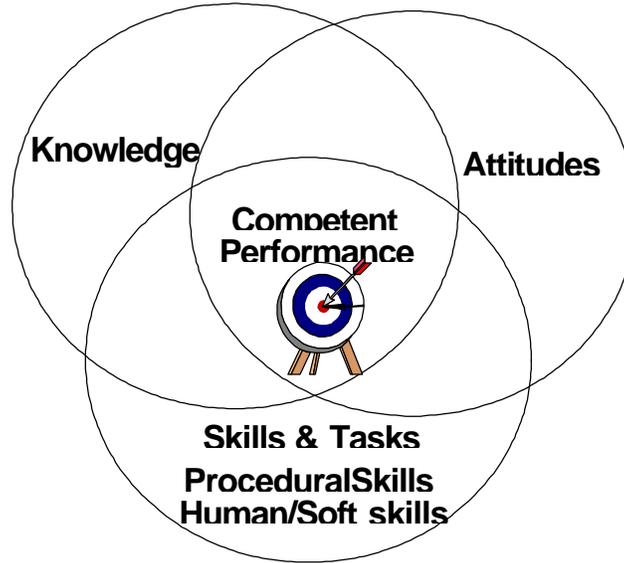
The guiding concepts behind the curriculum development model are competency and accountability.

"Competency" is derived from the interaction of the skills, knowledge, and attitudes required to perform successfully, as shown in Figure 1. Competency in a job requires more than just the ability to perform the tasks specific to that job. Competent specialists must understand the purpose and impact of the procedures they perform. They must be able to make informed decisions on how to carry out their tasks and duties under variable circumstances.

In most of the Medical Department's enlisted technical specialties, this requires an understanding of the basic sciences and theories that underlie the procedures. In addition, technicians require "soft skill" abilities (such as interpersonal and communications skills, also called "human skills") that involve both cognitive and attitudinal factors in dealing with patients and other members of the medical team. Similar requirements for cognitive, affective, and soft skills must be included in technical training for officer specialties (e.g., fiscal and supply training program) and in cross-Corps training (e.g., Fleet Hospital training).

Accountability has two facets. First, what is trained must be justified and documented. Secondly, the success of the training must be documented, both within the training setting and in terms of its impact on performance on the job.

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**Figure 1: Model of Competent Performance.**

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The primary application of the model is within technical education and training; i.e., training programs (such as "A" and "C" schools) that are intended to prepare personnel to perform specific jobs, yet present sufficient knowledge to make judgmental decisions. At the same time, successful completion of technical training indicates that the graduate has been prepared to perform the job at the entry-level. This dictates that students must demonstrate performance at a designated level of proficiency prior to graduation.

The model provides a systematic approach to instructional design and includes the five phases common to instructional systems design:

**Analysis:** Identification of training needs, including knowledge and attitudes.

**Design:** Specification of training requirements in terms of measurable, demonstrated trainee achievements.

**Development:** Specification of teaching and learning activities; selection or development of instructional media; and field testing new materials.

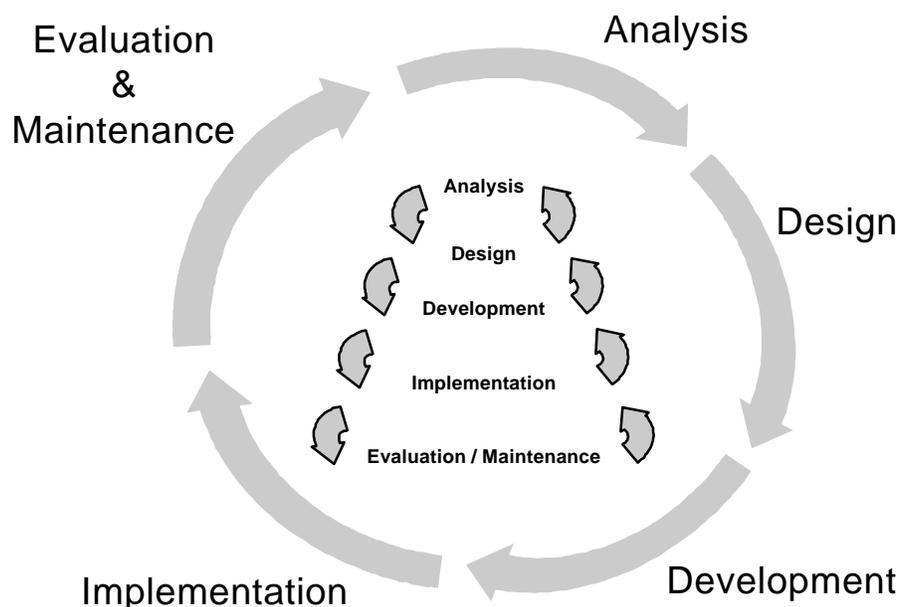
**Implementation:** Conducting the training program, including validation during a pilot implementation.

**Evaluation/Maintenance:** Specification and implementation of procedures for measuring and maintaining the effectiveness of the instruction provided.

Establishing that a training need exists and planning considerations are covered in a separate section ("Preliminaries").

The analysis and design phases are covered in greatest depth because the majority of the variations from a task-based approach are embodied in these two phases. In addition, education and training courses or programs under BUMED cognizance are approved or disapproved on the basis of the documentation completed in the analysis and design phases.

The model is cyclical, with decisions from one phase guiding decisions in the next and sometimes prompting a second look at decisions from a previous phase, as shown in Figure 2.



**Figure 2: Phases of Instructional Systems Design.**

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For new course development, the full model will be implemented, beginning with analysis and continuing through design, development,

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implementation, and evaluation/maintenance, in that order. Even for revision projects, changes made in one phase will usually necessitate making changes in subsequent phases. As a minimum, the steps in each phase would need to be followed to make sure that no changes are needed. However, revision projects based on evaluation data may begin with either the analysis, design, or development phase, depending on the types of problems found during evaluation.

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### **COMMON ABBREVIATIONS**

BUMED	Bureau of Medicine and Surgery
CCR	Cyclical Curriculum Review
LTG	Lesson topic guide
POA&M	Plan of Action and Milestones
NTRR	Navy Training Requirements Review
SME	Subject matter expert
TRI	Training requirements inventory