

MODEL CURRICULUM FOR PHARMACY TECHNICIAN TRAINING

USER'S GUIDE

Potential Uses for Information in the Model Curriculum

- A guide for structuring the curriculum of a new technician training program
- A checklist of quality components for comparison with the curriculum of an existing training program
- A guide for instructing practicing technicians who lack skills in specific areas
- A source list of job responsibilities and tasks that might be assumed by technicians for managers seeking to create time for pharmacists to assume direct patient care
- A source of task statements describing work performed by technicians suitable for direct lifts into job descriptions

Putting the Curriculum in Perspective

The Model Curriculum for Pharmacy Technician Training was developed as a nationwide project to provide technician educators with a prototype for training technicians for service in all practice settings and in all geographical locations. Those who use this curriculum will benefit from understanding the process for its development and some general rules for adapting the model to the needs of individual training programs.

A design team consisting of pharmacy technician educators and an instructional designer produced the first edition of the curriculum. As their first step, the team identified the major job responsibilities of pharmacy technicians in all practice settings. To do this, they drew upon the findings of the Scope of Pharmacy Practice Project, which the instructional designer supplemented with observations of technicians at work and interviews with technician educators. Cognizant that the practice of pharmacy and the role of technicians are in transition, the team included the thoughts of those they worked with on what the tasks of technicians would be five years out. The team analyzed the outcome of their task analysis to determine the knowledge, skills, attitudes and abilities a technician would need to do the tasks associated with each job responsibility. The analysis identified objectives and instructional objectives for training. The team then placed the objectives and instructional objectives in logically related groups. These became modules of instruction. As a last step, the team sequenced the modules to account for learning prerequisites. The 2001 revised curriculum is based in the 1996 original, but is updated to reflect current and future practice.

Technician educators using this curriculum need to keep in mind that this is a comprehensive model intended for adaptation. The use of the model in total would be appropriate only if the purpose of one's

training program were to train technicians who could work well in all practice settings and in all geographic locations. Since many training programs focus on meeting the training needs of a narrower audience of employers, technician educators will obtain maximum benefit from the model through a three-step process. First, after reviewing the entire list of goal statements and objectives, they should select those that directly pertain to the employment environment they serve. Second, they should select those modules that contain the chosen objectives, preserving the sequence of instruction in the model. Finally, they should study any of the modules they have not selected to be certain that through the process of elimination, they have not dropped prerequisite learning that might hinder student achievement of the selected objectives.

This guide will help you interpret the components of the Model Curriculum for Pharmacy Technician Training and how they fit together. The curriculum has four components:

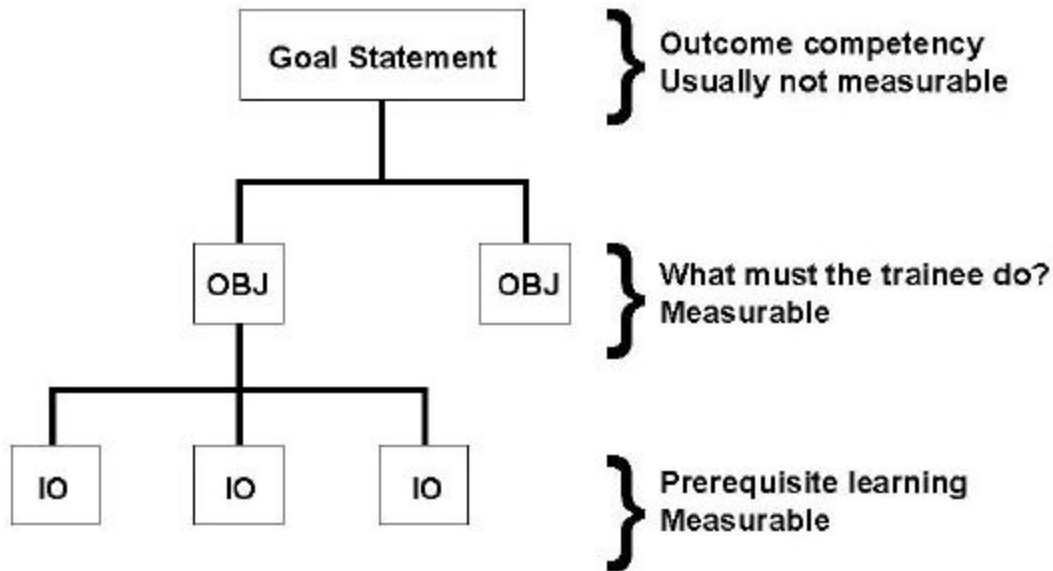
1. Goal statements, objectives, and instructional objectives
2. A curriculum map with suggested sequencing of the modules of instruction
3. Descriptors for each of the modules of instruction
4. A tracking document to show in which module(s) each objective and instructional objective is taught

Goal Statements, Objectives, and Instructional Objectives

The Model Curriculum for Pharmacy Technician Training is a complete picture of the possible outcomes of technician training. There is no expectation that every program will teach every goal and objective, but rather that programs will view the Model as a complete menu of possible learning outcomes.

The goal statements, objectives and instructional objectives are a comprehensive list of work responsibilities for pharmacy technicians and the learning required to successfully carry out each job responsibility. The goals are divided into two areas. The first reflects the major job responsibilities of the pharmacy technician and the second documents knowledge, skill, and attitude requirements underlying the performance of the job responsibilities. Figure 1 shows the relationship between goals, objectives, and instructional objectives.

Figure 1: GOAL, OBJ, IO FLOWCHART



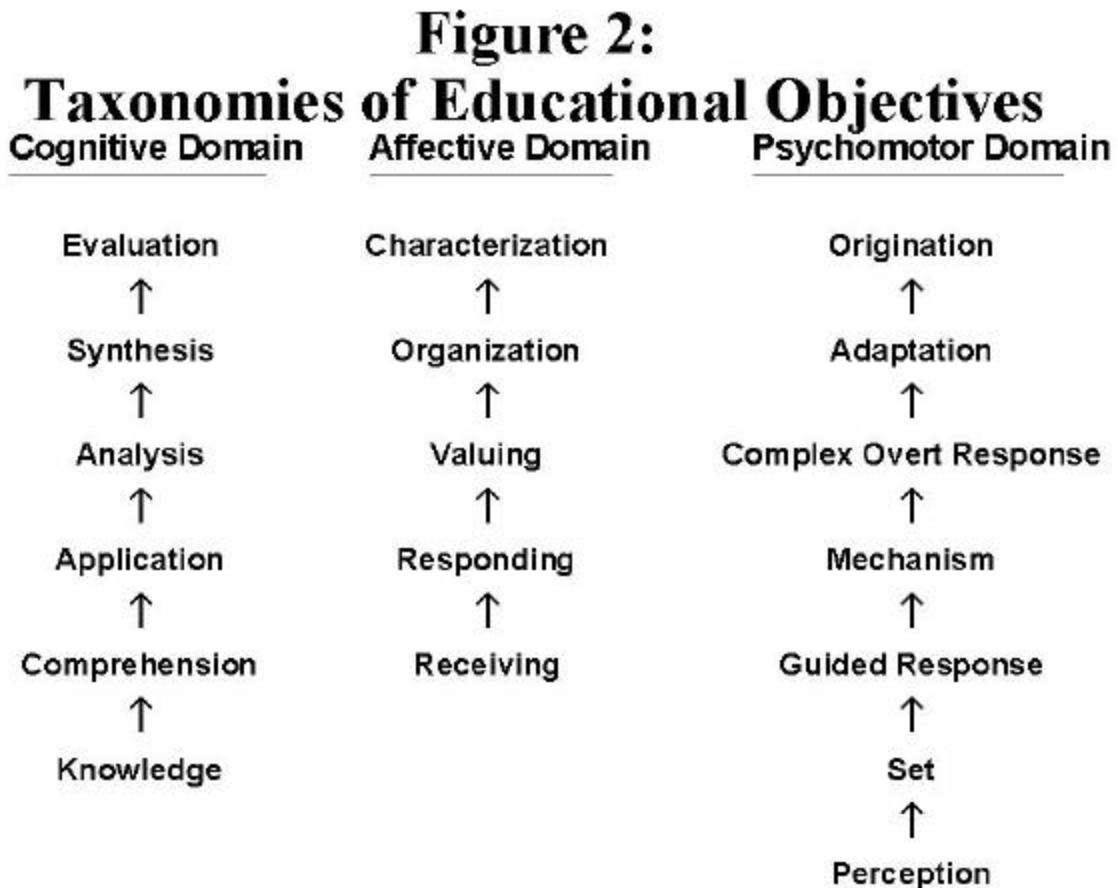
Goals are general statements about the work knowledge, skills, attitudes, and abilities expected of program graduates and are stated in general terms. The composite goal statements describe the intent of technician training to audiences outside the training program. Sometimes goal statements are referred to as outcome competencies. Goal statements are the philosophical base upon which the objectives and instructional objectives, which must be worded with precision, are subsequently built. The goals, objectives, and instructional objectives section of the Model begins with a list of just the goal statements.

In the next portion of the goals, objectives, and instructional objectives section of the Model, objectives are listed below each goal statement. The objectives were generated in response to the question for each goal, "What could we ask the trainee to do, that we could observe and measure whose success would assure us that the trainee had achieved the goal?" Sometimes the answer is one performance. In other cases there are two, three, or even thirteen different performances required to be sure the goal is mastered. Objectives specify observable measurable behaviors. Unlike goals, they are worded with precision because they are the basis for objective assessment of trainee performance. Objectives specify behaviors which, in sum, assure goal mastery.

In the final portion of the goals, objectives, and instructional objectives section of the Model, instructional objectives are listed below the objectives. For each objective we asked the question,

"What would the trainee need to know or be able to do to accomplish this objective?" This process is termed a learning analysis. The learning analysis produced a list of knowledge, skills, attitudes, and abilities (SKAs) that enable the trainee to do the objective. These were converted into statements of observable, measurable performances. Instructional objectives, then, are objectives that identify for instructors the prerequisite trainee learning for success on the objectives.

Figure 2 is a diagram that will help you with the remaining discussion. In reading and interpreting the objectives you will notice that each objective is classified into one of three general categories, representing the three types of human learning: (1) cognitive, (2) affective, or (3) psychomotor. Cognitive learning involves remembering or recognizing knowledge or developing intellectual skills or abilities. Describing the basic anatomy of the cardiovascular system is an example of cognitive learning. Affective learning involves changing interests, attitudes, and values. Demonstrating respect for the confidentiality of patient information is an example of affective learning. Psychomotor learning involves mastery of manipulative or motor skills; for example, learning to prepare injectable solutions using aseptic technique.



For the greater part you will be working with objectives in the cognitive domain. We use a system called Bloom's Taxonomy to help make sense of learning in this domain. The taxonomy specifies that cognitive learning occurs in a hierarchical pattern. One must have knowledge before one can understand. One must understand before one can do something with the understanding. One must be able to apply the understanding before being able to detect the structure of material. One must be able to detect structure before one can create something new. And, finally, one must be capable of creation before being able to judge the value of something that has been created.

To enhance the understanding of everyone working with these objectives, we have labeled each objective with its Bloom's classification. The following describes the meaning of each classification:

Knowledge: Trainees remember ideas or material. They can recall or recognize the ideas or material, but they cannot necessarily put a memorized definition into their own words.

Comprehension: Trainees grasp the literal meaning and intent of the material. They can restate what they have learned in their own words and describe the importance of the new material as well as its relationship to related material or ideas.

Application: Trainees use a method, theory, principle, or abstraction that they comprehend to solve a problem that is new to them. They use the correct method, theory, principle, or abstraction without being prompted. Technician trainees at this level of learning can perform the activity described in the objective, but they are not yet creative at it. They are good at selecting the right approach and following it through. They would be stumped by something unusual that required creative thinking. They could not judge the performance of a peer on the same task.

Analysis: Trainees break down material into its constituent parts in order to determine its parts, the relationships among the parts, or the principles that organize it. Trainees use analysis primarily to distinguish relevant from irrelevant material. An example is selecting that data which is pertinent upon which to base a decision.

Synthesis: Trainees create something new, such as a new pattern for placing medications in a fill cart. At this level of learning, trainees are moving from novice to expert. When confronted with a complex problem, they can devise solutions that are not in the standard list of what to do.

Evaluation: Trainees can judge the worth of their own and of peers' work according to external criteria and internal standards.

Affective and Psychomotor Objectives

When trainees' learning falls into the affective domain, we categorize objectives according to

Krathwohl's Taxonomy. Like the cognitive taxonomy, the affective domain has a hierarchy of learning. It is the top two levels of this taxonomy that we have found useful in stating objectives for trainees.

The lower of these two levels is organization. Trainees at this level of attitude development are initiating the construction of an internally consistent value system. Organization is required when the individual must deal with more than one relevant value. They are each then placed within a system so that each can have its place in the person's life. Acceptance of professional responsibility and acceptance of family responsibility are associated values which must be organized to maintain responsibility in both areas simultaneously.

The highest level of affective learning is characterization. Trainees who attain characterization have developed a characteristic "life style" which is totally internalized. Characterization of a value requires the development of a consistent value system. The individual internalizes and organizes values so that his or her response is consistent. Individuals at this level have fully integrated the values into their way of thinking and by doing so they act out these values as a way of life.

We have also used the psychomotor taxonomy of educational objectives. We have stopped short of the top step of the taxonomy and use only complex overt response. Trainees at this level exhibit skillful performance of acts that require complex movements. Trainees move automatically and with certainty.

Descriptors for the Modules of Instruction

The modular design of the curriculum accommodates the variety of environments in which technicians are trained. Each module teaches those objectives which logically fit together when learning. Semester or quarterly courses can be constructed by grouping related modules.

- o Modules have descriptive names and are assigned a number. The number corresponds to the module's location on the curriculum map.
- o Module narratives are carefully worded to reflect the full scope of objectives covered.
- o The descriptor lists each objective and instructional objective assigned to the module. It is assumed that the student will be tested on each of these objectives at the conclusion of instruction for that module.
- o Those objectives with the designation "partial" are taught in more than one module. Only that portion of the objective taught in the current module of instruction should be tested at the conclusion of instruction for that module.

Modules 34-37 are clinical experiences. Objectives assigned to these modules are those requiring

performance in the practice environment for valid assessment. All of these objectives have been introduced in prerequisite modules of instruction, but there is no presumption that they could be satisfactorily taught or evaluated in the classroom setting.

Curriculum Map

The curriculum map shows the proper sequencing of each of the modules of instruction. Each module was assigned a number. The map is read from the bottom up. All modules at a given level are a clear prerequisite for advancement to the next level and should be completed before beginning instruction of modules on the next level up. Within a given level, the ideal sequence is to move instruction from left to right, although left-to-right sequencing is not critical to student learning but simply represents the "best route" for the modules on that level. However, the Model's left to right sequencing encompasses prerequisite learning that may be passed over if a program decides to teach modules in a different order.

To avert problems, before deciding to teach a module out of the recommended order within a level, examine those modules to the left of the module in question to be certain that you account for all prerequisites.

Tracking Document

This document identifies in which module(s) each objective and instructional objective is taught. All of the Model's objectives and instructional objectives. The numbers in parenthesis following each indicates module(s) assignments.