## Competencies and Learning Objectives[*]

The purpose of this paper is to support faculty of schools of public health/public health programs (SPH/PHP) as they consider approaches and make decisions for competency-based program planning and curriculum development.

This document is provided for assistance and does not intend to prescribe a process for curriculum development. It will provide an introduction to the concepts and references to support continued examination of these issues.

### Competency-based education (CBE): history and overview

CBE is an institutional process that moves education from focusing on what academics believe graduates need to know (teacher-focused) to what students need to know and be able to do in varying and complex situations (student and/or workplace focused).

CBE is focused on outcomes (competencies) that are linked to workforce needs, as defined by employers and the profession. CBE's outcomes are increasingly complex in nature, rather than deriving from the addition of multiple low-level objectives. CBE often necessitates more complex assessment, involving portfolios, experiential learning assessment in field experience, demonstration in varying contexts, role play, use of standardized patients or clients, etc.

Large skill sets are broken down into competencies, which may have sequential levels of mastery. Competencies reinforce one another from basic to advanced as learning progresses; the impact of increasing competencies is synergistic, and the whole is greater than the sum of the parts.

Competencies within different contexts may require different bundles of skills, knowledge and attitudes. The challenge is to determine which competencies can be bundled together to provide the optimal grouping for performing tasks. Another challenge is designing learning experiences that support students as they practice using and applying these competencies in different contexts. Continual refinement of defined competencies is necessary so that enhanced performance in a variety of contexts can be assessed. In essence, CBE is a process, not a product.

CBE is more than an effort to describe or list educational and behavioral objectives. The early emphasis on behavioral learning objectives was on reliable observation and judgment. To this end, writers of behavioral objectives were encouraged to state outcomes in operational terms, which can be observed using consistent observational processes allowing for no interpretation (Bloom, 1971). In an attempt to achieve this reliability, a behavioral verb from a list of behavioral verbs (eg, state, list, name, recognize, describe, calculate, describe, explain,

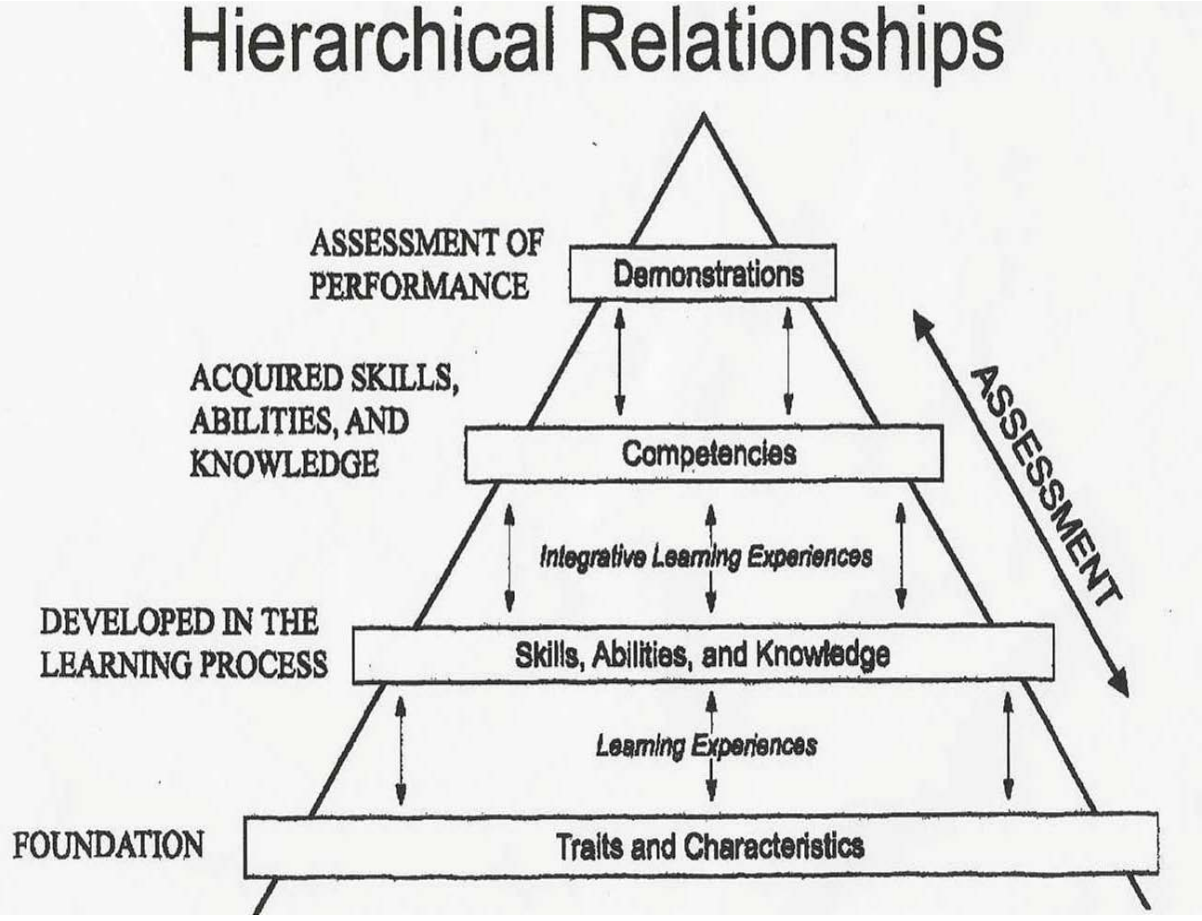
[*] This is a technical assistance document, intended to be helpful to institutions seeking accreditation and to site visit teams in evaluating schools and programs. It is not a policy paper and does not supplant formally adopted criteria that guide the decision-making process of the Council on Education for Public Health. Interested parties should refer to *Accreditation Criteria for Schools of Public Health, June 2011*, or *Accreditation Criteria for Public Health Programs, June 2011*, for the accreditation criteria.

synthesize, analyze) was required to begin the objective. It is this narrowness that led to the criticism of these approaches then and now; attainment of the multiple behavioral objectives did not equal students' workforce functionality.

**Relationship of competencies to school/program mission, instructional and course objectives**

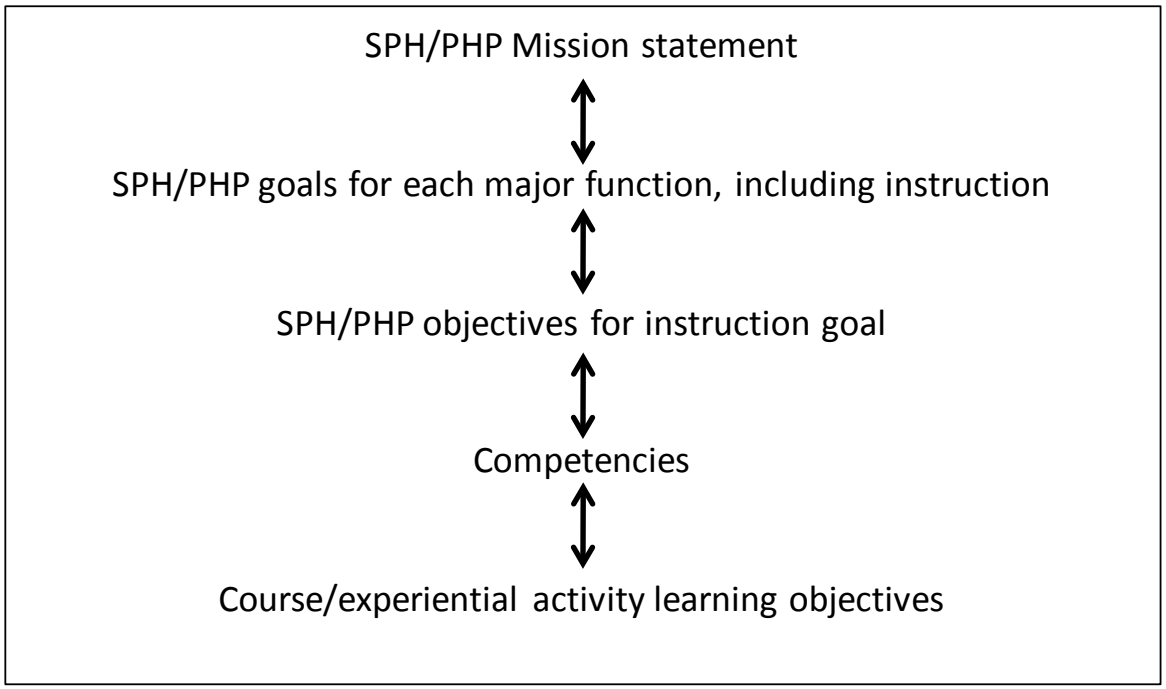
In addition to clarifying educational outcomes as they relate to workforce needs and expectations, competencies are critical to linking course learning objectives to the SPH/PHP instructional objectives. The CEPH criteria require each SPH/PHP to state a mission that is supported by institutional goals for instruction, service and research. Goals are broad idealistic statements of how the institution's efforts in research, service and instruction lead to the stated mission. Goals must in turn be supported by objectives that are more specific, measurable statements of what the SPH/PHP plans to achieve related to research, service and instruction. Figures 1 and 2 outline the hierarchical relationships that extend from the SPH/PHP's mission.

**Figure 1: A hierarchy of post-secondary outcomes**[†]




[†] Jones, E, Voorhees, R, Paulson, K. *Defining and assessing learning: Exploring competency-based initiatives.* Washington, DC: Council of the National Postsecondary Education Cooperative; 2002. Publication NCES 2002159.

**Figure 2. Hierarchy and interrelationships of objective statements**




**Instructional objectives**

The instructional objective is the SPH/PHP's statement of a measurable step it will achieve that leads to an instructional goal. Objectives capture the means by which an SPH/PHP will implement its stated mission, as specified in CEPH's accreditation criteria.

The goal in Figure 3 describes the general intent of the SPH/PHP to produce graduates who are able to use public health core knowledge. The related objective clearly states one way in which the institution intends to achieve this goal. This objective is measurable, in that it specifies the degree to which the action is demonstrated. The SPH/PHP will be able to measure in any given cohort of students whether *all* (100%) students meet the competencies for MPH graduates.

**Figure 3. Instructional goals and objectives**

*Instructional goal:*

To prepare public health professionals who are competent in the public health core content and methodological approaches to problem-solving.

*Instructional objective:*

To require all students to demonstrate competencies required of MPH graduates at the time of graduation.

Measurable objectives specify the minimum acceptable performance in terms of quality, quantity or time. These objectives are used by the institution to evaluate progress in meeting its basic educational mission and may be expanded as appropriate to encompass the complex nature or special focus of each institution.

A major difference between an SPH/PHP instructional objective and a competency is that the institutional objective specifies what the *institution* intends to do to achieve its instructional goals. Competencies, on the other hand, clearly define what the *student* will do to demonstrate learning for a workforce-related need.

**Competencies**

The second level, and the primary focus of this paper, is the SPH/PHP's stated competencies. Criterion 2.6 requires that SPH/PHP present competencies for each degree program and each area of specialization, [‡] including a generalist MPH degree. This includes all professional degree programs (eg, MPH, MHA, DrPH), academic degree programs (eg, MS, PhD, ScD) and dual degree programs (eg, MD/MPH, MBA/MHA).

Thus, there will be competencies that reflect general public health competencies (common across the degree program) and a complementary set of competencies that are specific to the track, concentration or specialization. For example, if an institution offers the MPH with seven distinct tracks, it would have a set of competencies common for all MPH students, and, in addition, each of the seven tracks would have its own set of track-specific competencies. Before a degree is awarded, students should demonstrate the attainment of overall MPH competencies, as well as the competencies specified for the student's particular area of concentration. Competencies at this level should describe what every graduate who completes that track of study should know and be able to do. Figure 4 illustrates competencies at both levels.

**Figure 4. Example of core and concentration-specific competency**

*Competency (common to all MPH students)*

Identify public health laws, regulations and policies related to prevention programs.

*Competency (specific to concentration students)*

Apply proper laboratory techniques to test toxicity of specific environmental substances.

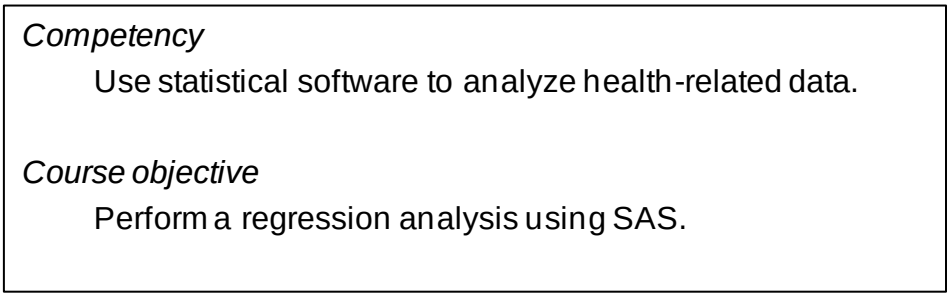
**Course/educational experience learning objectives**

The third and most specific type of outcome statement is the course/learning activity objective, depicted in Figure 5, as it relates to a competency. Learning activity objectives, generally found on course syllabi and materials to support experiential learning, describe the knowledge and skills that a student is expected to demonstrate upon completion of the course. Ideally, each of

[‡] Tracks, concentrations, options and specializations all refer to any prescribed course of study offered by SPH/PHP.

these objectives relates, in some discernable way, to the competencies for the overall program of study. A combination of course-specific objectives is usually necessary to achieve the broader competencies, but the link between the two should be evident.

**Figure 5. Example of relationship between competencies and learning objectives**




All objectives and competencies, regardless of the level for which they are intended, should be specific, measurable and written in behavioral terms. Each should specify an observable learning outcome, and all objectives have two parts: an action verb and a content area.

**Important Considerations**

1. One key element, also specified in Criterion 2.6, is that each set of competencies should be made available to school or program constituents, especially students. The site visit team will expect to see instructional objectives, programmatic competencies (for all MPH students), concentration competencies and course learning objectives in the self-study document and/or in an on-site resource file, but also in more public venues such as the website, student handbook, recruitment materials and course syllabi. Competencies are equivalent to a "contract" between the student and the school or program. They state specifically what the student should expect to learn and be able to do upon completion of the program of study. This allows students to monitor their own progress and identify any gaps in skill attainment. Additionally, if an institution intends to assess student achievement and learning based on the identified competencies, it is imperative that they are shared with students.

2. Competencies should be reviewed regularly and redefined to reflect the changing needs of public health practice. Expected documentation for Criterion 2.6 includes "a description of the manner in which the SPH/PHP periodically assesses the changing needs of public health practice and uses this information to establish the competencies for its educational programs." A site visit team will expect to see evidence that this has occurred on an ongoing basis. For example, SPH/PHP may obtain information through periodic surveys of employers or focus group discussions about the need for professionals with certain skill sets. They also may involve the practice community in advisory groups or in regular curriculum planning processes.

3. Finally, while course learning objectives are most appropriately developed by the course instructor (as part of a collaborative curriculum development process), instructional objectives and competencies should be developed through a process of consensus-building.

Ideally, all affected parties should be involved in their development. Faculty, in particular, but also students and representatives from the public health practice community and workforce support quality assurance processes. The process of obtaining consensus will inevitably take longer than it would if the chair of the curriculum committee or the program director were to simply write competencies, but in the end will produce a sense of ownership.

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