The Concept of Competence: An Operational Definition

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F. Coit Butler

Introduction

There is today an increasing interest in competence-based education. But, whenever the topic is discussed, there is almost always an immediate and universal lack of agreement among educators as to what constitutes competence and how to describe it. Among supporters and skeptics alike, *presumptions about competence-based programs are confused because of the many different views concerning the meaning of the word competence itself.* To some, competence is seen as the application of knowledge; to others, it is knowledge and skill combined; still others maintain that knowledge and skills constitute separate competences. Some equate competences with behavioral objectives; others see competences as more global and general in concept. Some hold that a competence, like a behavioral objective, demands a very specific set of knowledge; while others state that competences address only broad process skills that are essentially content and knowledge free. Some claim that only directly measurable performance comprises competence; while others maintain that unexpected and unmeasurable learning outcomes are included in the concept of competence. With these and other fundamental disagreements, it is understandable that there is a wide range of opinion about the form and the merits of competence-based education.

Over the years, during my involvement in the development and evaluation of competence programs, I have gained some insights that have helped me to resolve some of these seemingly contradictory positions.* Out of that experience, a defini-

*Particularly important to that process have been my past three years as a member of the staff of the College of Public and Community Service of the University of Massachusetts at Boston.

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tive structural model of the concept of competence has slowly evolved that, for me at least, provides *a rational framework from which to proceed.* That model is presented here in the hope that it may prove useful to others as well.

Some Basic Definitions

Criteria—specify what the student must do to demonstrate competence in terms of the kinds of knowledge and skill that must be displayed.

Standards—specify the level of knowledge and skill that must be demonstrated to constitute competent performance.

Competence—sufficient means for one's needs (Webster's); the ability to do well something worthwhile; the knowledge, skills, values and attitudes needed to carry out properly an activity important to success in one's personal or professional life; the ability to meet or surpass prevailing standards of adequacy for a particular activity.

Competence-Based Evaluation (criterion-referenced)—based on publicly stated criteria and standards that a person must attain to be certified as competent; takes *no* cognizance of when, where or how the competence was acquired; students are judged against agreed-upon, preset criteria and standards.

Competence-Based Education—derived from and organized around an agreed-upon set of competences, and which provides the learning experiences designed to lead to the attainment of those competences.

Knowledge—identifications, differentiations, concepts, classifications, rules, principles, processes, operations and strategies; the who, what, when, where, how and why; the informational basis for a skill.

Skill—the ability to carry out a purposeful activity with facility; the proficient application of knowledge and process to a task.

Values—ideals and purpose held in high regard; concepts and principles of particular importance and worth to the individual, a group, a society or a culture; the basis for attitudes.

Attitude—the set of mind or disposition to react to, and to take action for, a particular value or purpose.

Learning—the attainment of a new capability; the ability to do something that one could not do before; demonstrated by a new behavior encompassing new knowledge, skills, values and attitudes.

Experiential Learning—knowledge and skills gained from sources other than formal instructional programs: i.e., internships, on-the-job training, travel, projects, tasks, roles, parenthood, etc.

Generalizable Learning—generalizable concepts, principles and processes that can be transferred from one context or content area to another; the application of a previously learned competence to a new subject area or context.

A Taxonomy of Competence

Familiarity with the above basic definitions only lays the foundations for a working definition of the concept of competence. The major problems are not resolved by such abstractions. When one is faced with the practical task of recasting a curriculum in the form of competences, of writing descriptive statements of competence, one is still faced with the dilemma of the specific versus the generic, the generalizable versus the specialized, the narrow versus the global, the limited versus the open-ended. How broadly or how narrowly does one describe a particular competence? The answer is that it depends—*the degree of specificity depends directly on the particular educational purpose the description of competence is to serve.* The broader the educational purpose, the broader the description of competence. The narrower the educational purpose, the narrower the description of competence. Thus, the dilemma of specific versus generic is resolved when one realizes that a range of specificity is needed. What emerges is a graduated set of descriptive categories in which *the specificity of competence description varies with the level of educational function:*

General *Generic Competences* (Basic): fundamental to all human activity.
Example: Can use rules, principles and procedures in standard and familiar contexts to produce desired solutions, findings and outcomes for required tasks and activities.
⇩ *Definitive Competences* (Global): institutional level description.
Example: Can assess one's own values, qualities, decisions and actions critically and objectively to generate self-awareness and conscious choice.
⇩ *Enabling Competences* (Educative): departmental level description.
Example: Can analyze a significant individual choice in which values are in conflict.
⇩ *Learning Objectives:* course level description.
Example: Can describe personal values that bear on a decision to have a small family.
Specific *Behavioral Objective:* learning module level description.
Example: Can distinguish between personal, group, social, implicit and explicit values.

Two separate but interacting trends are involved in the shift from the general to the specific. First, the knowledge or *subject area component proceeds from the very general to the very specific.* Secondly, although the actions or performance called for are specifically stated, the *skill component proceeds from highly generalizable processes to narrow, non-generalizable skills.* Because competence is comprised of both knowledge and skill, the application of knowledge and the gradations of competence within the taxonomy result from the interaction of the knowledge and skill components. Thus, the descriptive categories of competence range from highly generalizable process skills (Generic Competence) which can be learned and applied in any content area or context, to those that are narrow and less generalizable skills (Behavioral Objectives) which are content and context specific.

There is also a direct functional relationship between adjacent levels, as evidenced by the examples. Proceeding down the set, from the very general to the very specific, *each level of description is a more specific subcomponent derived from the more general level preceding it.* With each successive subdivision, the description of competence becomes narrower and more specific. Moreover, the kind of performance required gets progressively less complex, hence more readily specifiable and more directly measurable.

Generic Competences are basic to all learned performance. The model used is based on Robert Gagne's hierarchy of learned performance outlined in his influential book, *The Conditions of Learning* (1965): Simple Responding, Motor Chaining, Verbal Chaining, Discriminating, Classifying, Rule Using and Problem-Solving. Proceeding from the simple to the complex, each type of learned performance comprises a different process carried out for a different purpose. Each type is derived from and incorporates the preceding capability and each, in turn, is prerequisite to the next higher capability. These fundamental skills *provide the basis for every human activity.* Every activity we carry out can be analyzed in terms of these elements of performance. These are fundamental skills that cut across all content areas. The first four—Simple Responding, Motor Chaining, Verbal Chaining and Discriminating—are not generalizable activities; they are content and context specific and the product of rote learning. However, the last three—Classifying, Rule Using and Problem-Solving—are highly generalizable activities (if correctly taught) that are not dependent on any particular content nor context and are the product of meaningful learning. Of course, these processes cannot be learned nor exercised without content and a context of some sort, but these complex skills do not need a particular content nor context. Thus, while not content free, the last three

capabilities are *generalizable processes. that are independent of any special area of knowledge or circumstance.* The following is a restatement, in competence format, of Gagne's hierarchy of generic learned performance:

- *Simple Responding*: Can reproduce simple, isolated responses such as new vocal sounds, written symbols and simple actions; with no meaning attached.
- *Motor and Verbal Chaining*: Can reproduce linked, fixed-order chains of physical and verbal responses composed of associated words or motions; without meaning attached.
- *Discriminating*: Can discriminate among similar or confusable pairs and groups of objects, words, actions, symbols, etc., by indicating distinguishing features; not class nor conceptual differences.
- *Classifying*: Can classify things, events, ideas, phenomena, etc., by their common distinguishing physical or abstract properties and functions to form concepts.
- *Rule Using*: Can use rules, principles and processes in standard and familiar contexts to produce desired solutions, findings and outcomes for standard tasks and activities.
- *Problem-Solving*: Can solve unfamiliar problems in new contexts by recalling and recombining two or more relevant rules, principles or processes to create a higher order process.

The kinds of learning outlined by Gagne are particularly relevant to competence-based programs because *each type derives from, and is described in terms of, a specific performance capability.* The resulting hierarchy of performance provides the curriculum developer with a rational basis for instructional design decisions. Of course, there are some general principles that can be applied to facilitate learning. However, good instructional design calls for the selective application of those general principles because different kinds of learning require different conditions. But that whole discussion is beyond the scope of this article. The importance of the hierarchy in this context is that it can also be used to categorize competences according to performance levels, which has implications for evaluation methods as well as instructional design. The parallelism between the taxonomy of competence set forth in the previous section and the hierarchy of learned performance outlined in this section is no doubt self-evident. Of course, the parallelism is not accidental, for *the taxonomy was modeled directly on Gagne's hierarchy.* However, the two models are mirror images of each other, for the taxonomy represents a curriculum development process that proceeds from the generalizable to the specific, and

the hierarchy represents a learning process that proceeds from the specific to the generalizable.

Definitive Competences (institutional level description) are global in that they are deemed universal to the needs of all students of a major educational program or institution, such as a four-year secondary school program or a college-level degree program. As such, definitive competences always derive directly from institutional goals. They are definitive in that they define the major thrust and the general content of the curriculum. They also are definitive in the sense that they *present a complete, integrated and coherent definition of the institution and its graduates in some eight to twelve powerful one-sentence statements.* The definitive competences are couched in terms of life-long process skills that derive from overall program or institutional (society's) goals. They reflect the concept that life is a continuing process of learning and developing. Therefore, because they are forward-looking and goal-oriented statements, *they describe on-going developmental processes rather than states-of-being or accomplished ends.* Definitive competences address such universals as Valuing/self-awareness; Relating/self and others; Communicating/language and logic; Collaborating/group dynamics; Inquiring/methods of inquiry; Developing/developmental processes; Commiting/social consciousness; Helping/social action; etc. The following is a sample set of definitive (global) competences for a hypothetical degree program in Human or Social Services.

- Can assess one's own values, qualities, decisions and actions critically and objectively to generate self-awareness and conscious choice (VALUING/Self-Awareness).
- Can appraise one's perceptions of and interactions with others candidly and impartially to foster accepting and caring relationships (RELATING/Self and others).
- Can organize ideas logically and persuasively in all modes of expression to communicate with others (COMMUNICATING/Language and Logic).
- Can participate actively and sensitively as both a group member and as a group leader to facilitate group functioning (COLLABORATING/Group Dynamics).
- Can use the various methods of inquiry inherent to the Humanities, the Social Sciences and the Natural Sciences selectively and precisely to sustain life-long learning (INQUIRING/Methods of Inquiry).
- Can debate knowledgeably and convincingly the origins and the import of the major ethical, social, political and economic issues

to support one's personal commitment (COM-MITING/Social Consciousness).

- Can employ generalized planning, organizing and problem-solving processes systematically and creatively to promote developmental change (DEVELOPING/Developmental Processes).
- Can apply current environmental and social science theory and practice appropriately and thoughtfully to improve individual and community well-being (HELPING/Social Action).
- Can carry out the specialized management and organizational tasks and roles effectively and efficiently to advance a chosen career in Human or Social Services (ADVANCING/Career Development).

Note how the descriptions always include a statement of both the process and the goal, with the goal being a process itself. Each definitive competence describes *a capability to carry out a particular process for a particular worthwhile purpose*. Moreover, each statement describes in general terms what is meant by competent performance. Such global competences imply certain knowledge, skills, values and attitudes, but do not specify them in detail. They also imply certain criteria and standards, but do not specify them. The definitive competences are context specific only in the broadest sense and certainly only in interdisciplinary terms. *Global competences cut across broad areas of subject matter and can be acquired and applied in a wide range of contexts.*

Even though each competence describes a different process, carried out for a different purpose, note how *highly interrelated and interdependent* they all are. Looking over the entire set, one can see that the emphasis gradually shifts from the area of personal development (inward looking) to the area of social and occupational development (outward looking). Likewise, there is a gradual shift in emphasis from the Humanities, through the Social and Natural Sciences, to professional preparation. It is difficult to say where one leaves off and the other begins. Moreover, note that *only the emphasis shifts, because no one competence can be identified exclusively with any one point on what amounts to a continuum of capabilities.* What emerges is a generalized description of the individual development process that proceeds from the fundamental to the specialized, from the generalizable universals to the specialized application of those universals; with each component competence deriving from the preceding and, in turn, building toward the next.

The emphasis of Valuing is certainly on inward-looking personal development. Valuing draws heavily on the Humanities; however, Valuing plays an important role in one's choice of a career and in the resolution of the inevitable ethical problems faced during that career as well. Likewise, the emphasis in the Helping process is on the knowledge and skills derived from Social and Natural Sciences, but Helping intersects with Valuing and Relating. In fact, even a cursory examination reveals that every one of the definitive competences intersects and interacts with every other one in the set. The intersections and the interactions are an expression of the creative tensions that are inherent to living, learning and developing. *The coherence of a competence-based curriculum derives from, and is dependent on, the integrative interactions among the definitive competences.* Thus, definitive competences, such as described above, are the crucial starting point of the curriculum development process. The definitive competences are the foundation on which the entire curriculum structure must be built, and that structure is only as strong as the foundation upon which it rests.

As the starting point, the definitive competences must be broken down into a series of more specifically detailed sub-competences. The component knowledge and skills (the criteria) that cumulatively make up the definitive competences are set forth as subordinate "Enabling Competences," the next level of description. Because the global competences are so broad and comprehensive, students cannot be evaluated for them directly, nor by a one-time evaluation event. Rather, the component enabling competences that comprise each definitive competence are evaluated both formatively and summatively across several content areas and contexts. Thus, the enabling competences are, in fact, the criteria used for judging the attainment of the antecedent global competences. By demonstrating the component set of enabling competences, a student therefore demonstrates the overarching definitive competence from which they derived.

Enabling Competences (departmental level) are educative in the sense that they describe, in general terms, the knowledge, skills, attitudes and contexts through which students can demonstrate the definitive competences. Note, however, that the emphasis is on the demonstration and evaluation of competence, not on the acquisition of competence. In the most basic sense, the concept of competence is primarily concerned with evaluation methodology and approach. That emphasis makes sense when one understands that the most fundamental and significant change brought about by incorporating the concept of competence within the educational process is that it *requires criterion-referenced evaluation*. All other characteristics of

10

competence-based education follow from that basic principle.

As discussed earlier, enabling competences are deduced from definitive competences. Each global competence is analyzed to identify those component capabilities judged most important to its make-up. Of course, what is judged important will depend considerably on institutional goals, just as the definitive competences reflect these goals. No matter how carefully done, the analytical process may be reductionist to some degree. However, the chances are that when students can demonstrate the prescribed set of subordinate enabling competences, *the completed whole will, in fact, be greater than the sum of its parts*. The creative tensions that arise naturally from the interactions among the competences probably assure that hoped-for outcome.

Space will not allow listing complete sets of enabling competences that might be derived from the global competences outlined above. Thus, the following are only suggestive of the range of subordinate capabilities that can be broken out. For instance, a partial listing of sub-components of Valuing might include the following:

- Can identify and describe the various types of values within the context of literature, social issues and historical events.
- Can interpret a significant individual choice in which values are in conflict.
- Can relate changing role models to changing cultural values.
- Can describe the content, form and sources of one's own value system.
- Can weigh others' actions in the light of their individual value systems.
- Can convey one's sense of values to others.
- Can analyze the process of change in a significant personal value over time.
- Can analyze the ethical concerns and values associated with changing personal identity.
- Can interpret the values associated with a particular job in the past and today.
- Can delineate the extent and limits of individual responsibility in an institutional and social setting.
- Can compare the formal ethical standards for a particular work role for a specific situation with one's personal standards.

The above are only some of the many possible enabling competences that can be drawn from the global Valuing competence. Note how the majority emerge from the intersections between Valuing and other global competences. In fact, using a matrix (see Figure 1) to actually display the intersections among all the competences proves to be a powerful developmental process for systematically exploring the entire range of potential creative interactions. The decimal numbers in each box identify the intersections.

Accordingly, intersection #1.2 (Valuing vs. Relating) produced the following enabling competence from the list above: "Can weigh others' actions in the light of their individual value systems." Likewise, "Can convey one's sense of values to others" is the product of intersection #1.6 (Valuing vs. Commiting). However, not every intersection produces meaningful interactions. In some cases, interactions bring to mind a whole series of competences that are judged to be important. In all likelihood, however, using the matrix will produce a large number of potentially useful competences, and so choices will have to be made. Properly, *the character of the competences created and chosen for inclusion in the curriculum will reflect the goals and commitments of the institution.*

To illustrate the process further, the following list of sample competences is the product of the interactions between Developing and the rest of the matrix. Each competence is labeled by its corresponding intersection decimal number.

#7.1—Can relate the goals and objectives of a proposed developmental change to social and personal values.

#7.2—Can consciously alter behavior toward others to accommodate their needs.

#7.3—Can develop a topic outline to organize a paper advocating a position. .

#7.4—Can analyze the developmental stages followed by a "task group" to attain its goal.

#7.5—Can evaluate research methods, data and conclusions to resolve conflicting scientific claims.

#7.6—Can develop a reasoned argument for an ethical stand.

#7.7—Can describe in detail the steps needed for a generalizable problem-solving process.

#7.8—Can use a recognized therapeutic approach and method to effect change within an individual.

#7.9—Can design a program evaluation plan for a social service agency.

The above constitutes only a selected sample of many possible combinations derived from the matrix. No doubt, readers will come up with other versions that reflect their own priorities and areas of expertise. That is as it should be, for an enabling competence should indicate, in general terms, the content area chosen as the context in which the competence must be addressed. Note, however, that *the content area is specified only in general terms*. For instance, competence #7.9 above calls

Figure 1

Matrix of Intersections
Among Competences

	Valuing	Relating	Communicating	Collaborating	Inquiring	Committing	Developing	Helping	Advancing
Valuing	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Relating	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
Communicating	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
Collaborating	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
Inquiring	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
Committing	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9
Developing	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9
Helping	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9
Advancing	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9

for an evaluation plan for a social service agency, but does not specify a particular plan for a particular type of social service agency. The agency could be one that deals with housing rehabilitation programs or it could be concerned with family planning services. Likewise, competence #7.8 does not specify which therapeutic approach must be used nor does it specify what kind of behavior must be changed.

Although enabling competencies specify only general subject matter contexts, they are much more specific about the transferable process skills to be addressed—can *design* and *implement* an evaluation plan; can *use* a particular therapeutic approach *to change behavior*. Therein lies a major strength of competence-based programs. Contrary to the expectations of many educators, competence programs can allow considerable freedom of choice for both faculty and students; more than most discipline-bound curricula. By not being specific about content area (remember, this is

departmental level description), *subject matter emphasis is left to be determined by faculty and student interest and experience*. Faculty and students must address the generalizable process component of the competences, but they are free to use a range of subject matter within the general boundaries set by the competence. For instance, "Can relate changing role models to changing cultural values" could be addressed by a wide range of courses, such as "The Literature of Women," "The Black in America," "The Family Today" or "Sexual Politics," to name just a few. Actually, in a well integrated curriculum, *many of the enabling competences should be encountered in several different contexts* to broaden the application and the transferability of the basic concepts, principles, and processes involved in each. Note also that each of the listed courses springs from a different discipline—Literature, History, Sociology and Political Science. Moreover, the emphasis on process and the flexibility on subject matter

provides a means for recognizing and legitimizing experiential learning—life experience as well as organized field study.

As can be seen by the discussion to this point, the definitive competences determine the overall shape of a curriculum, but the *enabling competences are the curriculum*. Although they primarily specify what the students must do to be certified as competent, they also determine the general form and the content of instruction. To serve either function properly, the enabling competences must be described in more detail than discussed so far. The required details are supplied in carefully circumscribed statements of the criteria, standards and conditions the students must meet when demonstrating their competence. Thus, the next important step in the developmental process is to generate valid criteria and standards for each enabling competence. However, before getting into that rather complex issue, it is probably best to continue the present discussion by briefly discussing the two levels of competence description not yet addressed; namely, Learning Objectives and Behavioral Objectives.

Learning Objectives (course level description) describe the particular subject matter and the specific skills chosen as the context through which an enabling competence is to be addressed. They depict a sequential set of learning steps for acquiring the requisite knowledge and skills that make up the enabling competence. These are the knowledge and skills that must be displayed when demonstrating the competence; which, in fact, are the criteria that must be met during evaluation. Thus, *learning objectives are directly derived from the set of criteria already established for the competence.* (The process for establishing criteria and standards will be discussed in a later section.) This relationship parallels that between the enabling competences and the definitive competences because the enabling competences are, in fact, the criteria for achieving the definitive competences.

The choice of context might be made jointly by the departmental faculty; it might be made by an individual faculty for a particular course or it might be made by a student in consultation with a faculty advisor when planning independent study. In some cases, depending on institutional philosophy and goals, the choices of specific content may be very limited; in others, the choices may be wide open. That is a decision the institution must make for itself. In any event, it is only at the level of learning objectives that competence is described in terms of specific subject matter and explicit skills. For instance, two of the criteria for the enabling competence "Can interpret a significant

individual choice in which values are in conflict" might be:
  • Can explain why the choice is significant.
  • Can identify the conflicting values involved in the choice.
Converted to specific learning objectives they might appear as follows:
  • Can explain why deciding to have a small family is a significant choice.
  • Can identify the personal and social values in conflict in the decision to have a small family.

Obviously, there are many other significant individual choices that can serve as contexts for examining values in conflict. As pointed out earlier, *the choice of context depends on the priorities of the institution.*

Behavioral Objectives (learning module level description) describe the very specific knowledge and skill components, essentially the sub-objectives, that result from breaking down the learning objectives. The format follows that which was prescribed by Mager. They describe exactly what the students are to do, exactly how well they are to do it, and under what conditions. When correctly detailed, behavioral objectives read like test items. Consequently, *they serve both as short-term objectives and as items in end-of-lesson or end-of-learning-unit practice quizzes or exercises.* The learning objective "Can identify the personal and social values in conflict in the decision to have a small family" could be broken down into the following behavioral objectives:
  • Can correctly match the terms, personal value, group value and social value with their definitions.
  • Can list at least five strongly held personal values.
 • Can list at least five important values held by a group to which you belong.
Thus, the behavioral objectives are the end-product of a curriculum development process that proceeds from the most general to the most specific competence description. Of course, the reverse of that process becomes a route map for acquiring and demonstrating the successive levels of competence. A rather stylized and simplified picture of that process appears in Figure 2.

Determinants of Competence

As discussed earlier, the enabling competences actually determine the general form and content of evaluation and instruction; and, if they are to serve that function properly, their criteria, standards and conditions have to be described in detail. The problem revolves around the need to describe in functional terms a competent person, or more properly, competent performance. That is not an

Figure 2

Curriculum Development Process

DEFINITIVE COMPETENCE

ENABLING COMPETENCES

LEARNING OBJECTIVES

BEHAVIORAL OBJECTIVES
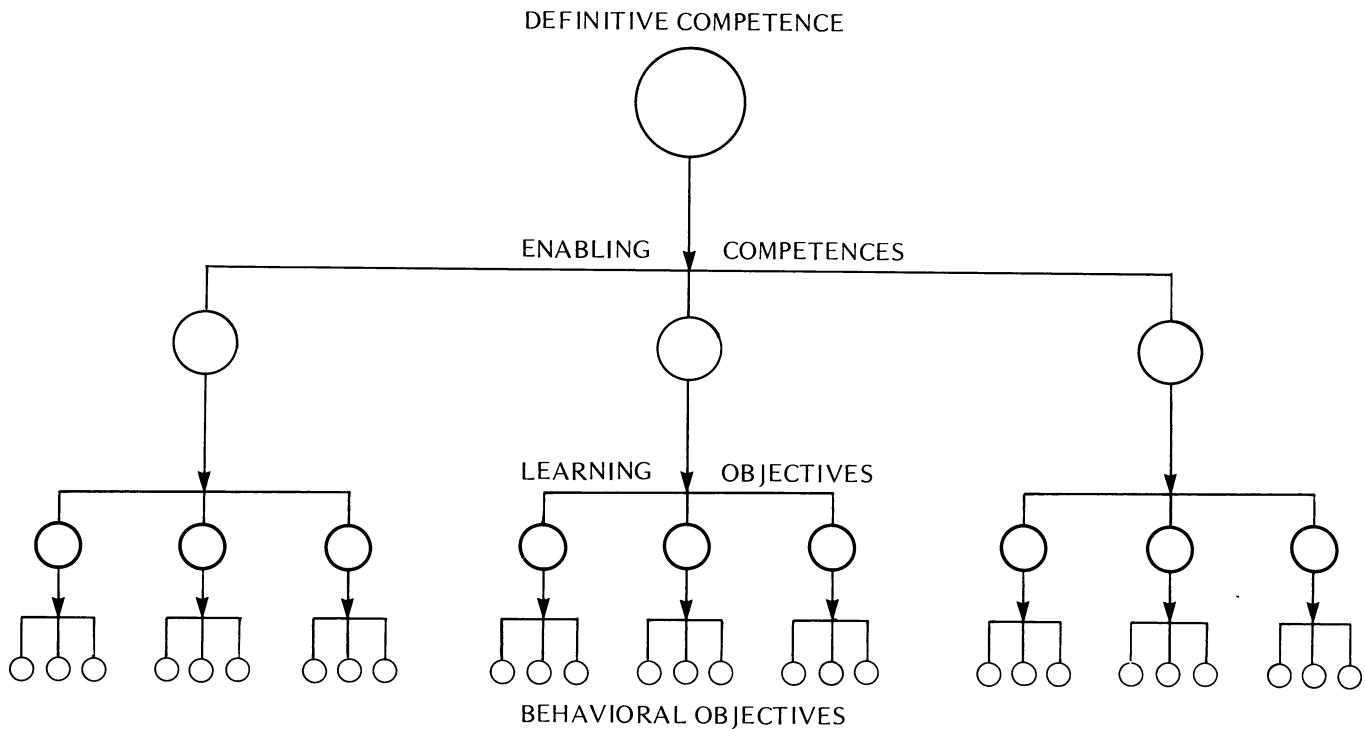
easy task, but a competence-based program stands or falls on the outcome. *Setting the criteria, standards and conditions of competence is the final but most important step in curriculum development process.*

Analysis of what is generally understood as competent performance seems to reveal six major aspects of the concept. When describing competence one has to determine:

- the kind of knowledge required
- the kind of skills required

    } criteria (qualitative)

- the extent of knowledge required
- the range of application required

    } standards (quantitative)

- the degree of self-sufficiency required
- the level of authority required

    } conditions (regulative)

Thus, to arrive at a complete operational description of competence one has to consider all six of the key determinants.

- *The Specific Kinds of Information.* The particular issues, themes, topics, propositions, points, positions, etc., that must be addressed and on which the students are to be checked specifically. Although suggestive of a specific subject matter area, the criteria do not necessarily limit choice of context.
- *The Specific Kinds of Skill.* The particular actions, steps, procedure, process, etc., that are to be carried out. Although there may be a choice of context, there should be no ambiguity as to the kind of skill to be displayed.
- *The Extent of Knowledge.* The amount of basic information and the extent of the related and background information that must be cited.
- *The Range of Application.* The number and the kinds of contexts from which examples must be drawn, in which the processes must be demonstrated, or in which the problems have to be solved.
- *Degree of Self-Sufficiency.* The degree to which students have to carry out the demon-

14

stration without advance knowledge of the specific context, collaboration, assistance, intervention, guidance or supervision of any sort.

- *Level of Authority*. The level of supervision or direction the student must exercise over others.

Interestingly, the list of determinants seems to compose a highly interdependent hierarchy. Each component serves in turn as the basis for, and is integral to, the next component. Moreover, the degree of command over the preceding determinant appears to control and set an upper limit on the succeeding determinant. That is, the lack of basic information limits the ability to carry out the activity; the lack of skill in carrying out the activity limits the ability to draw upon related background knowledge; inability to cite related information limits the ability to apply the skill across the range of contexts; inability to apply the process across a range of contexts limits the degree of self-sufficiency; and a low level of self-sufficiency limits the degree of authority that can be exercised.

The six determinants group themselves into the three major descriptive categories used to detail the enabling competences:

- *Criteria*—what has to be demonstrated; both knowledge and skill (qualify).
- *Standards*—how well they have to be demonstrated; both knowledge and skill (quantify).
- *Conditions*—the conditions under which the demonstration has to be carried out (regulate).

Each of the major categories, in turn, can be broken down into several sub-categories that provide a framework and guide for writing the detailed descriptions of competences that make up the curriculum. The list is comprehensive; but, realistically, not all elements will be needed for every competence. However, each element should be considered, and each competence should be examined from every perspective, even though all may not be used. In all cases, what is stated is the *minimum acceptable level or degree* of each element; although, in some cases, it may be desirable to describe maximum upper limits as well.

Criteria	Standards	Conditions
1. Knowledge	1. Quantity	1. Context
2. Skills	2. Complexity	2. Controls
3. Correlates	3. Range	3. Preparation
4. Contrasts	4. Detail	4. Assistance
5. Organization	5. Accuracy	5. Collaboration
	6. Time	6. Leadership
	7. Documentation	

Criteria

1. *Knowledge*—the specific kinds of information that must be displayed.

2. *Skill*—the specific kinds of activities that must be carried out.

3. *Correlates*—the kinds of relationships among associated concepts, examples, applications, solutions, etc., that must be dealt with.

4. *Contrasts*—the kinds of contrasts among differing concepts, examples, applications, solutions, etc., that must be dealt with.

5. *Organization*—the kind of format or organization that must be used when demonstrating the competence.

Standards

1. *Quantity*—the number of concepts, examples, applications, solutions, etc., needed.

2. *Complexity*—the number of factors, components, elements, etc., that must be dealt with simultaneously.

3. *Range*—the limits to the contexts that are to be dealt with.

4. *Detail*—the level of detail needed.

5. *Accuracy*—the number and definition of correct performance.

6. *Time*—the total time or rate of activity allowed or required.

7. *Documentation*—the kind of substantiation required for facts, data, statements, references, etc.

Conditions

1. *Contexts*—the kinds of contexts or content areas from which the concepts, examples, applications, solutions, etc., must be drawn.

2. *Controls*—this applies to test-like evaluation situations; whether it is monitored or unmonitored, a take-home test, whether the case studies used are controlled materials, open book, etc.

3. *Preparation*—the kind of preparation required or allowed; whether or not the demonstration can be prepared in advance; whether it has to be off-the-top-of-the-head, off-the-cuff performance, etc.

4. *Assistance*—the amount of intervention or guidance by the evaluator that will be allowed or required; in some cases the demonstration might have to be supervised by an expert.

5. *Collaboration*—the amount and kind of collaboration (team work) with other students allowed or required while preparing or demonstrating.

6. *Leadership*—the kind and extent of leadership or direction to others that must be given by the student during demonstration.

Describing an Enabling Competence

The concept of competence becomes operational when one goes about the task of writing the

detailed descriptions of the enabling competences. These descriptions become the working documents that form the competence-based curriculum. Competence programs describe their curricula by means of these detailed descriptions of competence, in contrast to discipline and content oriented programs that rely largely on course descriptions. The format of the descriptions is important because they are the primary instruments for addressing the curriculum for faculty and students alike. Hence, the descriptions should be presented in a logical, coherent and concise form. The following model format is patterned after the steps involved in the competence developmental process itself. The headings and sections follow a logical sequence; that is, one usually starts by considering the need for a particular competence; then the competence statement itself is derived; the criteria are spelled out next, the standards are developed, then come the conditions for evaluation, and finally the method of evaluation is decided upon. The following is an outline and guide for preparing the detailed write up of an enabling competence.

- *Competence Title:* (short title).

- *Rationale:* a paragraph giving the *justification* for the competence; explains its *utility and validity* by relating it directly to the competences one needs to be a functioning and successful adult in society; also relates it directly to skills and knowledge needed for *other competences* in the curriculum; both short-term and long-term utility.

- *Competence: generalizable application* of knowledge and skill at global level; does not restrict method nor context for evaluation; usually one verb and one object; describes highest level outcome only; *not learning steps.*

- *Criteria:* major points on which students will be evaluated that are generalizable over different evaluation methods; specify *essential and generalized factors* students must deal with, *process* to be used, and *product* required for demonstrating the competence.

- *Standards:* detail the levels of accuracy and performance required; must clearly state what is *realistically acceptable performance.*

- *Evaluation Methods:* suggested methods and contexts for evaluation; *a range* of practical, reliable, and valid methods and contexts should be offered; should stress evaluation of *process and product equally.*

- *Conditions:* should describe the limitations and conditions under which the student will have to operate while being evaluated.

Completely detailed descriptions of two enabling competences are given in the following Figures. Figure 3 describes a competence that would be part of the General Education requirement for the degree, while Figure 4 describes a competence that would be part of the Career area requirement. Note how they are written directly to the student in an almost narrative style. Note also how the narratives flow naturally from the developmental process and how the descriptions proceed from the general to the more specific. Each section is, in turn, a more explicit statement of what the students must do to demonstrate competence. Notice also how some of the criteria clearly reflect the creative interaction among several of the overarching definitive competences, particularly the interaction between Valuing and Helping indicated by Criteria #3 and Standard #3 for the "Intervening with Individuals" competence. Finally, note that there are some minor differences in format between Figure 3 and Figure 4 (in Figure 3, for example, Standards and Conditions are combined under one heading). This is to indicate that one need not slavishly follow the exact format described in this article. The content of the competence description, rather than the particular format, is the important matter.

Summary and Conclusion

Actually, the sample competence descriptions shown in Figures 3 and 4 comprise the summary and conclusion, for they encompass all the premises set forth in this article. The competence descriptions reflect the principles, the processes, and the product of a systematic attempt to define the concept of competence. All that goes before comes together within those detailed descriptions of enabling competences; they are the end result of an operational definition of competence.   □

16

Figure 3

COMPETENCE TITLE: VALUES AND CHOICE

RATIONALE: In slowly changing societies with deeply-rooted traditions, people do not need to make many choices. They *know* how to behave and what they ought to do. In Western society, technological change challenges our traditions, and creates choices that previous generations would not have thought possible. In addition, we are taught that individual freedom is "the highest good." Your freedom is confirmed by your ability to make choices, to choose according to your own values. The purpose of this competency is the analysis of a choice made in the past; the analysis requires a method of identifying conflicting values, and of finding rules or criteria by which you *rank* (assign to a relative position in a group) factors in a choice. It also requires consciousness of family, social group, and culture as sources of your values. Often the most difficult choices to face us are those in which our acts make clear that our values diverge from the values of people whom we love and who love us. In the course of analyzing a past choice to "do something," our "real" values and their consequences become apparent.

COMPETENCE: Can analyze a significant individual choice in which values are in conflict.

CRITERIA: Your analysis must include:
    1. background or contextual information which explains why a choice was required.
    2. a description of the conflicting values and their sources—both personal and group or social.
    3. the way in which one formulates and ranks important factors in order to choose one set of values over others.
    4. a description and evaluation of the impact of the choice on the chooser, and, if applicable, on any significant others affected by the choice.

METHOD OF EVALUATION: You may analyze a personal choice that you know from your own life, or the significant choice of a character in a novel, play, or movie. In the latter case, the work of art constitutes the "world" of the chooser. Your analysis may be written or oral.

STANDARDS AND CONDITIONS:
    1. A written essay will normally be at least 1000 words; length of oral presentation must be equivalent.
    2. If the presentation is oral, you must furnish the evaluator with an organizational outline of the presentation beforehand.
    3. Evaluators must agree that the choice is *significant.*
    4. Definitions must be consistent.
    5. Choosing must involve "doing something at the time," rather than making a choice to do something in the distant future.
    6. The choice may be a decision not to do something, so long as the options to do the thing were real.

*This competence description was prepared by the Center for Cultural Studies of the College of Public and Community Service, University of Massachusetts at Boston.

Figure 4

COMPETENCE TITLE: INTERVENING WITH INDIVIDUALS

RATIONALE: As a worker in a helping profession, you may be intervening in the lives of individuals. There are a variety of approaches or techniques to choose from, depending on the client, the specific behavior to be changed and your basic assumptions about how people initiate and make changes in their behavior. This competency allows you to choose a particular intervention approach which is of special interest to you. You must examine the theoretical bases of the approach, its terms, concepts and techniques, and use it to effect change in your client's behavior.

Figure 4

(Continued)

COMPETENCE: Can use a recognized therapeutic approach and methodology to effect change within an individual.

CRITERIA: Your demonstration must include the following:
1. identification of the problem issue, or behavior to be dealt with;
2. a thorough assessment of the problem;
3. consideration of the ethical issues involved in making an intervention in this situation;
4. demonstration of an adequate understanding of the principles and techniques of the specific approach employed;
5. the implementation of a plan for intervening that uses the techniques and principles of the specific approach chosen;
6. demonstration of your ability to communicate effectively with the client;
7. a record of progress made in the intervention;
8. critical appraisal of the plan and ongoing revision where necessary;
9. final evaluation of the intervention.

STANDARDS:
1. Identification of the problem must include a specific description of the problem and those affected by it (who will gain from the intervention?).
2. Your assessment of the problem must include possible causes, possible consequences, detailed information about the history of the problem and the context in which it exists before your intervention. The sources of your information should be reliable, and direct observation of the problem should be used where possible.
3. Ethical issues which must be considered prior to any intervention on your part are: You must determine that you are the appropriate person and that this is the appropriate time to intervene. You must prove beyond a reasonable doubt that your personal values do not conflict with or interfere with the client's interest.
4. Your choice of intervention method must be in harmony with your personal style of interaction and with the client's needs.
5. You should demonstrate general knowledge of the major theoretical bases, concepts, and terms and techniques which are consistent with current texts on the specific approach you choose.
6. The intervention plan should include a statement of realistic goals (agreed upon by you and the client, if possible) and all steps (in order) to be taken to reach the goals.
7. Implementation of the plan must be consistent with the techniques and principles of the method chosen.
8. Records of the progress of the intervention could be either in the form of written progress reports, charts of direct observation of behavior, or records kept by the client. They should indicate clearly that you, as intervenor, have been attentive to the effects of your intervention on the client during the process of the intervention.
9. The final evaluation of the intervention must include assessment of the positive and negative aspects of the intervention, your strengths and weaknesses as the intervenor, any revisions made, and proposals (with rationales) for changes in the intervention which might improve its effectiveness. There should also be a discussion of the results of the intervention: Did change occur in the individual? Why or why not?

METHOD OF EVALUATION: You can present an oral or written description of the intervention plan. You should also include in your presentation process notes, behavioral charts, progress reports, tapes of interviews or whatever direct evidence is appropriate to the approach used. Additionally, you must obtain an affidavit from the agency supervisor attesting to your competence in carrying out the intervention.

CONDITIONS:
1. The intervention must take place in a setting acceptable to the faculty advisor, preferably in a recognized agency or other human service setting where a supervisor can evaluate the progress of the intervention.
2. The intervention must be implemented over a minimum of eight weeks or the equivalent.
3. The intervention may be done with others as part of a team under specific circumstances agreed to by the faculty advisor.
4. A detailed outline must be furnished for any oral presentation.

*This competence description was prepared by the Human Growth and Development Center of the College of Public and Community Service, University of Massachusetts at Boston.