

CONCEPTUALIZING: A BASIC PROCESS IN ECONOMIC EDUCATION

Beverly Jeanne Armento

The ways in which we translate reality are, in large part, a function of the ideas we hold. The more powerful, valid, accurate and generalizable our ideas, the more likelihood there is of our being able to accurately, reliably and intelligently assess ongoing events in our lives. Understanding reality is the first step toward being an effective participant and problemsolver within that reality — and toward changing that reality, if need be.

One of the goals of economic education is to provide the idea-base with which we think about economic and/or related issues; this is often referred to as the building of concepts. The learning of basic economic concepts or ideas forms a substantial part of the study of economics and is prerequisite to the successful acquisition of economic principles and problemsolving skills. Conceptualizing is a "freeing" type of learning, for it allows the learner to *generalize* the concept to new and different examples which were not included in instruction (Gagne, 1970) — unlike the less-sophisticated types of learning—signal learning, stimulus-response learning, chaining, verbal association and discrimination learning. Concept attainment, then, provides a substantive framework which enables the learner to classify newly-encountered instances of the concept. In addition, concept attainment facilitates the ability to discern relationships between and among concepts, and aids the learner in identifying cause-effect relationships (Klausmeier, Ghatala and Frayer, 1974). Each of these skills plays a critical role in the attainment of a major goal of economic education, that of effective decisionmaking.

In this article, I shall briefly discuss the nature of economic concepts, student cognitive operations involved in concept attainment and instructional procedures which are likely to facilitate the attainment of economic concepts.

Focus on the Concepts

Since the early 1960s, an emphasis has been placed upon concept learning as a major goal in new curricular programs in the social sciences. It is assumed here that emphasizing knowledge at

conceptual and generalization levels, as opposed to focusing merely at a factual level, would enable learners to build a repertoire of more useful and durable knowledge.

While factual knowledge is not the prime focus of instruction in this approach, it nevertheless plays an important role in concept learning, for facts provide the specific examples and non-examples of conceptual categories. A concept may be viewed as a class or category of "ordered information about the properties of (a particular event) that enables any particular thing or class of things to be differentiated from and also related to other things or classes of things" (Klausmeier, 1975).

One of the major tasks of curriculum developers and teachers is to identify the body of knowledge to be learned. In support of this task, the Joint Council on Economic Education (1977) has identified a list of basic economic concepts which provides the knowledge framework for any sound course or program in economic education. Let's draw upon this list of concepts to illustrate the eight attributes of concepts: learnability, structure, usability, validity, generality, power, instance perceptibility and instance numerosness (Klausmeier, 1975).

Some economic concepts are easier to learn because they have more concrete examples, are defined by simpler rules, and are prerequisite to learning more abstract and complex concepts. Concepts such as goods, services, consumers and producers are defined by fairly straightforward rules and many actual, concrete examples for these concepts are easily identifiable. By contrast, the more difficult concept of the price mechanism is based on certain *relationships* between two other concepts, *supply* and *demand*. The structure of such concepts as price, scarcity and comparative advantage is complex and based on relationships between other related concepts; such relational concepts have proven to be quite difficult to learn (Clark, 1971).

Learnability of concepts is also influenced by certain student and instructional variables. As students mature, and engage in more economic experiences, ease of concept attainment increases

(Clark, 1971; Klausmeier, 1976), and as the degree of ego development increases, ease of concept attainment may increase on more complex concepts (Clark, 1971). In addition, certain teaching procedures have been found to facilitate concept learning; we shall discuss these in a following section.

As a learner attains economic concepts at increasingly higher levels, the concepts become more useful in understanding reality, in formulating economic principles, and in problemsolving efforts. If a learner "really" understands a concept, he is able to generalize the concept to all new examples. To be able to recognize cause-effect, probability, and axiomatic relationships among concepts or to be able to apply the concept to problem situations involves a more sophisticated and in-depth command of the concept (Klausmeier, 1975). An aim of the spiraling approach to curriculum development in economic education is to provide the student with a more *usable* form of economic understanding; that is, earlier concept learning provides a preparation for later, more formal concept development. Concepts become more accurate, precise and stable over time, as the student experiences the concept in new settings. The earlier perceptual experience gradually leads to grouping and abstract symbolic behavior which is more useful for analysis and problemsolving (Vinacke, 1958).

An aim of economic education is to provide the learner with a more *valid*, accurate body of conceptual knowledge. Economic concepts are precisely defined and economists are in greater agreement over concept definitions than, say, psychologists are over such concepts as "intelligence." As the learner's mental constructions, or definitions for concepts, come closer in agreement with those generally-accepted definitions, one would say that the concepts are becoming more valid.

Many economic concepts are integrally related through their hierarchical arrangements with one another. For example, natural resources, human resources, and capital goods are *kinds of productive resources*. Understanding subordinate, superordinate and coordinate concepts is a major type of concept learning and is easily facilitated as students engage in multiple classifications of concepts.

An economic concept is powerful or important to the extent that it facilitates or is essential to the

learning of other concepts (Klausmeier, 1975). Scarcity and choices are pivotal, powerful economic concepts around which many other powerful and many less-important concepts revolve and are related. Relating new concepts to the more powerful, general ideas is an important aspect of economic education; this enables the learner to see the "big picture" of how ideas are related and of where they "fit" into the total schema.

Every concept has a definition, as well as positive and negative examples; these examples vary in terms of their numerousness and their capacity to be perceived. Economic concepts, whose examples can be physically manipulated and perceived through the senses, are easier to learn — especially for younger children. As children mature, they are able to discern less obvious, more abstract aspects of economic concepts — and are able to do this, increasingly, through verbal means.

Focus on the Learner

While much is known about the cognitive processes involved in concept learning in general, little is known about whether these findings generalize to the specific learning of economic concepts. Likewise, while some recent work has been conducted examining conceptualizing in the naturalistic settings of classrooms, most concept learning inquiries have been conducted in laboratory settings. It is not clear that all of the findings generalize across instructional settings. However, the results of classroom concept learning inquiries have tended to support laboratory-based findings, thus strengthening the generalizability of these results.

Students bring to the classroom a range of economic experience; part of the task of economic education is to formalize the ever-growing body of experiential knowledge which will enable the learner to build more powerful, valid and analytical conceptual tools which will provide the basis for more abstract thinking and problemsolving.

Most studies which have examined the student response variable during concept instruction have found that the greater the involvement of the learner in the verbal and physical manipulation of the concept, the greater the ease of concept attainment (Clark, 1971; Armento, 1978). Younger students appear to perform better as they are allowed to physically manipulate concept examples. Results of



other studies support the principle that students learn concepts with greater facility when they verbalize the important aspects and definitions of the concepts than if they do not engage in such verbalization. In a classroom setting, the implication here is that the student must perform certain cognitive operations upon the materials of instruction in order to achieve concept understanding.

From the work of Klausmeier and others (1974, 1975, 1976), it appears that there are distinct stages in conceptual development and in levels of concept attainment, extension and utilization. Children proceed from a *concrete* level of conceptual thought, where they are able to discriminate objects, one from another, and store and recall the representation of the object, to an *identity* level. At this second stage, the learner recognizes, in a new context, an object as the same one previously encountered. At a *classificatory* level, the student is able to generalize that two or more things are alike in some way. At this level, students are able to accurately identify examples and non-examples of the concept, but are unable to explain the rules or definitions used in the

classification process. At the *formal* level of concept attainment, the student is able to define the concept and can actually evaluate examples and non-examples of the concept in terms of their congruence with the concept definition.

A major task of a continuing program in economic education is to facilitate development through the levels of concept attainment and application. A learner possessing more economic concepts at a *formal* level is more able to transfer these concepts to problemsolving situations.

Focus on Instruction

We have already referred to a number of instructional "do's" throughout this article, but will summarize a few important points here.

A recent investigation on effective teacher behavior during the teaching of the economic concept of specialization to groups of third-, fourth- and fifth-grade students surfaced several promising instructional techniques, each of which is supported by previous research on concept learning. In short, it was found that in classes where teachers (1) provided



concept definitions, (2) provided positive concept examples, (3) reviewed the main ideas of the lesson, (4) included more of the generalizations which defined the concept and its related concepts, and (5) explicitly used more of the vocabulary related to the concept, students demonstrated greater achievement on concept tests aimed to tap classificatory and formal concept attainment. In addition, as the accuracy of the teacher's concept examples and definitions increased, so did student achievement.

These results bring to mind the need for teachers to engage in a form of concept analysis before instruction. One might ask such questions as: What is the concept's definition, as provided by a reliable source? What are some clear and positive examples which will accurately illustrate the critical dimensions of the concept and provide enough of a range so students will understand the scope of the conceptual category? What are some non-examples which would illustrate the boundaries of the concept? What concepts are closely related to the main idea under discussion? How can these be utilized during instruction to stress interrelatedness of ideas? What

specific vocabulary, or concept labels, are essential? What are some *new* examples and non-examples of the concept which can be used following instruction to assess the level of concept attainment?

Each of the above questions deals with a *substantive* analysis of the economic concept to be developed; this is only one aspect of any instructional event. In addition, teachers also make (consciously, or otherwise) *semantic* and *strategic* judgments prior to and during economic instruction. That is, words are selected which are best suited to transmit meaningful ideas to particular learners, and particular teaching strategies are selected to effectively engage students in the essential processes of conceptualizing. The essential processes of conceptualizing are reflected in the abilities evident at each level of concept attainment: concrete, identity, classificatory and formal. Thus, if a group of students were operating at a *formal* level with a particular set of economic concepts, they should be called upon during instruction to cite new examples and non-examples of the concept and to critique these illustrations by applying the concept's definition. In addition, they

should be called upon to apply the concept to the assessment of problem situations.

Undoubtedly, there is a need for this type of concept, learner, and instructional analysis to be included in teacher economic education programs. Being able to effectively *match* the level of concept depth to the student's level of present economic understanding, using powerful teaching strategies, is more than an art. It may be an example of the more efficient use of human resources.

LIST OF CONCEPTS

Basic Economic Concepts

1. The Basic Economic Problem
 - Economic Wants
 - Productive Resources
 - Scarcity and Choices
 - Opportunity Costs and Trade-Offs
 - Marginalism and Equilibrium
 2. Economic Systems
 - Nature and Types of Economic Systems
 - Economic Incentives
 - Specialization, Comparative Advantage and the Division of Labor
 - Voluntary Exchange
 - Interdependence
 - Government Intervention and Regulation
 3. Microeconomics: Resource Allocation and Income Distribution
 - Markets, Supply and Demand
 - The Price Mechanism
 - Competition and Market Structure
 - "Market Failures" — Information Costs, Resource Immobility, Externalities, etc.
 - Income Distribution and Government Redistribution
 4. Macroeconomics: Economic Stability and Growth
 - Aggregate Supply and Productive Capacity
 - Aggregate Demand: Unemployment and Inflation
 - Price Level Changes
 - Money and Monetary Policy
 - Fiscal Policy: Taxes, Expenditures and Transfers
 - Economic Growth
 - Savings, Investment and Productivity
 5. The World Economy
 - International Economics
- Economic Institutions/Measurement Concepts**
1. Amounts versus Rates
 2. Averages and Distribution Around the Average
 3. Real versus Nominal

4. Ratios
5. Index Numbers
6. Tables
7. Graphs and Charts

Concepts for Evaluating Economic Actions and Policies

Broad Social Goals: Freedom, Economic Efficiency, Full Employment, Price Stability, Security, Growth, Other Goals.

Trade-Offs Among Goals

Source: W. Lee Hansen, G.L. Bach, James D. Calderwood and Phillip Saunders. *Master Curriculum Guide in Economics for the Nation's Schools – Part I, A Framework for Teaching Economics: Basic Concepts*, New York: Joint Council on Economic Education, 1977.

References

- Armento, Beverly Jeanne. "Teacher Behavior and Effective Teaching of Concepts," a Paper presented at the American Association of Colleges for Teacher Education Annual Meeting, Chicago, February 1978.
- Armento, Beverly Jeanne. "Teacher Behaviors Related to Student Achievement on a Social Science Concept Test," in *Journal of Teacher Education*. 28:2, March-April 1977, pp. 46-52.
- Ausubel, D.P. and F.G. Robinson. *School Learning: An Introduction to Educational Psychology*, New York: Holt, 1969.
- Clark, Cecil D. "Teaching Concepts in the Classroom: A Set of Teaching Prescriptions Derived from Experimental Research," in *Journal of Educational Psychology – Monograph*, 62, June 1971, pp. 253-278.
- Gagne, Robert M. *The Conditions of Learning*, New York: Holt, Rinehart and Winston, Inc., 1970.
- Hansen, W. Lee, G.L. Bach, James D. Calderwood and Phillip Saunders. *Master Curriculum Guide in Economics for the Nation's Schools – Part I, A Framework for Teaching Economics: Basic Concepts*, New York: Joint Council on Economic Education, 1977.
- Klausmeier, Herbert J. "Instructional Design and the Teaching of Concepts," in Joel Levin and Vernon Allen, editors, *Cognitive Learning in Children: Theories and Strategies*, New York: Academic Press, Chapter Seven, 1976.
- Klausmeier, Herbert J. *Learning and Human Abilities: Educational Psychology*, New York: Harper and Row, 1975.
- Klausmeier, Herbert J., Elizabeth Schwenn Ghatala and Dorothy A. Frayer. *Conceptual Learning and Development: A Cognitive View*, New York: Academic Press, 1974.
- Vinacke, W. Edgar. "Concept Formation in Children of School Ages," in Jerome Seidman, *The Child*, New York: Rinehart and Co., 1958.
- Beverly Armento is Assistant Professor of Education, Georgia State University. She has written extensively on the relationship between teacher behavior and student concept attainment.