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APPLYING COGNITIVE EDUCATIONAL OBJECTIVES TO BUSINESS MANAGEMENT CASES

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ABSTRACT

The value and advantages of using case analysis in management education are clear. The objectives to be accomplished by cases, however, are not so clear. In many instances, cases are selected in a rather casual and haphazard manner, resulting in a less-than-optimal accomplishment of established objectives. Case selection can be made more deliberate, systematic, scientific, and meaningful by first establishing the cognitive educational objectives to be achieved by their use. Such objectives also suggest appropriate roles for the instructor and for the students.

INTRODUCTION

Today's managers are forced to operate and to make decisions in a rapidly changing environment, part of which they can control, most of which they cannot control. To simulate this complex decision-making process in the classroom, many instructors use the case study method. The value of the case method as a pedagogical tool has been firmly established, having evolved during more than 60 years (Copeland 1920). The main strengths of the case method lie in its ability to provide experience in identifying and analyzing opportunities, making decisions, and implementing programs. Through the case study method, theory can be applied to "reality." Cases offer a structured taste of the business environment, which is beneficial to future administrators and business leaders (Barak 1981; Boewadt, et al. 1973; Hughes 1978; Jenkins 1979; Rich 1976; Winer 1979).

The purpose of case analysis is to confront students with the problem of structuring those variables over which they have control into some meaningful configuration, so that they might take best advantage of those variables over which they have no control. The basic problem for the instructor is the selection of cases which are appropriate to the accomplishment of the course's objectives.

This paper attempts to recognize the enormously complex set of relationships involved in the case study method and to provide some general guidelines for instructors in the selection and use of cases for different purposes and for different types and levels of courses. A logical place to begin is with the cognitive educational objectives to be achieved when using cases.

COGNITIVE EDUCATIONAL OBJECTIVES

There is an almost endless array of specific objectives which can be accomplished by the case study method. (Dooley and Skinner 1977; Livingston 1971; McAleer 1976; Winer 1979). In particular, Livingston defines the specific administrative skills to be developed through case study as (a) the ability to identify opportunities and problems to be acted upon (b) the ability to analyze these opportunities and problems (c) the ability to decide what to

do; and (d) the skill to formulate problems which implement these decisions.

Since it is all but impossible to accomplish all possible objectives for any one case, where does the instructor begin? Is there a reliable starting point which offers guidance and a sense of direction when selecting cases for classroom use? It is proposed that identifying the basic cognitive educational objectives before selecting specific objectives will aid the instructor in several ways. Once the basic cognitive educational objectives have been firmly established, specific objectives can be devised, the types of cases appropriate to accomplishing the objectives can be determined, specific cases can be selected, the appropriate pedagogical techniques can be applied.

As an aid in the development of objectives, Benjamin S. Bloom (1956) presents a hierarchy of cognitive educational objectives which begins with the foundation of knowledge and culminates in the ability to evaluate. Bloom's hierarchy of cognitive educational objectives in order from lowest to highest are: knowledge, comprehension, application, analysis, synthesis, and evaluation. Briefly, Bloom defines these six objectives as follows:

Knowledge is the remembering of previously learned materials. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.

Comprehension is the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.

Application is the ability to use learned material in new and concrete situations. This may include application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.

Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relation (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns of structures.

Evaluation is concerned with the ability to judge the value of material (article, data).

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research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

Cognitive educational objectives will differ for successive courses within a discipline. For example, a survey course in management is primarily concerned with knowledge and comprehension of management terminology and concepts, while a capstone management course employs all six objectives, but is mainly concerned with synthesis and evaluation of management programs.

LEVELS OF COURSES

The business curriculum contains at least three levels of courses: the basic survey course, functional courses, and the capstone or business policy course. In the survey course, the intent is to build a firm foundation for succeeding courses in the discipline. At this stage students have little or no knowledge of the field, so they need to learn the language, tools, concepts, theories, and models applicable to managing business functions.

Following the basic survey courses, the functional courses focus attention of specific areas, physical distribution, personnel, production/operations management, managerial accounting, etc. The intent of such courses is to build depth in the area under study.

The capstone management course synthesizes the basic knowledge derived from the survey course with the comprehensive, in-depth knowledge achieved in the various functional areas. This type of course offers a structured, systematic approach to decision making and may use models extensively.

COMPLEXITY OF CASES

Cases can be classified along three dimensions: degree of difficulty, breadth of problems, and depth of problems. Along the first dimension, a case can range from an elementary incident or situation to an advanced and involved situation offering a wide array of information within which the student must separate the relevant from the irrelevant.

Along the second dimension, cases can range from a single-problem case to a multiple-problem case. The single-problem case emphasizes one issue or variable and the analysis includes a plan for that variable. The multiple-problem case may include both general and specific problems. For example, in a multiple problem case, there may be problems or opportunities associated with several management variables, requiring the development of a complete plan.

Considering the third dimension, depth of problems, cases can present problems overtly, making the issues evident to the student. At the other extreme, cases can require analysis, synthesis, and evaluation to uncover latent as well as manifest problems. Advanced work is needed to identify opportunities, construct viable alternatives, and devise

plans for the implementation of solutions.

Considering these three dimensions, cases can be classified along a range of complexity from simple to complex as shown in Figure 2. A simple case is elementary in nature, with limited problem breadth and depth. A complex case is advanced, offering both problem breadth and depth. In the middle of these extremes are moderately complex cases of moderate difficulty with varying degrees of problem depth and breadth. For example, a case may be issue specific, such as physical distribution or production management, having problem depth but not breadth.

THE SELECTION OF CASES

Establishing the cognitive educational objectives for each level of course can aid the instructor in selecting the complexity of cases to be used. Figure 1 depicts the interrelationship among cognitive educational objectives, course level, and case complexity. Examining these interrelationships provides guidance for integrating the three elements. The primary question is what type of case should be used, in what type of course to accomplish the cognitive educational objectives.

Cognitive educational objectives differ for courses as the subject becomes more specific and/or more complex. In the survey course, knowledge and comprehension are emphasized. The student is in the process of learning terminology, concepts, and applications for the business environment. In the functional course, the student is expected to demonstrate extensive comprehension and to vigorously apply what has been learned. In addition, the student should begin the process of incisive analysis. In the capstone management course, critical analysis, integrative synthesis, and comparative evaluation are emphasized. At this stage, the student is expected to meet all six cognitive educational objectives. For example, the student should be able to (a) demonstrate depth of knowledge, breadth of comprehension, and application skills through managerial analysis, (b) complete the design of comprehensive, creative plans, (c) synthesize and formulate new applications and systems, and (d) evaluate the effectiveness of alternative plans.

Just as courses differ in relation to cognitive educational objectives, so do cases. Basic cases call for knowledge, comprehension, and application. Such cases are relatively simple and provide the students first opportunity for application of knowledge. Special purpose cases assume that students are already knowledgeable and able to comprehend and are ready for more thorough applications which include analysis of interrelationships among issues within the case. Complex cases are those replications of reality that require students to analyze, synthesize, and evaluate. Not only do students need to recognize the issues; they need to break the issue into manageable units. Students then offer alternative solutions or approaches and evaluate the quality of those alternatives.

Based on these interrelationships, it is evident that specific types of cases are appropriate for specific types of courses. Simple cases are appropriate for the survey course, moderately complex cases are introduced into a functional course, and complex cases are reserved for the capstone course. With these basic factors as a general guide, the selection of cases for specific courses can be more deliberate, scientific, and systematic for the instructor, and more appropriate and meaningful for the students. For basic

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management courses the appropriate cases emphasize knowledge and comprehension. These objectives can be accomplished through cases such as 'Developing a New Product' and 'Marathon Steel uses a Committee Effectively in Donnelly, Gibson, and Ivancevich (1987, p.299;366); and 'Who's in Charge Here?' in Robbins (1984, p.230). These cases should be implemented in the basic management course to achieve the cognitive educational objectives established by the instructor.

Moderately complex cases that emphasize thorough comprehension, application and analysis can be implemented in functional courses. With these cognitive educational objectives as guidance, the following are selected examples for functional course purposes: 'The Peerless Starch Company of Blair, Indiana in Drucker(1977, pp. 69-74); and "Lordstown Plant of General Motors in Schuler and Dalton (1986, pp. 217224).

At the capstone level the student is expected to achieve all six cognitive educational objectives with emphasis on analysis, syntheses, and evaluation. Complex cases such as 'Days Inns of America, Inc.' in Latona, Weaver, Zigli, and Akel (1984, pp. 405-419); and 'Anheuser-Busch Companies, Inc. (A) and (B) in Pearce and Robinson (1985, pp. 486-527) should be used at the capstone course level. These will enhance the attainment of the instructors goals and prove to be valuable tools in the specific attainment of the all six cognitive educational objectives.

With these basic factors and case examples as a general guide, the selection of cases for specific courses can be more deliberate, scientific, and systematic for the instructor, and more appropriate and meaningful for the students.

INSTRUCTOR/STUDENT ROLES

Establishing cognitive educational objectives for each case also aids instructors in selecting the appropriate pedagogical philosophy to be employed in teaching the case. Dooley and Skinner (1977) identified four instructional approaches practiced with the case method. These four instructor roles are Facilitator, Coach, Quarterback, and Demonstrator. The roles of the instructors under these four approaches range from a nondirective approach as Facilitator to a dominating and decisive role as Demonstrator. The student roles range from intense activity under the 'Facilitator role to passivity under the Demonstrator role.

As a Facilitator, the instructor creates an atmosphere in which students may arrive at their own answers. In the role of "Coach," the instructor takes a more active part in the case and assumes more responsibility for the conduct of the class but still allows students to play their own game." In the role of Quarterback, The instructor calls the signals, takes charge, and provides more direction than the Coach. However, it is up to the students to provide the right answers. In the role of Demonstrator," the instructor lectures, clarifies points, and works through the analysis for the students. The student role is largely passive; it consists of listening, note taking, and asking clarification questions.

Conceivably, the cognitive educational objectives could be accomplished by any one or all four of the instructor roles. However, it appears that the cognitive educational objectives in conjunction with specific course objectives can provide some guidelines for selecting the appropriate instructor role and thereby the corresponding student role.

As shown in Figure 3, if the objective is to impact knowledge, the Demonstrator role appears to be the most appropriate teaching method. For the objectives of comprehension, application, and analysis, the Coach or Quarterback" roles appear to be most appropriate. The Facilitator" role is most appropriate for accomplishing the two highest cognitive educational objectives synthesis and evaluation.

SUMMARY

Many instructors find the use of cases a good way to introduce reality into the classroom. However, to make the most effective use of this pedagogical tool, the enormously complex relationships among courses and cases need to be considered. By establishing the cognitive educational objectives for both the course and the cases to be used in the course, the instructor can select cases most appropriate for accomplishing those objectives. In addition, cognitive educational objectives are useful in determining appropriate roles for the instructor and for the students.

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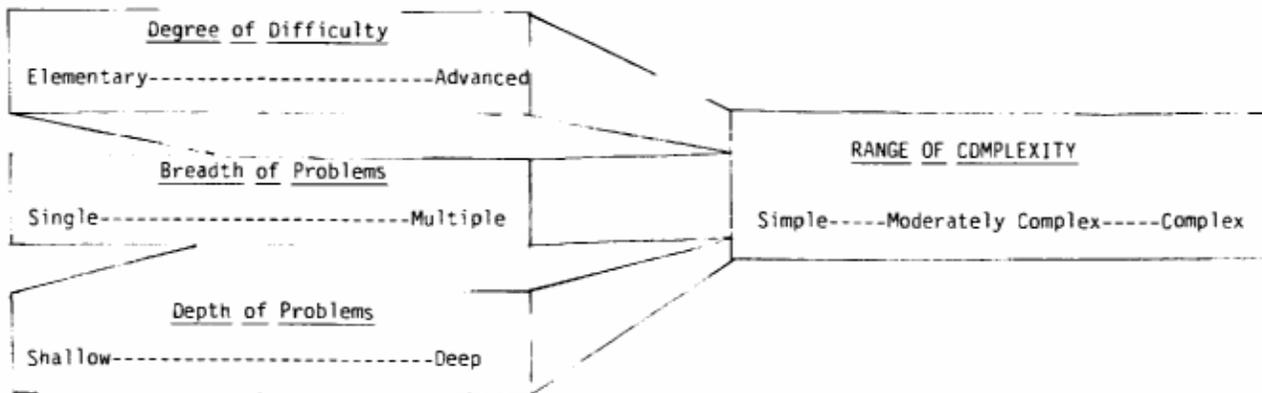
FIGURE 1
Cognitive Educational Objectives
for Course Level and Case Complexity

	<u>Cognitive Educational Objectives/Course Level</u>		
	<u>Survey</u>	<u>Functional</u>	<u>Capstone</u>
Knowledge	M ¹	M ²	m
Comprehension	M	M	m
Application	m	M	m
Analysis	m	M	M
Synthesis	m	m	M
Evaluation	m	m	M
	<u>Cognitive Educational Objectives/Case Complexity</u>		
	<u>Simple</u>	<u>Moderately Complex</u>	<u>Complex</u>
Knowledge	M	m	m
Comprehension	M	M	m
Application	M	M	m
Analysis	m	M	M
Synthesis	m	m	M
Evaluation	m	m	M
	<u>Course Level/Case Complexity</u>		
	<u>Survey</u>	<u>Functional</u>	<u>Capstone</u>
	Simple	M	
Moderately Complex		M	
Complex			M

1 M= Major Emphasis
2 m= Minn Emphasis

FIGURE 2

Factors to be Considered when Selecting Cases



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FIGURE 3
Instructor Roles Based on Cognitive
Educational Objectives

Cognitive Educational Objectives
Instructor Involvement

	Facilitator	Coach	Quarterback	Demonstrator
Knowledge	m ¹	m	m	M ²
Comprehension	m	m	M	M
Application	m	M	M	m
Analysis	M	M	M	m
Synthesis	M	M	m	m
Evaluation	M	m	m	m

1 m= Minor Emphasis
2 M= Major Emphasis