

ILLUSTRATIVE DATA AND IMPLICATIONS: MBA

MBA Student Assumptions About Knowledge and Critical Thinking in the Classroom

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Abstract

The development of critical thinking is currently recognized as an important component of business education. To improve critical thinking development, several researchers have recommended that professors can design more developmentally appropriate coursework if they explicitly assess and address their students' cognitive maturity, which is a function of beliefs about knowledge. Nevertheless, few professors understand the ways in which students' assumptions about knowledge impact the way they respond in the classroom. Without an understanding of students' assumptions, professors are likely to employ developmentally inappropriate assignments and to misinterpret their students' attempts at addressing assignments that require critical thinking (i.e., unstructured problems).

In this paper, I first provide a summary of skills we would like our students to exhibit when addressing unstructured problems. I summarize those skills based on a simplified problem-solving process, which includes: (1) gaining prerequisite knowledge, (2) identifying the nature of the problem, (3) analyzing information and framing the problem, (4) reaching and justifying an opinion about the most viable solution, and (5) re-addressing the problem. Next, I describe ways in which students' assumptions about knowledge are related to cognitive development, which can cause difficulties for students attempting to perform at each stage of the problem solving process. I then briefly discuss ways in which professors can design assignments that are likely to promote their students' critical thinking development. Finally, I summarize and interpret data about the cognitive development of students in two sections of an MBA course. I then offer specific suggestions for MBA professors based on the data reported.

Introduction

The development of critical thinking is currently recognized as an important component of business education. A major part of this recognition has come from companies that hire business graduates. For example, Arthur Andersen & Co., et al. (1989, 6) argued that accounting graduates should be able to:

- *Use creative problem-solving skills in a consultative process*
- *Solve diverse and unstructured problems^[1] in unfamiliar settings*
- *Comprehend an unfocused set of facts; identify and, if possible, anticipate problems; and find acceptable solutions*

In attempting to help students develop these types of skills, many professors utilize coursework that requires students to analyze *unstructured problems* (i.e., problems or cases for which there is no single correct answer). It is assumed that exposure to this type of assignment will develop students' critical thinking. However, as Kurfiss (1988, p. 51), pointed out:

Discrepancies between students' and professors' assumptions about knowledge probably

account for the major share of the frustration both groups experience when critical thinking is required in a course. Models of college students' intellectual development provide a framework for understanding how students come to terms with this discrepancy and what teachers can do to help.

Consistent with Kurfiss' argument, in recent years several researchers have recommended that professors assess and explicitly address their students' intellectual development so they can design more appropriate coursework (e.g., Francis et al., 1995; Wolcott, 1998). Nevertheless, few professors understand that their students' underlying assumptions about knowledge can adversely impact the way they respond to unstructured problems. For example, many students assume that there can be no qualitative differences across alternative arguments, and, thus, they see all points of view as having equal value. Students using this assumption cannot appropriately interpret evidence or objectively weigh alternative arguments, which are necessary components of good critical thinking. Without an understanding of students' assumptions about knowledge, professors are likely to employ developmentally inappropriate assignments and to misinterpret their students' responses to assigned problems.

Further, Das (1994, p. 335) argued that "most of our business school instructors suffer from a false sense of adequacy in their competence to help students in developing critical thinking skills." This type of overconfidence might result from a failure to recognize the limitations of student cognitive development. Thus, many professors need to learn about cognitive development in order to recognize those limitations in their students and learn to adapt their curriculum accordingly.

The purpose of this paper is to help business professors better understand their MBA students and to offer guidance about curriculum designs that are likely to enhance students' development of critical thinking skills. To achieve this purpose, I first provide a summary of skills we would like our students to exhibit when addressing unstructured problems. Next, I introduce the reflective judgment model of adult cognitive development, and I explain what the model suggests about our students' responses to unstructured problems. Finally, I summarize data about the cognitive development of students in two sections of an MBA introductory financial accounting course. I then explain what these data suggest about the design of coursework.

Desired Critical Thinking Skills

Before discussing the impact of cognitive development on critical thinking, this paper first provides a more complete description of the critical thinking skills we would ideally like our accounting students to have upon graduation. What kinds of expectations should we have for students to develop these types of skills? How do student

assumptions about knowledge impact performance? At what point in the educational process should specific skills be achieved? How can professors help their students develop these skills?

To develop such critical thinking, Lynch (1996) argued that professors need to: (1) challenge their students with *unstructured problems*, which lack certainties regarding such factors as the validity and completeness of the data at hand, range of solution options, and outcomes related to various options; (2) develop a better understanding of the sequence of steps their students must learn to successfully address unstructured problems; and (3) challenge their students with developmentally appropriate and increasingly complex assignments. To do this, she suggested that professors think about appropriate solutions to unstructured problems as resulting from increasingly complex sets of problem solving skills. Those sets of skills can be summarized as follows (Lynch, Wolcott and Huber, 1998):

Skills for Addressing Unstructured Problems

1. Skills to solve highly structured aspects of the problem
2. Ability to identify the nature of the problem
3. Competency with tools and techniques for framing the problem
4. Capability for adequately reaching and justifying a resolution to the problem
5. Ability to re-evaluate a resolution to the problem

It is not necessarily easy for students to become expert at the highly structured aspects of problems (e.g., calculations, definitions, authoritative pronouncements and rules, information search). However, this paper will not focus on such skills because they have been a major focus of education research for many years and because adequate performance does not require the highest levels of adult intellectual development.

On the other hand, the abilities of students to adequately identify, frame, resolve, and re-address unstructured problems does require the uppermost levels of adult cognitive development. These skills, presented in Table 1, are the focus of this paper. This set of skills can be used as a guide for measuring the adequacy of students' critical thinking abilities and also to design more appropriate coursework (discussed later in this paper).

FIGURE 1 ABOUT HERE

It is important to note two major characteristics of the set of skills in Figure 1. First, the skills are listed in order

of increasing cognitive complexity. As pointed out by Lynch (1996), competence with earlier skills (e.g., identifying the nature of unstructured problems) precedes competence with higher level skills (e.g., articulating and justifying a resolution to unstructured problems). Second, the set of skills listed in Figure 1 is substantially expanded from the critical thinking skills often recommended in the business education literature. For example, the skills identified by Gainen and Locatelli (1995, Tables 9.2 and 9.3) includes only the highest and most difficult problem solving skills. Developmentally, students are most likely to improve performance when they are given opportunities to attain lower level problem solving skills before being held responsible for adequate performance with the higher level problem solving skills.

The progression from lower to higher level unstructured problem solving skills in Figure 1 corresponds with adult cognitive development as described by the reflective judgment model (King and Kitchener, 1994). In the next section, the reflective judgment model is described concerning how students’ levels of cognitive complexity affect their abilities to develop the skills summarized in Figure 1.

Reflective Judgment Levels, Beliefs About Knowledge, and Implications for Addressing Unstructured Problems

The reflective judgment model identifies a developmental progression of seven qualitatively different sets of assumptions about knowledge.^[2] As King and Kitchener (1994, 19) argue, “these assumptions not only affect how individuals will approach the task of defending a judgment but also how they will respond in learning environments . . .” Table 2 provides the following for Levels 3 through 5 of the model: (1) a listing of desirable problem solving skills, (2) a description of classroom activities which professors can help to promote their students’ intellectual growth, and (3) a summary of key student assumptions that are likely to hamper performance. Table 2 provides a list of key indicators of reflective judgment Levels 3 through 5 that professors might observe in the classroom. Although the reflective judgment model describes seven levels, this paper focuses only on Levels 3, 4 and 5 because these are most commonly observed among college students.^[3]

 TABLE 1 ABOUT HERE

TABLE 2 ABOUT HERE

The following discussion elaborates on the information contained in Tables 1 and 2. The discussion is synthesized from the reflective judgment model as depicted in King and Kitchener (1994, chapter 3), the reflective judgment scoring manual (Kitchener and King, 1985/1996), a developmental guide for helping individuals improve their approach to unstructured problems (Lynch, Wolcott and Huber, 1998), and from my own classroom experiences.

Reflective Judgment Level 3

Level 3: Assumptions About Knowledge and Impact on Ability to Adequately Identify, Frame Resolve, and Re-Address Unstructured Problems

Students operating at Level 3 of the reflective judgment model assume that knowledge is absolutely certain in some areas and uncertain in others. However, they believe that any uncertainties are only temporary. These beliefs prevent students from adequately perceiving the nature of unstructured problems. For example, such students may believe that uncertainties will cease to exist as soon as experts “solve” the problem or as soon as they personally obtain a sufficient amount of knowledge about the subject matter. They fail to understand that it may not be possible to observe all economic phenomena or to understand that experts often disagree about the solution to unstructured problems. In fact, they believe it is the job of experts (including their professors) to come up with the correct answer to all problems.

Because students who exhibit Level 3 beliefs fail to realistically perceive the complexities and ambiguities of unstructured problems, they are unable to adequately frame such problems. They are likely to believe that different points of view are not legitimate or that differences in points of view are unimportant. Many of these students become disillusioned with authorities, whose views they often perceive as capricious. They are also unable to recognize qualitative differences or to evaluate evidence, and they often ignore evidence that is contrary to their own opinions.

Because of the problems described above in recognizing the nature of and framing unstructured problems, students operating at Level 3 do not acknowledge the need to make their own judgments about unstructured problems. They are likely to base their opinions rely on the unexamined opinions of experts or on their own prior beliefs, their “feelings,” or on whim. They sometimes assert that their opinion is “logical,” but they do not use logical arguments to reach or to justify a conclusion.

Level 3: Key Indicators in the Classroom

The type of thinking represented by Level 3 is very common among first and second year undergraduate college

students (King and Kitchener, 1994, Table 6.6, p. 161). Students who exhibit this level of thinking will have a strong tendency to deny ambiguity in business problems. This is particularly true in subjects such as accounting, where their prior perception is that the subject is “black and white.”

Because they often deny ambiguity and don’t understand their need to make judgments, they frequently recast an unstructured problem as a highly structured one. Such students often answer a question of their own making that is qualitatively different than the one posed by the professor. For example, they might list definitions when asked to evaluate the pros and cons of alternative solutions.

Without an adequate understanding of Level 3 beliefs, professors who challenge their students with unstructured problems may be frustrated by the apparent illogic of these students’ arguments and by their ineptitude in addressing complex problems. Students may be perceived as being lazy or as having poor reading comprehension.

At the same time, students may be disconcerted because they do not understand why they should make a judgment, and they are easily overwhelmed by the complexity of issues in unstructured problems. Some students are likely to wonder why the professor doesn’t provide them with the “right” answer; a few may believe that the professor is hiding information from them. Others may argue that the subject has been unnecessarily complicated and that complex problems should be relegated to higher-level courses.^[4]

Level 3: Suggestions for Professors to Promote Critical Thinking

Students operating at Level 3 are likely to exhibit very poor performance if professors assign them tasks that require much higher levels of cognitive complexity. For example, these students may flounder if asked to identify evidence (other than experts’ opinions) that agrees with their point of view. Instead, these students should be given assignments that require them to practice and develop the skills of the next higher cognitive development level.

As suggested in Table 2, the most important growth opportunity for these students is for them to learn that true ambiguity exists. This will assist them in identifying the nature of unstructured problems, which is a prerequisite to adequately framing or resolving such problems. To promote development, professors can help their students understand that some problems will never have a single correct answer, and it is not the professor’s or any other expert’s role to provide the “right” answer to all problems. An effective way to help students learn that real uncertainties exist is to expose them to evidence that experts disagree. For example, the **Day MBA** assignment illustrated in Appendix A confronts students with information that financial analysts disagreed about an appropriate goodwill amortization life for Blockbuster Entertainment Corp. Another important critical thinking opportunity is to

ask students to explore the unstructured aspects of problems. For example, students could be asked to describe the risks and uncertainties surrounding a company's financing policies or to explain why it is not possible to fully determine the benefits of an advertising program.

Although students operating at level 3 are not sophisticated in their use of evidence, professors can lay groundwork for future growth by exposing these students to the use of evidence in justifying opinions. Class discussions can serve this purpose if there are students operating at higher levels who are able to articulate ways in which they identify and use evidence. Repeated exposure to a higher level of complexity exhibited by peers can be a powerful source of motivation to grow.

Reflective Judgment Level 4

Level 4: Assumptions About Knowledge and Impact on Ability to Adequately Identify, Frame, Resolve, and Re-Address Unstructured Problems

Students operating at Level 4 have achieved important growth beyond Level 3 because they are able to recognize that some problems involve inherent and enduring uncertainties. However, their understanding is often limited; they may simplistically attribute uncertainties to a superficially narrow set of limitations.

Unlike students operating at Level 3, those operating at Level 4 begin to acknowledge the role of evidence. Unfortunately, they have not yet developed an adequate framework within which to obtain, organize and understand information about unstructured problems. Accordingly, they tend to look at problems superficially, rather than complexly and broadly. This leads to several observable weaknesses in their approach to unstructured problems. First, they are likely to confuse evidence and unsupported personal opinion. Second, they do not yet recognize that evidence must be interpreted based on qualitative differences. Third, they do not clearly recognize legitimate reasons for differences in points of view, believing that differences arise solely because of personal characteristics (e.g., upbringing, intentional bias, or individualism). Fourth, they fail to recognize that experts (including professors) reach conclusions through a complex process of identifying and interpreting evidence from a variety of legitimate perspectives; accordingly, they often view experts as being opinionated or as trying to subject others to their personal beliefs. These characteristics of Level 4 make it difficult for students to break problems down, logically organize information, weigh evidence and arguments, understand problems from multiple perspectives, and accommodate their own biases.

Because students operating under Level 4 assumptions are unable to adequately frame unstructured problems,

they may disregard evidence and use whim or prior beliefs to reach and justify a conclusion. They are also likely to “stack up” evidence in a quantitative way and ignore contrary information. They often insist that all opinions are equally valid. Because of this and also because their own solution is not well supported, they may become defensive if challenged or when confronted with new evidence. Other students who are less settled in their conclusions may capriciously change their position.

Level 4: Key Indicators in the Accounting Classroom

Reflective judgment model Level 4 represents the most common set of beliefs found among undergraduate college students, and it is also very common among master’s level and even some doctoral students (King and Kitchener, 1994, Table 6.6, p. 161). Many of these students view coursework as a game in which it is their job to figure out what the professor wants and then to stack up evidence to support that position.

Students operating with Level 4 assumptions tend to sound very democratic, arguing that “everyone is equal.” What they don’t understand is that human beings can be viewed ideally as equals, but individual opinions are not necessarily equal. It is these students’ democratic tendencies, driven by their inability to recognize qualitative differences among arguments or objectively evaluate their own opinions, that sometimes leads them to view professors as “unfair” or “opinionated.” This most commonly occurs when they are challenged on their beliefs or when grades depend on the quality of their arguments.

On the other hand, these students are often interested to learn during class discussions that their peers hold a variety of opinions and have different ways of talking about and interpreting a problem. These students’ openness to information and tolerance for others’ ideas is a benefit in promoting active class discussion.

Level 4: Suggestions for Professors to Promote Critical Thinking

As before, students operating at Level 4 are likely to exhibit poor performance if professors ask them to perform tasks that are clearly beyond the reach of their level of cognitive complexity. For example, these students may perform abysmally if asked to recommend and justify a solution to a human resource problem where there is more than one defensible solution.

As suggested in Table 2, these students need to work on developing complex tools for framing unstructured problems. Professors can initially impact these students’ development by helping them understand that evaluating an argument is not the same as making a judgment about a person. Students should then be given assignments requiring

them to address various aspects of framing unstructured problems and to recognize and compensate for their own initial biases (which can cause them to ignore information that is contrary to their own point of view). Because Level 4 students do not have experience with these tasks, professors should model (or have more advanced peers model) all the factors that should be considered when framing unstructured problems. This can be achieved through brainstorming and by organizing information on the board as it unfolds during class discussion. Appropriate topics for this type of exercise might include analysis of various stakeholder points of view regarding a company's environmental policies or identification of the pros and cons of an income tax strategy.

Special attention should be given to helping these students learn to understand why some evidence is more reliable than other evidence. Students can learn to recognize differences in evidence by initially having professors fully explain their own thought processes in evaluating examples of evidence and then by experiencing numerous opportunities to practice. ^[5]

Reflective Judgment Level 5

Level 5: Assumptions About Knowledge and Impact on Ability to Adequately Identify, Frame, Resolve, and Re-Address Unstructured Problems

Students operating from a Level 5 point of view can have a much more complex understanding of problems than those operating at Level 4. At this point, they become aware of their own limitations and biases in understanding a problem. They can also perceive how different facets of a problem lead to its complexity.

Students operating at Level 5 have achieved a major advancement because they begin to logically and qualitatively evaluate evidence and arguments. They are able to objectively examine the problem, and they believe that their own and others' viewpoints result from interpretations of information within individual perspectives. They start to understand how experts come to their conclusions via evidence and perspective.

Although Level 5 reasoning allows students to draw logical conclusions within a given perspective, they are generally unable to adjudicate across perspectives. This often causes them to be reluctant to select and defend a single overall solution as most viable, or they may select a solution but be unable to express adequate support for its superiority over other solutions. These students are also likely to fail to recognize the need to reevaluate a solution when confronted with unexpected or updated information.

Level 5: Key Indicators in the Accounting Classroom

Level 5 assumptions about knowledge are held by a fair number of senior undergraduate college students, and it

is the most common level found among master's students (King and Kitchener, 1994, Table 6.6, p. 161).

Students operating at Level 5 are able to avoid many of the pitfalls of the earlier cognitive stages. They are able to present coherent descriptions of a problem, identify issues associated with multiple perspectives, and present logical and qualitative analyses of evidence.

On the other hand, these students often exert significant energy trying to maintain balance, which conflicts with choosing and justifying one solution as superior to other solutions. This can cause them to jeopardize class discussions that involve resolving unstructured problems because they tend to get "hung-up" on the framing phase. For example, such students might argue against discussing the solution to a problem until everyone agrees on definitions.

Level 5: Suggestions for Professors to Promote Critical Thinking

The biggest difficulty for students operating at Level 5 is their inability to adequately evaluate across perspectives. As suggested in Table 2, professors should model the process and then help these students develop the principles and frameworks that will help them do this on their own. For example, professors can use cases derived from actual business decision deliberations to help students recognize trade-offs across perspectives in real-world decision making. ^[6]

Reflective Judgment Levels of MBA Students: Preliminary Data and Implications

Methodology

As discussed above, the reflective judgment model consists of seven qualitatively different stages/levels that describe how individuals perceive and reason about unstructured problems. Levels of reflective judgment have typically been assessed using an interview, which is time consuming and costly (it must be conducted by a certified interviewer and scored by a certified rater). King and Kitchener (1994, p. 122) suggested that professors consider other ways to assess the reflective judgment stage of students. In particular, they suggested that professors ask their students questions similar to those contained in the Reflective Judgment Interview. Based on this suggestion, Wolcott and Lynch (1997) demonstrated how professors can utilize a reflective thinking essay assignment to assess their students' thinking about unstructured problems. They described how to design this type of assignment around any subject matter and how professors can evaluate student responses to the assignment.

I collected student responses to reflective thinking essay assignments (see Appendix A) from an evening and a day section of an MBA introductory financial accounting course during spring 1997. The evening class included 24 students (**Evening MBA**), and the day class included 48 students (**Day MBA**).

I told students that the purpose of the essay assignment was to evaluate how they think about unstructured problems and to provide them with personalized feedback to improve their skills with this type of problem.^[7] The essay assignment constituted a major part of the class discussion on the due date. Subsequently, I gave students my written comments on their essays plus a handout containing my discussion of several key issues related to the problem. I graded the essays only based on whether students answered all of the questions in the assignment; it was not graded based on quality. This grading policy, recommended by Wolcott and Lynch (1997), was adopted to promote candid student responses to the assignment questions. The proportion of the students' course grades that depending on completion of the assignment was small (7% in the **EVENING** class and 5% in the **DAY** class).

A Certified Reflective Judgment Rater provided a three-digit rating for each essay. The first digit represented the primary reflective judgment level (1 through 7) indicated in the essay. If there was strong evidence in the essay of a reflective judgment level different than the primary one, then the second digit represented that level; otherwise, the second digit was set equal to the primary level. If there was weak evidence in the essay of a reflective judgment level different than the primary one, then the third digit represented that level; otherwise, the third digit was set equal to the primary level. Following standard procedures in reflective judgment research, weighted reflective judgment scores (**WtdRJ**) were calculated using percentages of 60/20/20 applied to the three digits.

Findings and Implications

The distribution of **WtdRJ** for each MBA section is depicted in Table 3 and Figure 2. The distributions exhibit three major characteristics. First, reflective judgment scores were not evenly distributed across stages. In particular, most students operated at or near stage 4 of the reflective judgment model and are likely to exhibit weak skills when addressing unstructured problems, as discussed previously. Second, the means of the reflective judgment scores (4.2 for **DAY** students and 4.5 for **EVENING** students) were slightly below the average of 4.6 across various studies for master's and early doctoral students as summarized by King and Kitchener (1994, Table B6.6, p. 283). Because no other data are available on reflective judgment scores for MBA students, it is not known whether the subjects in this study are similar in reflective judgment profile to other MBA students. Third, the **EVENING** class contained a larger proportion of students operating at or above stage 5 as compared to the **DAY** class. This finding most likely reflects the older age and greater work experience of individuals in the **EVENING** section and suggests that these students are likely to perform better on unstructured problems than students in the **DAY** section.^[8]

TABLE 3 ABOUT HERE

FIGURE 2 ABOUT HERE

As the data in Table 3 and Figure 2 demonstrate, the average MBA student in this study does not exhibit the cognitive abilities required to adequately address many types of unstructured problems. Below I provide brief comments and suggestions for business faculty.

Those students operating below reflective judgment Level 4 are not likely to understand the basic nature of unstructured problems. They are likely to miss-spend their effort by looking in textbooks or class notes for the “correct” answer to all problems, rather than analyzing information to reach their own conclusions. As discussed previously, students operating below Level 4 can benefit from assignments and exercises to help them learn why many business problems do not have single correct solutions. One of the best ways to do this is to confront students with cases that clearly demonstrate valid differences of agreement, particularly among experts. Class discussions should be used to help students learn to explore the uncertainties and ambiguities.

The majority of the MBA students in this study appear to operate near Level 4 of the reflective judgment model. These students tend to believe that all answers to unstructured problems are equally valid. Because of this, they do not understand, for example, how it is possible for a professor to give different grades to different groups’ projects. They also tend to stack up evidence in support of their own position and ignore contrary information. These students need to develop an understanding that their performance in school and in the workplace will be assessed based on the quality of their work, and they need to be trained in what constitutes high quality work. These students are likely to benefit from coursework that will help them practice, in particular: (1) skills for qualitatively evaluating information, (2) skills for describing reasons for different points of views, and (3) skills for recognizing and compensating for their own initial biases.

Students operating near Level 5 of the reflective judgment model are capable of high quality analyses of evidence and perspectives. However, these students are often reluctant to reach and justify a single solution. These students are likely to benefit from assignments that require them to use values or other factors to choose and defend one solution above other alternative viable options.

Conclusion

The purpose of this paper is to help MBA professors better understand their students and to offer guidance about curriculum designs that are likely to enhance students' development of critical thinking skills. The paper elaborated on the specific impact of student beliefs about knowledge on their attempts at identifying, framing and resolving unstructured problems that require critical thinking.

Because of the importance of cognitive development level, professors should first learn how to recognize the key indicators of different underlying assumptions about knowledge held by their students. This paper provided illustrations of such indicators. Alternatively, professors may wish to assess their students' levels of cognitive complexity using the essay assignment utilized in this paper and described more fully by Wolcott and Lynch (1997). Using some method of assessment leading to an understanding of students' current cognitive complexity, professors can create developmentally appropriate coursework to stimulate growth in critical thinking.

This paper was intended to serve as a foundation for discussion about critical thinking development in the MBA classroom. I encourage interested faculty members to discuss these ideas and to explore ways in which we can improve the classroom learning experience for our students.

Appendix A

Reflective Thinking Essay Assignments

DAY SECTION OF MBA COURSE: Instructions to Students

Refer to the following readings:

- Berkshire Hathaway, excerpt from 1988 annual report (attached)
- BNG Textbook, pp. 585-586
- McConnell, Pat and Janet Pegg, "Poolings Added to Endangered Species List," *Accounting Issues*, August 22, 1996, New York: Bear Stearns (attached)

As discussed in the above readings, there is substantial disagreement about whether the pooling of interests method should be allowed in the United States.

Question to Be Answered and Turned In (1-2 pages, single-spaced):

What is your opinion about whether the pooling-of-interests method should be permitted in the United States?

In your answer, you MUST address each of the following:

- What is the basis for your opinion?
- Do you think that it is possible to decide whether or not your opinion is correct? Why or why not?
- How is it possible that there are differences of opinion about this question?
- Since there are differences of opinion about this question:
 - ◊ Does this mean that one opinion is right while the other is wrong?
 - ◊ If so, how do you decide which is right? If not, is one opinion better than the other?
 - ◊ If you think that one opinion is better than the other, explain what you mean by "better."

EVENING SECTION OF MBA COURSE: Instructions to Students

Refer to the Blockbuster Entertainment case [attached to the assignment].

Question to Be Answered and Turned In (1-2 pages, single-spaced):

What is your opinion about the amortization life for goodwill resulting from Blockbuster's acquisitions of other video businesses?

In your answer, you MUST address each of the following:

[same set of questions as above]

Figure 1
Skills for Identifying, Framing, Resolving and Re-Addressing Unstructured Problems

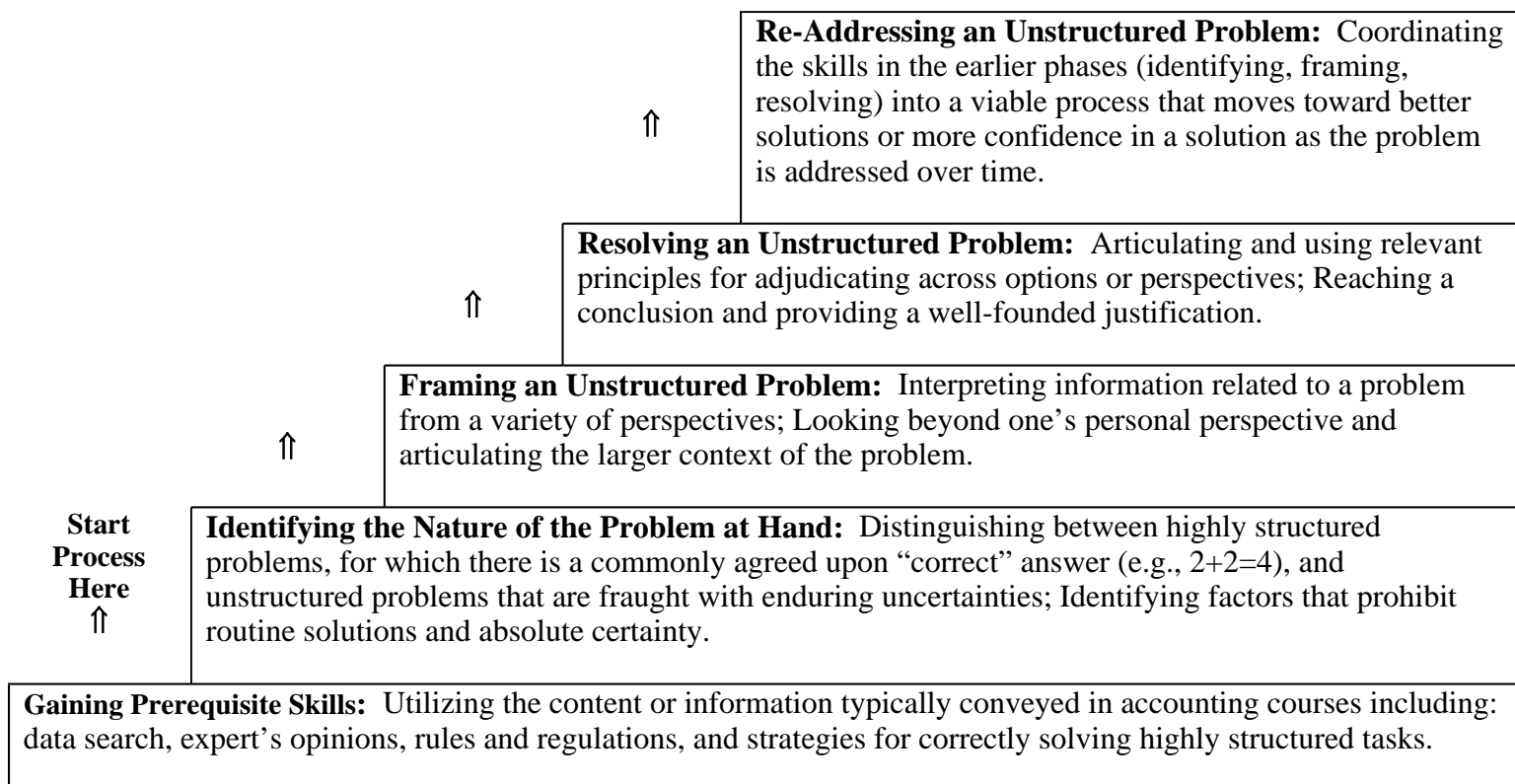


Figure 2
Bar Chart of Reflective Judgment Ratings for
Two Sections of MBA Introductory Financial Accounting

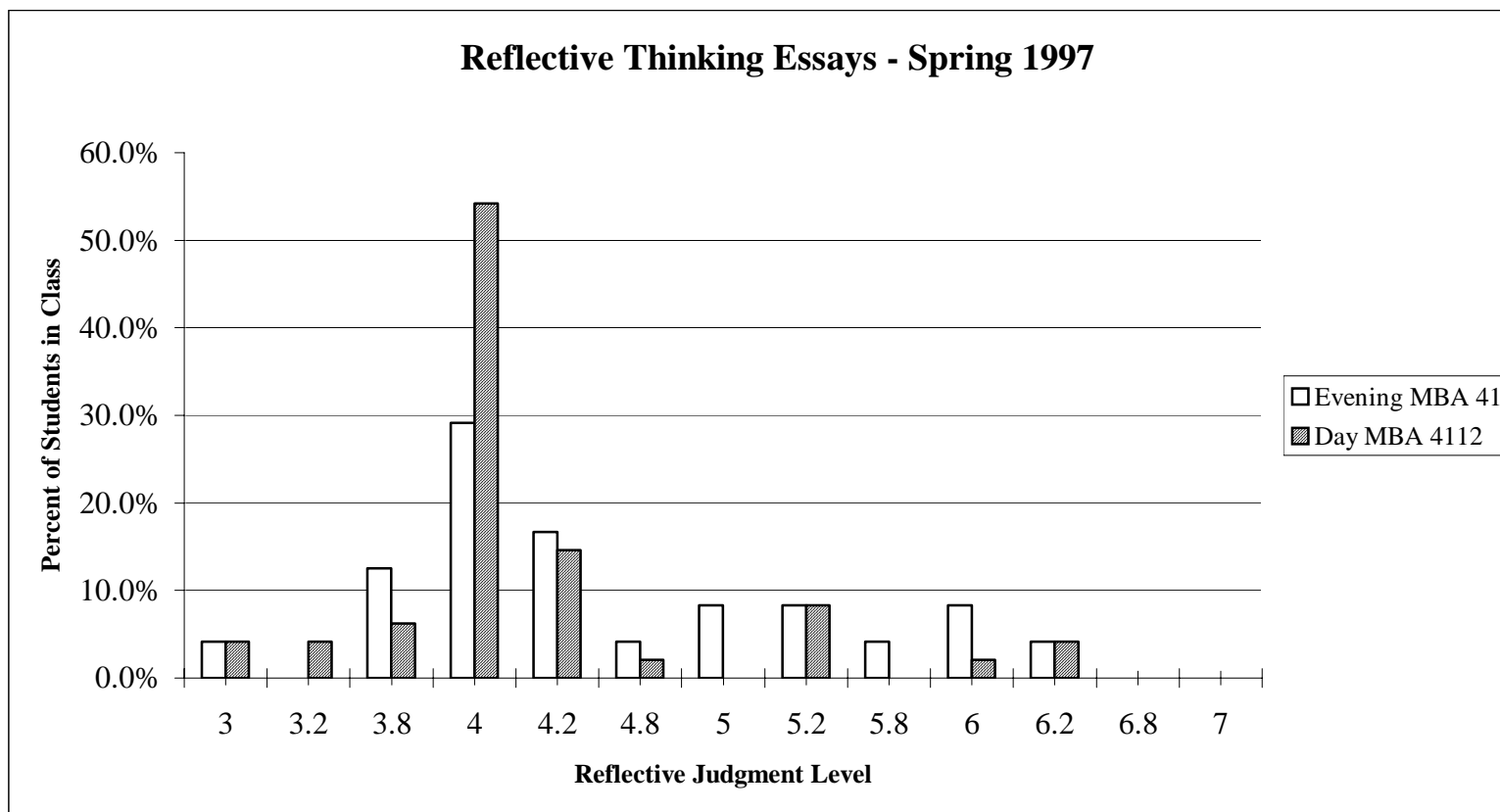


Table 1
Desired Skills, Classroom Activities, and Assumptions That May Hamper
Performance in Each Phase of the Problem Solving Process

Difficult for Reflective Judgment Level 3: Identifying the Nature of an Unstructured Problem

Related skills	Classroom Activities to Develop Skills	Reflective Judgment Level 3 Assumptions that may hamper performance
<ul style="list-style-type: none"> Understand that there may never be a single correct solution to some problems, such as those found in cases Identify relevant information 	<ul style="list-style-type: none"> Use cases or readings to confront students with evidence that experts disagree about the best solution to a problem Discuss students' concerns 	<ul style="list-style-type: none"> Uncertainty either doesn't exist or is merely temporary Knowledgeable persons or experts know or will find answers to all problems

<p>related to a problem</p> <ul style="list-style-type: none"> • Differentiate between highly structured and unstructured aspects of a problem • Identify factors or limitations that prohibit certainty about the best solution 	<p>about expecting the professor to provide the “right” answer</p> <ul style="list-style-type: none"> • Use small group or class discussion to generate a list of the aspects of the problem in which uncertainty is a significant factor • Ask students to consult experts or explore literature to investigate the range of possible solutions to the problem at hand 	<ul style="list-style-type: none"> • Until experts can agree, opinions are equally correct or equally biased guesses • It is sufficient to view problems holistically without attention to realistic complexities
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Table 1 (continued)

Difficult for Reflective Judgment Level 4 and Below: Framing an Unstructured Problem:

Related skills	Classroom activities	Reflective Judgment Level 4 Assumptions that may hamper performance
<ul style="list-style-type: none"> • Make legitimate, qualitative interpretations of evidence or other information related to a case problem • Identify a variety of evidence-based processes for examining a case from different perspectives • Identify important perspectives related to a problem • Evaluate the problem from different perspectives • Construct a complex, objective, balanced picture of a problem and the larger context within which different perspectives fit 	<ul style="list-style-type: none"> • Show students how you identify factors that should be considered when framing a problem • Have students interpret and evaluate the quality of different kinds of evidence • In small groups, ask students to take different roles and practice evaluating the same evidence from different perspectives • Discuss the difference between evaluating arguments and judging people • Ask students to write an essay in which they examine their reasoning in light of their initial biases and discuss how they have compensated for questionable biases • Show students and have them practice developing frameworks or concept maps for organizing information and exploring the complexities and the context surrounding a problem 	<ul style="list-style-type: none"> • It is sufficient to simply stack up evidence that supports one’s opinion • Conflicting points of view for which evidence can be provided are equally valid • Uncertainty is due only to specific limitations such as incorrect reporting of data, limited resources, data lost over time, or inability to correctly predict the future • Criticizing an argument is the same as criticizing the person who makes the argument • Experts are biased persons who are simply promoting their own agenda

Table 1 (continued)

Difficult for Reflective Judgment Level 5 and Below: Resolving an Unstructured Problem:

Related skills	Classroom activities	Reflective Judgment Level 5 Assumptions that may hamper performance
<ul style="list-style-type: none"> • Use principles that apply across perspectives to choose rationally among potential solutions to a problem • Clearly articulate a position on issue(s) • Use persuasive reasons and evidence to support the position chosen • Make objective and substantial arguments to counter arguments that support other viable solutions 	<ul style="list-style-type: none"> • Ask students to articulate how they use principles and frameworks for evaluating across potential solutions • Require students to choose a solution as most viable and have them articulate and justify their opinion • Have students explain how they would respond to arguments that support other viable solutions 	<ul style="list-style-type: none"> • Endorsing one alternative denies the legitimacy of other alternatives • Solutions may be justified only within a given context or from a given perspective, making it very difficult to endorse and justify a solution as the best alternative • There are no overarching criteria by which to choose among competing solutions

Table 1 (continued)**Difficult for Reflective Judgment Level 6 and Below: Re-Addressing an Unstructured Problem**

Related skills	Classroom activities	Reflective Judgment Level 6 Assumptions that may hamper performance
<ul style="list-style-type: none"> • Recognize most important limitations of a proposed solution and their implications • Adapt solutions to unexpected or updated information • Employ processes of inquiry that can potentially lead to better solutions or greater confidence in the endorsed solution 	<ul style="list-style-type: none"> • Have students describe the limitations of their solutions and the implications of those limitations • Introduce new information and have students reassess their solution • Have students devise or implement strategies for gathering new information that would necessitate a reconsideration of the case problem 	<ul style="list-style-type: none"> • Points of view about specific situations may be judged as better than others only in a very tentative way based on one's evaluations of experts' positions or the pragmatics of the situation at hand • There are no generalized principles and procedures that can be used to further investigate one's tentative resolution to the problem

Table 2

Key Classroom Indicators of Student Assumptions

Reflective Judgment Level 3:

- Fail to realistically perceive complexities and ambiguities
- Recast unstructured problem as highly structured one
- Cannot evaluate or properly apply evidence
- Ignore evidence contrary to own opinion
- Use illogical arguments
- Conclude based on prior beliefs, what “feels right,” or whim
- Express confusion or futility
- Insist that professor should provide “correct” answer

Reflective Judgment Level 4:

- Confuse evidence and unsupported personal opinion
- Stack up evidence quantitatively and ignore contrary information
- Disregard evidence and use whim or prior beliefs to reach and justify a conclusion
- Recognize evidence and multiple perspectives, but inept at:
 - ◊ Breaking problem down
 - ◊ Logically organizing information
 - ◊ Understanding problem from multiple perspectives
 - ◊ Accommodating own biases
- Change position or become defensive if challenged or when confronted with new evidence
- Insist that all opinions are equally valid
- View experts (including professors) as being opinionated or as trying to subject others to their personal beliefs

Reflective Judgment Level 5:

- Logically and qualitatively evaluate evidence and arguments
- Present coherent and balanced description of a problem
- Identify issues associated with multiple perspectives, but inept at evaluating the strength of arguments across perspectives
- Reluctant to select and defend a single overall solution as most viable
- Select a solution but unable to express adequate support for its superiority over other solutions
- Jeopardize class discussions by getting “hung-up” on issues such as definitions

Note: Certain key indicators are apparent for some students but not for others. Evidence of two or more key indicators suggests high likelihood that a student operates at that level. Some students operate in more than one level at the same time.

Table 3
Distribution of Reflective Judgment Ratings for
Two Sections of MBA Introductory Financial Accounting

	Evening MBA			Day MBA			Combined		
	#	%	Cum. %	#	%	Cum. %	#	%	Cum. %
3.0	1	4.2%	4.2%	2	4.2%	4.2%	3	4.2%	4.2%
3.2	0	0.0%	4.2%	2	4.2%	8.4%	2	2.8%	7.0%
3.8	3	12.5%	16.7%	3	6.3%	14.7%	6	8.3%	15.3%
4.0	7	29.2%	45.9%	26	54.2%	68.9%	33	45.8%	61.1%
4.2	4	16.7%	62.6%	7	14.6%	83.5%	11	15.3%	76.4%
4.8	1	4.2%	66.8%	1	2.1%	85.6%	2	2.8%	79.2%
5.0	2	8.3%	75.1%	0	0.0%	85.6%	2	2.8%	82.0%
5.2	2	8.3%	83.4%	4	8.3%	93.9%	6	8.3%	90.3%
5.8	1	4.2%	87.6%	0	0.0%	93.9%	1	1.4%	91.7%
6.0	2	8.3%	95.9%	1	2.1%	96.0%	3	4.2%	95.9%
6.2	1	4.2%	100%	2	4.2%	100%	3	4.2%	100%
Total	24	100%		48	100%		72		

Note: The text of the paper provides an explanation of the reflective judgment rating process. The ratings were obtained from the essay assignments presented in Appendix A.

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[1] Unstructured problems lack a single solution that would be endorsed by almost all experts.

[2] The reflective judgment model is superior to other models of cognitive development, in particular that of the commonly-cited Perry (1970) model, because it is "more rigorously epistemological" (Kurfiss, 1988, p. 58) and has been extensively validated with cross-sectional and longitudinal data on male and female college students (King and Kitchener, 1994, chapter 6).

[3] According to data summarized by King and Kitchener (1994, Table 6.6, chapter 6), Levels 1 and 2 are rarely evident among college students. Although Levels 6 and 7 are sometimes found among students, the assumptions held by those students should not significantly hinder abilities to achieve the performance objectives outlined in Table 1. In addition, Pascarella and Terenzini (1991, p. 123) argued that the reflective judgment model is "perhaps the best known and most extensively studied" of the postformal models.

[4] Such comments are likely to result not only from Level 3 cognitive complexity, but also from students' experience in other college courses where they often are asked only to memorize highly structured material.

[5] It can be a surprisingly difficult task for professors to fully describe their own thought processes. Some practice may be necessary before a

professor is able to do this at a level that is comprehensible to his or her students.

[6] Note that traditional “Harvard style” business cases do not include sufficient details for this application.

[7] I have received approval from the DU Institutional Review Board for the Protection of Human Subjects to utilize these data in publishable research articles.

[8] Although all of the subjects in this study were MBA students, the **EVENING** and **DAY** students were not in the same course. Accordingly, it is not possible in this study to directly test whether **EVENING** students perform better than **DAY** students on unstructured problems. This is an important area for future research.