

Intentional Course Design for Critical Thinking Development in Accounting

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This document contains resources and references to expand upon the discussion started during my 2023 CTLA conference session.

I intend to expand this document in the future and will publish it (freely available) on my website, so I would appreciate receiving any questions or suggestions that you might have.

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1. Need for More Effective Critical Thinking Education

Employers have always called for stronger critical thinking skills. Changes in the business and accounting world have further increased demands for new skills. Accounting students need expanded learning in many other areas such as:

- Data analytics
- Sustainability/ESG
- Teamwork
- Self-management, resilience, etc.

The bottom line is that our courses are under time pressure to address more topics AND ALSO to more effectively help students develop critical thinking skills. In addition, there is far too little high-quality and long-term critical thinking research in most of higher education. Below are two major recommendations to address these issues.

1.1 Can We Eliminate or Reduce Some Course Topics (While Adding or Expanding the Scope of Other Content)?

Faculty need to rethink the content of their courses. It is no longer sufficient to continue teaching the same topics as in the past. I do not believe that individual professors, working alone, can achieve the dramatic changes that are needed. The new emphasis on data analytics is causing many business and accounting programs to add, delete, and/or revise their course requirements. These revisions provide an opportune time for faculty to consider other major changes—but it will need to be made among cross-curricular faculty in conjunction with textbook publishers and outside organizations (such as AICPA and IMA).

I have been thinking about this problem for many years, so I am sharing below some of the course content questions that might be considered. I will also share some of the specific content questions I have addressed in my courses.

- Which of the old content is still essential for students in the course: (1) required for all business majors or (2) required for the accounting major?
- Given technological changes, should the previous focus on manual calculations, etc. be reduced to allow for greater focus on computerized systems and data analytics?
- Are some course details being taught that students will rarely (if ever) use on the job? Below is an example.
 - In cost accounting, the “high-low” method for estimating a cost function would never be used in practice. Yet, when my coauthor and I tried to leave that method out of our cost accounting textbook, faculty told our publisher that we

needed to include it.¹ Why??? Apparently, many faculty like this method because students can manually perform the calculations during an exam. Other faculty members use this method to help students focus on data distributions. I am personally not convinced by either of these arguments. There are better uses of course time—including better ways to teach students about data distributions.

- Should some students' career plans affect decisions about which topics are taught to all students? Below is an example.
 - In cost accounting, the process costing method is usually taught to all students. I worked in public accounting for ten years and provided services to clients in many different industries. Yet, I never came across the process costing method with any client. On the other hand, accountants in the oil and gas or chemicals industries would definitely need to know and use this method. Should process costing be taught only to students who are likely to use this method in the workplace? Should new-hires in these industries learn process costing as needed? What is the best use of course time?
- During the 1990s, several U.S. universities experimented with the elimination of “debits and credits” from introductory accounting. Students were instead taught to describe the increases and decreases in various parts of the financial statements (i.e., $A = L + E$, and Net Income). After initially teaching introductory financial accounting at a university that used the traditional methods, I taught introductory financial accounting for 10 years at a school that did not use debits and credits. I found that introductory financial accounting students learned the meaning of accounting and financial statement impacts MUCH BETTER when debits and credits were removed. This was especially true for non-accounting majors who feared math. And after learning introductory accounting without debits and credits, accounting majors had no difficulty learning to apply debits and credits via a short tutorial taken before intermediate accounting. Unfortunately, this approach has pretty much disappeared in accounting education. Why??? We need to identify and apply methods that reduce course time AND provide for deeper learning.
- When teaching introductory financial accounting, I always required students complete a final project. The project required students to assess how well the financial statements reflected a real company's actual financial position and results. Before reaching an overall conclusion, students evaluated the impact of major accounting methods used by the company and compared the company's choices and financial results to those of a competitor. I created the project as a synthesis of what students should be able to know and do at the end of the course. I designed the final exam to focus on the same knowledge and skills. When designing the course, focusing on the final project allowed me to more clearly prioritize topics for elimination. If a topic was not helpful for the project, I was comfortable removing it from the course. And if I believed that a topic was

¹ This incident occurred more than 20 years ago. However, I just checked the table of contents for Wiley's new cost accounting textbook, and it also includes the high-low method.

essential, I made sure that it was included in the final project. I also gave students several short case assignments that provided scaffolding to learn the important sections of the final project. In other words, the entire course was organized around the project.

Although the examples are from my own courses, I'm sure that you can identify similar issues in any course.

1.2 Should More Faculty Be Actively Involved in Education Research?

I recently coauthored the following paper, which examined the state of research on critical thinking in accounting education:

- Wolcott and Sargent, 2021, Critical thinking in accounting education: Status and call to action, *Journal of Accounting Education* 56. Available at [Critical thinking in accounting education: Status and call to action - ScienceDirect](#)

Sadly, the research paper points out that considerable research work is needed. I do not believe the paper's conclusions would differ for most other disciplines. For example, most critical thinking research in accounting has been conducted within a single course. Because critical thinking skills tend to develop slowly and can be unstable, a single course study provides very little (if any) useful information. Also, the primary measures used for critical thinking tend to be course or exam grades, which might or might not be valid measures.

Although most business programs have learning outcome assessment programs in place, I doubt that very many programs are able to explicitly tie their critical thinking learning outcomes to specific teaching and learning efforts. Again, we have gaps in the research.

If we want to improve the development of students' critical thinking, we need to engage in value-added research to address the many questions that exist in this area of education. I believe this means that more faculty need to be involved in critical thinking research and that more of the research needs to be cross-curricular and possibly across universities.

2. Theoretical Models for Critical Thinking

Below are some resources for the major models I use to understand and design educational activities related to critical thinking.

2.1 Reflective Judgment Model

My critical thinking recommendations are based primarily on King and Kitchener's reflective judgment model. See the summary of the reflective judgment model in the Wolcott & Sargent paper (above). For more details about the reflective judgment model and related beliefs about knowledge, see:

- King, P. M., and Kitchener, K. S. (1994). *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults*. San Francisco: Jossey-Bass.
- Fischer, K. W., and Pruyne, E. (2002). Reflective thinking in adulthood: Development, variation, and consolidation. In J. Demick and C. Andreolletti (Eds.), *Handbook of Adult Development* (pp. 169-197). New York: Plenum.
- Kitchener, K. S., Lynch, C. L., Fischer, K. W., and Wood, P. K. (1993). Developmental range of reflective judgment: The effects of contextual support and practice on developmental stage. *Developmental Psychology*, 29, 893-906.
- Wolcott, S. K., and Lynch, C. L. (1997). Critical thinking in the accounting classroom: A reflective judgment developmental process perspective. *Accounting Education: A Journal of Theory, Practice and Research*, 2(1), 59-78.

2.2 Schema Theory

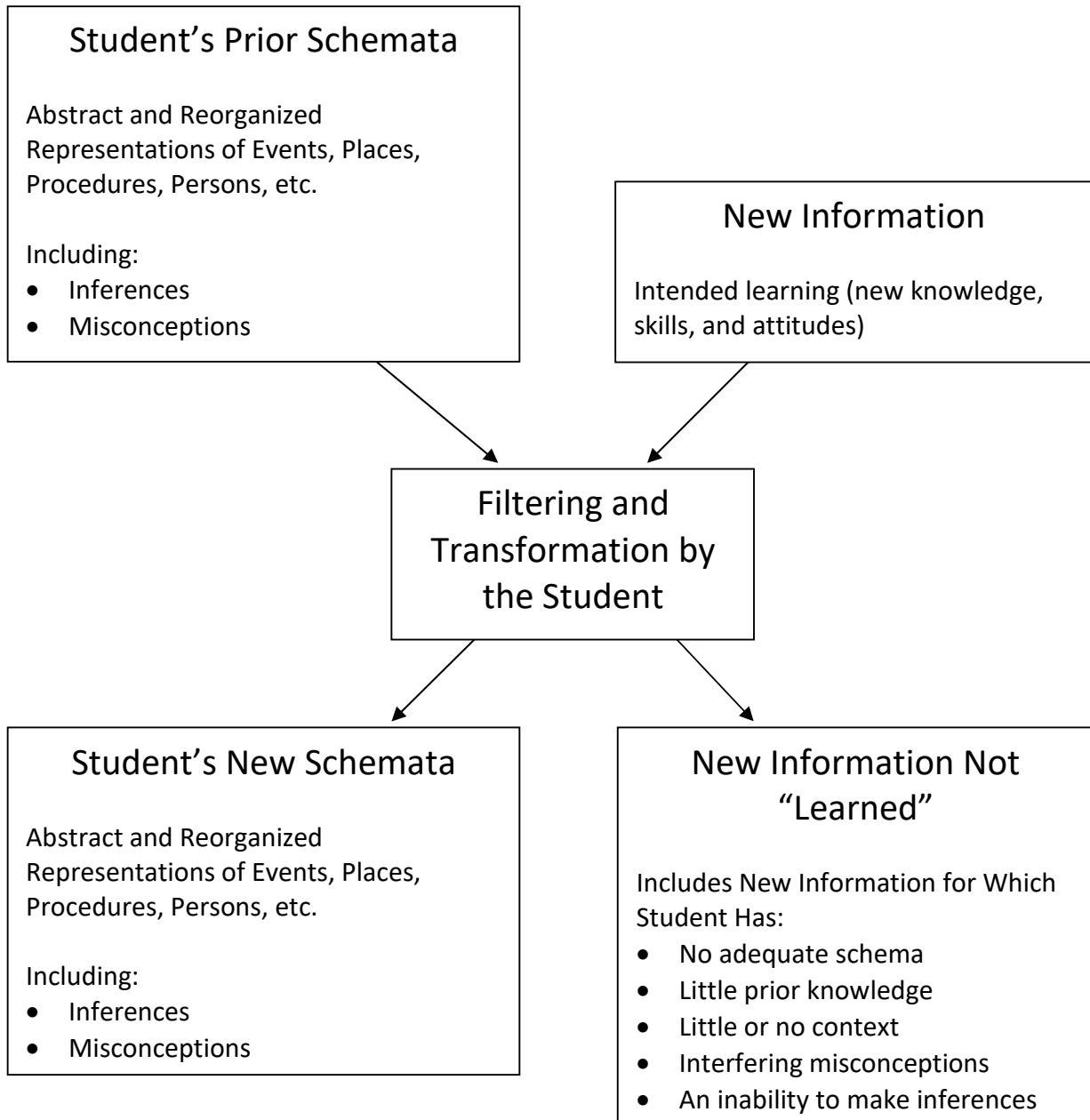
One way to understand how students react to learning activities is to consider schema theory. For an overview, see [Schema Theory and Concept Formation.pdf \(mit.edu\)](#)

Schema theory focuses on how people respond when new information is introduced. As shown in **Exhibit 1**, new information can be interpreted as what we are trying to help students learn. Students bring to our classrooms their prior schemata—which can include valid inferences about the new knowledge as well as misconceptions.

Student misconceptions related to critical thinking are often related to students' assumptions about knowledge as we discussed during the conference session.

As students are confronted with new information (e.g., via learning experiences), they filter that information through their prior schemata. This filtering can cause students to reject or misinterpret the new information. A lack of learning is most likely to occur when the new information conflicts with students' prior schemata.

Exhibit 1 An Overview of Schema Theory



To learn more, see Cross, K. Patricia and Mimi Harris Steadman, 1996, *Classroom Research: Implementing the Scholarship of Teaching*, San Francisco: Jossey-Bass Publishers, pp. 36-56.

To increase the student learning, you should attempt to address the factors in the lower-right-hand box in **Exhibit 1**. Specifically, you can design student learning experiences to:

- Explicitly use models and other support to help students develop new schema
- Ensure that new learning explicitly builds on prior knowledge and skills
- Provide students with context to help them understand and care about the new learning
- Explicitly address students’ misconceptions
- Recognize that students may be unable to make valid inferences—perhaps because of their assumptions about knowledge

It is possible (and desirable) to design learning activities that focus on students’ assumptions about knowledge (per the reflective judgment model).

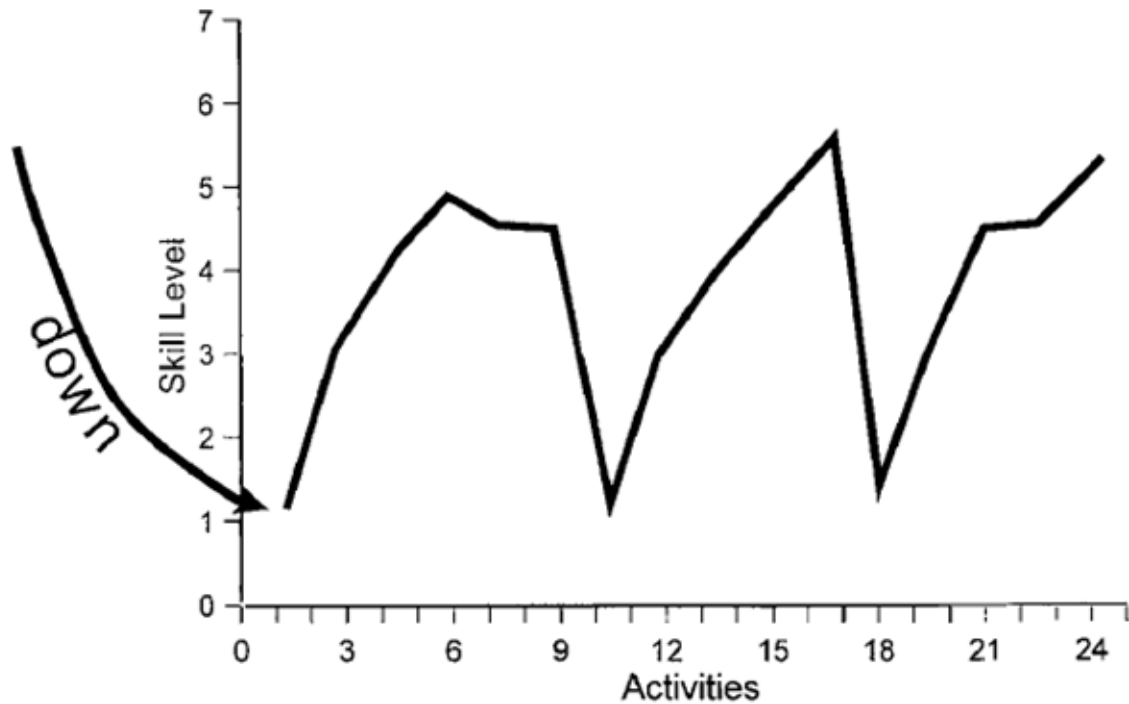
2.3 Skill Theory (Fischer)

Skill theory is related to schema theory, but it focuses explicitly on how learning takes place in the brain. For an overview of skill theory, see [Dr. Kurt Fischer \(lecticalive.org\)](https://lecticalive.org).

For me, the three biggest “takeaways” from skill theory are the following.

- Our brains develop as we mature. Some educators believe that student progress is limited by the maturity of their brains—and this might be true for some students. For example, some researchers believe that Level 5 thinking (the highest level) might not be possible until an average person is approximately 25-27 years of age. However, most adults have a significant “gap” between their brain’s biological capability and their critical thinking skills. In other words, our students’ brains are usually capable of higher-level thinking.
- The development of thinking skills is very slow; it usually takes a long time for people to develop stronger skills. Accordingly, a few learning activities or a single critical thinking course are unlikely to have much impact. To achieve significantly stronger critical thinking outcomes, educators need to provide learning activities that build on students’ current skills and provide appropriate challenge and support across the entire educational program. One way to provide support is via a model (see Section 3 of this document). When a model is used repeatedly across courses/topics with appropriate guidance and feedback, students are more likely to develop stronger skills.
- Development of thinking skills tends to be unstable. Students are likely to demonstrate growth in skills, followed by reversions. This can happen repeatedly even within a single course as shown in **Exhibit 2**. This pattern—combined with slow progress—can cause faculty to doubt that students are capable of development. However, educational evidence indicates that development with sufficient support and repetition is possible.

Exhibit 2 Repeated Regression and Reconstruction of Skills



Source: p. 175 in K. W. Fischer and E. Pruyne, 2002, Reflective thinking in adulthood: Development, variation, and consolidation, pp. 169-197 in J. Demick & C. Andreoletti (Eds.), Handbook of Adult Development, New York: Plenum.

3. Critical Thinking Models, Rubrics, and Student Resources

I'm sure you have access to various critical thinking models within your disciplines, professional organizations, etc. Because critical thinking skills develop slowly and are unstable, it can be especially helpful for students to see the same model and rubric repeatedly throughout a degree program. Below I introduce several models that I have either developed or have "dabbled with" over the years. These models might provide you with ideas for resources that you would like to use.

3.1 CPA Canada Model: The CPA Way

I designed "The CPA Way" as a teaching and learning model for Chartered Professional Accountants (CPA) Canada. It is used throughout a post-undergraduate pre-certification program to support students' skills related to technical competencies in conjunction with critical thinking (which CPA Canada calls "Problem Solving and Decision Making").

The model and related resources for students are freely available at [The CPA Way: An approach for addressing professional problems \(cpacanada.ca\)](https://cpacanada.ca) Below is a list of available resources:

1. Introduction: [Video](#) and [document](#)
2. CPA Mindset: [Video](#) and [document](#) (including a self-evaluation checklist)
3. Assess the Situation: [Video](#) and [document](#) (including a self-evaluation checklist)
4. Analyze Major Issue(s): [Video](#) and [document](#) (including a self-evaluation checklist)
5. Conclude and Advise: [Video](#) and [document](#) (including a self-evaluation checklist)
6. Communicate: [Video](#) and [document](#)
7. Ethical Behaviour: [Video](#) and [document](#) (including self-evaluation checklist)

The CPA Way was designed to help students address any "open-ended" problem, focusing on the cases used on the CPA Canada uniform professional exam. It can also be used for short cases—especially in college courses. Over time, textbook publishers have begun introducing The CPA Way into their Canadian accounting textbooks and assessment materials. The more students see and use the model, the better it supports their critical thinking skills.

During 2020, CPA Canada updated the definition and learning objectives for this competency. **Exhibit 3** provides a rubric for the new version. (Note: The CPA Way model has not been updated for changes in the wording of the competency.) The rubric in Exhibit 3 is NOT an official CPA Canada document; it is my own version. Level 4 describes entry-level CPA Canada expectations, so I omitted Level 5 from the rubric.

Exhibit 3 Cognitive Levels – Solving Problems and Making Decisions

Solving Problems and Making Decisions

CPAs draw on strong problem-solving and decision-making skills, including the ability to utilize technology and data analytics. CPAs capacity for analytical and integrative thought enables them to identify important issues, use evidence and analytics to thoroughly and objectively evaluate alternatives, apply appropriate decision criteria, and develop implementation and change-management plans. CPAs consider relevant factors that others do not recognize.

Competency Map	Level 1 Confused Fact-Finder	Level 2 Biased Jumper	Level 3 Perpetual Analyzer	Level 4 Pragmatic Performer
6.1 Issue Identification				
6.1.1 Identifies and articulates issues within areas of work responsibility	<ul style="list-style-type: none"> • Assumes that all problems are well-defined (i.e., have a single, “correct” answer) • Identifies issues that are clearly presented • For ambiguous situations: <ul style="list-style-type: none"> ○ Does not identify major issues ○ Identifies irrelevant issues 	<ul style="list-style-type: none"> • Differentiates problems having a single solution/ conclusion from problems having multiple potentially viable solutions/ conclusions • Partially identifies major issues and relevant aspects of the situation 	<ul style="list-style-type: none"> • Obtains an initial understanding of the problem, its context, and related issues • Divides larger problems into appropriate sub-problems to facilitate analysis 	In addition to Level 3: <ul style="list-style-type: none"> • Adopts criteria to identify the most important issues • Exercises judgment to determine whether an issue requires attention

(continued)

(Exhibit 3 continued)

Competency Map	Level 1 Confused Fact-Finder	Level 2 Biased Jumper	Level 3 Perpetual Analyzer	Level 4 Pragmatic Performer
6.1.2 Uses qualitative and quantitative techniques to clarify the nature of problems	<ul style="list-style-type: none"> • Uses straight-forward methods that do not necessarily provide relevant information • Identifies irrelevant aspects of the problem and/or context that create a misleading understanding of the situation • Does not divide larger problems into relevant sub-problems 	<ul style="list-style-type: none"> • Uses relevant techniques to partially identify issues in a complex problem • Partially identifies relevant situational factors • Divides larger problems into at least some relevant sub-problems 	<ul style="list-style-type: none"> • Uses appropriate methods to gather or develop relevant information • Thoroughly identify key situational factors • Identify less transparent issues • Divides large problems into reasonable subproblems 	In addition to Level 3: <ul style="list-style-type: none"> • Exercises judgment to more efficiently gather and analyze situational information
6.1.3 Demonstrates skepticism, objectivity, due care and persistence when identifying issues	<ul style="list-style-type: none"> • Confuses objectivity and due care with “correctness” of issue identification • Does not recognize the need for skepticism 	<ul style="list-style-type: none"> • Exhibits overconfidence in own issue identification • Questions others’ issue identification 	<ul style="list-style-type: none"> • Considers values and responsibilities that are relevant to the situation • Questions own professional competence 	In addition to Level 3: <ul style="list-style-type: none"> • Questions whether values and professionalism are sufficient and seeks continuous improvement
6.2 Analysis				
6.2.1 Maintains an objective and questioning mindset to avoid biased analyses	<ul style="list-style-type: none"> • Does not question objectivity or information quality 	<ul style="list-style-type: none"> • Focuses primarily on evidence supporting own opinion 	<ul style="list-style-type: none"> • Seeks to avoid bias by objectively and thoroughly exploring alternatives and information 	In addition to Level 3: <ul style="list-style-type: none"> • Identifies and sets aside preconceived ideas that might bias or limit analyses and conclusions •

(continued)

(Exhibit 3 continued)

Competency Map	Level 1 Confused Fact-Finder	Level 2 Biased Jumper	Level 3 Perpetual Analyzer	Level 4 Pragmatic Performer
6.2.2 Identifies patterns from data analysis	<ul style="list-style-type: none"> Does not identify patterns in data beyond naïve interpretation 	<ul style="list-style-type: none"> Uses relevant data analysis techniques to partially identify patterns in a complex problem 	<ul style="list-style-type: none"> Chooses and applies appropriate data analysis techniques and identifies relevant patterns Analyzes cause-and-effect relationships and makes logical inferences 	In addition to Level 3: <ul style="list-style-type: none"> Explains how trends, relationships, or other patterns affect conclusions or lead to the need for further analysis
6.2.3 Questions the relevance and tests the quality of information and assumptions in own analyses	<ul style="list-style-type: none"> Does not question the relevance or quality of information Does not identify or question assumptions 	<ul style="list-style-type: none"> Identifies the purpose of computations and analyses Partially questions and tests the quality of information Partially identifies assumptions used without analysis of their quality 	<ul style="list-style-type: none"> Considers alternative interpretations of information Raises valid questions and gathers information to explore unexpected or inconsistent findings Identifies and questions and/or tests assumptions 	In addition to Level 3: <ul style="list-style-type: none"> Determines whether data are sufficiently complete, valid, and reliable for the purpose of the analysis Provides reasonable justification for assumptions
6.2.4 Completes thorough quantitative and qualitative analyses to identify and evaluate potentially viable alternatives	<ul style="list-style-type: none"> Focuses on simple quantitative calculations, rules, and/or definitions that do not necessarily provide relevant information Provides inconsistent interpretations of information 	<ul style="list-style-type: none"> Partially analyzes and integrates quantitative and qualitative information Focuses primarily on information supporting own conclusion Discounts information supporting other conclusions 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes and integrates relevant quantitative and qualitative information to evaluate alternatives Extends analyses beyond immediate, short-term effects to evaluate longer-term, indirect implications 	In addition to Level 3: <ul style="list-style-type: none"> Focuses attention on the most important information and findings to evaluate alternatives

(continued)

(Exhibit 3 continued)

Competency Map	Level 1 Confused Fact-Finder	Level 2 Biased Jumper	Level 3 Perpetual Analyzer	Level 4 Pragmatic Performer
6.3 Recommendations				
6.3.1 Uses evidence and judgment to recommend and justify solutions or conclusions	<ul style="list-style-type: none"> • Provides only “facts” (e.g., quantitative results or rules) to support a single answer • May provide illogical and/or conflicting conclusions 	<ul style="list-style-type: none"> • Reaches conclusions prematurely based on partial analysis • Provides relevant arguments to support conclusions 	<ul style="list-style-type: none"> • May fail to provide clear recommendations while seeking to avoid bias via thorough analyses (i.e., may exhibit “analysis paralysis”) 	<ul style="list-style-type: none"> • Determines whether the information collected and the work performed are sufficient to support conclusions • Prioritizes key issues and analyses to develop suitable recommendations
6.3.2 Articulates limitations to recommendations	<ul style="list-style-type: none"> • Does not recognize limitations to recommendations 	<ul style="list-style-type: none"> • Does not address or discounts limitations to recommendations 	<ul style="list-style-type: none"> • Explores methods for responding to limitations of viable alternatives • Performs and interprets sensitivity analysis 	<ul style="list-style-type: none"> • Uses judgment to identify the most important limitations to recommendations
6.3.3 Applies decision criteria to choose among viable alternatives	<ul style="list-style-type: none"> • Applies a simple rule or comparison to reach what is presented as a “single, correct” conclusion 	<ul style="list-style-type: none"> • Reaches conclusions too quickly based on limited analysis and insufficient consideration of decision criteria 	<ul style="list-style-type: none"> • Explores alternative decision criteria, but does not defend a single appropriate set of criteria for reaching a conclusion 	<ul style="list-style-type: none"> • Develops appropriate decision criteria and uses the criteria to select and justify a preferred solution/ conclusion or to rank potential solutions
6.3.4 Ensures that decision criteria do not conflict with professional ethics and values	<ul style="list-style-type: none"> • Identifies and avoids explicit and clear-cut violations of professional ethics and values 	<ul style="list-style-type: none"> • Either ignores or exhibits overconfidence in ability to avoid conflict with professional ethics and values 	<ul style="list-style-type: none"> • Considers professional ethics and values that are relevant to the situation 	<ul style="list-style-type: none"> • Considers professional ethics and values when establishing decision criteria

(continued)

(Exhibit 3 continued)

Competency Map	Level 1 Confused Fact-Finder	Level 2 Biased Jumper	Level 3 Perpetual Analyzer	Level 4 Pragmatic Performer
6.4 Implementation and Change Management				
6.4.1 Develops preliminary implementation plans within areas of work responsibility	<ul style="list-style-type: none"> Does not consider the need for implementation plans 	<ul style="list-style-type: none"> Partially develops or does not develop an implementation plan 	<ul style="list-style-type: none"> Identifies relevant aspects of an implementation plan 	<ul style="list-style-type: none"> Anticipates the most critical aspects of implementation plans for the situation
6.4.2 Identifies potential barriers to change	<ul style="list-style-type: none"> Does not consider or demonstrate understanding of barriers to change 	<ul style="list-style-type: none"> Identifies no barriers to change or, if prompted, provides a limited number of valid barriers 	<ul style="list-style-type: none"> Explores potential barriers to change 	<ul style="list-style-type: none"> Identifies the most important barriers to change

3.2 CASB Communication and Critical Thinking Guide

Before the 2013 merger of professional organizations that resulted in the creation of CPA Canada, the Western Canadian provinces operated its own pre-certification educational program called Chartered Accountants School of Business (CASB). I worked with CASB and created a communication and critical thinking rubric. In a separate file on my website, you can access the CASB guide, which contains the rubric, discussions of the competencies, and assessment examples. The guide was used by CASB educators (not students). However, students were given the rubric and received many assessments of their work based on the rubric.

In the CASB rubric, critical thinking Levels 1, 2, 3, and 4 correspond to the same cognitive levels that I always use...

3.3 AICPA Critical Thinking Resources

In recent years, I worked with the American Institute of Certified Public Accountants (AICPA) to develop faculty resources for critical thinking. The resources include a faculty guide based on the same model used throughout this document. However, the AICPA guide is designed for undergraduate education, so it does not go beyond Level 4. The guide includes a critical thinking model and a rubric.

You can access the Guide on the following tab on my website: [AICPA Resources \(wolcottlynch.com\)](https://www.wolcottlynch.com) and also as an educator on the AICPA site.

The faculty guide includes examples of learning activities that are appropriate at different cognitive levels and for different accounting courses. Also available on my website are PDFs of the slides from four faculty webinars sponsored by AICPA. Videos for three of the webinars are available on YouTube as follows:

- July 2020: [Webinar: How to Help Your Students Become Better Critical Thinkers - YouTube](#) This webinar provides an overview of the faculty guide and its recommendations.
- August 2020: [Introductory Accounting Courses How to Help Your Students Become Better Critical Thinkers - YouTube](#)
- October 2020: [Higher Level Accounting Courses How to Help Your Students Become Better Critical Thinkers - YouTube](#)
- June 2021: Data Analytics in Accounting: How to Help Your Students Become Better Critical Thinkers (Unfortunately, I cannot find a YouTube link to this video.)

I plan to develop student resources for the AICPA materials. Maybe I can get that started over the next year!

3.4 Bloom's Taxonomy

Among the various educational models that exist for critical thinking, faculty tend to be the most familiar with one or both of the following versions of Bloom's taxonomy:

- The original version: Bloom, B. S. (Ed). (1956). *Taxonomy of educational objectives: The classification of educational goals*. Handbook 1: Cognitive domain. New York: McKay.
- The updated version: Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (Complete Edition). New York: Longman.

See the Wolcott and Sargent (2021) paper referenced earlier in this document for a discussion of Bloom's taxonomy, including evidence that the above two versions of the taxonomy are **not valid** based on what is currently known about how critical thinking skills develop. In particular, the verbs in these models DO NOT represent cognitive levels (i.e., a hierarchical progression of skills).

See **Exhibit 4** for a matrix of the Anderson et al. version of Bloom's taxonomy with cognitive levels. You can use this matrix to apply the Bloom's taxonomy verbs appropriately for students at different cognitive levels.

Exhibit 4: Cognitive Development and Skills in Revised Bloom’s Taxonomy

Revised Bloom’s Taxonomy:	Adult Stages of Reflective Judgment				
	Level 1 “Confused Fact-Finder” Little/no critical thinking	Level 2 “Biased Jumper” Partial critical thinking	Level 3 “Perpetual Analyzer” Emergent critical thinking	Level 4 “Pragmatic Performer” Competent critical thinking	Level 5 “Strategic Revisoner” Expert critical thinking
Apply Carry out or use a procedure in a given situation	Carry out a well-defined procedure in a familiar setting	Use relevant information to carry out a familiar procedure	Use relevant information to carry out a procedure in an unfamiliar setting	Efficiently carry out a procedure in a highly unfamiliar setting	[see Create]
Analyze Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose	Locate information and viewpoints in a well-defined problem	Distinguish between relevant and irrelevant information; focus on support for own viewpoint	Thoroughly and objectively explore relevant information, viewpoints, and assumptions; outline evidence for and against alternatives	Distinguish between important and unimportant parts; thoroughly and objectively integrate important information and viewpoints	Systematically deconstruct and reinterpret information and viewpoints over time
Evaluate Make judgments based on criteria and standards	Detect correct solutions/ conclusions for a well-defined problem	Determine own viewpoint/conclusion	Detect reasoning within individual viewpoints; discover limitations; delay or avoid concluding across viewpoints	Determine and apply overarching criteria/ priorities for drawing conclusions; detect key limitations	Monitor limitations, performance, and priorities over time to detect and adapt to changing circumstances
Create Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure	Reorganize procedures (e.g., rearrange a spreadsheet) when performing a well-defined task	Generate a work plan based on own preferences	Generate new hypotheses to explore observations or results	Develop new criteria or methods for distinguishing between hypotheses or selecting among alternative models or procedures	Invent a new model or procedure while anticipating changing circumstances

Susan Wolcott created this exhibit based on the verbs and definitions in Anderson et al. (2001), especially Table 5.1 (pp.67-68). This exhibit presents only the verbs that are usually considered to require critical thinking (i.e., the verbs “Remember” and “Understand” are omitted).

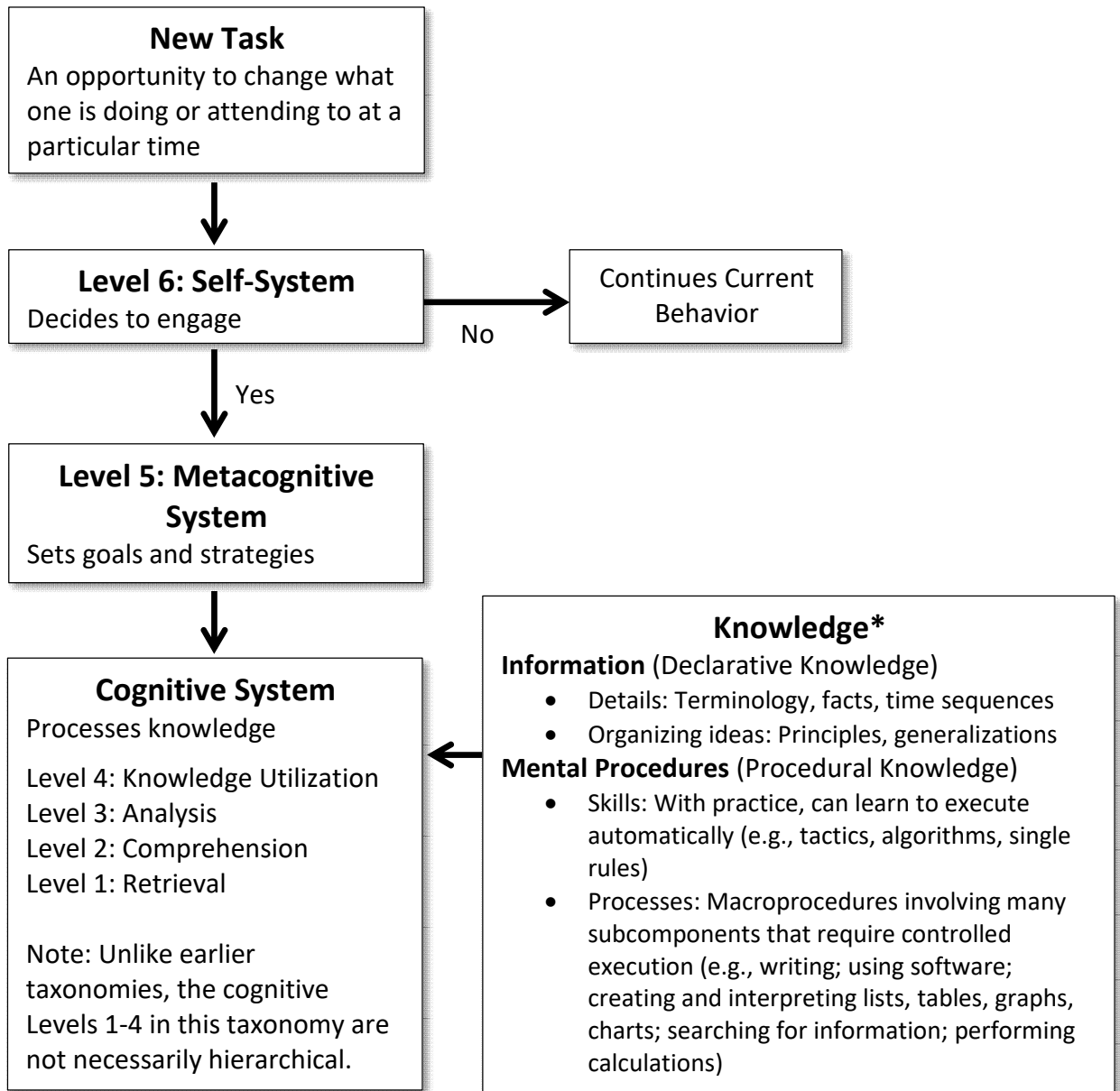
3.5 Motivation and Metacognition

As illustrated in **Exhibit 5**, student motivation and metacognition affect whether and how they will address a learning task. Thus, faculty should consider these aspects of student thinking when they design critical thinking learning activities.

Wolcott and Sargent (2021, Figure 1) provide another adaptation of the Marzano & Kendall model. The version in that paper highlights how students interact with multiple learning activities as they proceed through a course and degree program.

Exhibit 6 provides the common learning attitudes and approaches for students at each of the five reflective judgment model adult stages. You can enhance student motivation by explicitly tying your educational design to your students' attitudes and approaches. Encourage each student to adopt attitudes and approaches for the next-higher level.

Exhibit 5 Three Mental Systems and Six Levels of Processing in Marzano and Kendall’s Taxonomy of Educational Objectives



*A third domain of knowledge, psychomotor procedures, is omitted from this diagram because it is not relevant for accounting education

This diagram is adapted from Figures 1.1, 1.2, and 2.7 in Marzano, R. J., and J. S. Kendall. 2007. *The New Taxonomy of Educational Objectives*. 2nd edition. Thousand Oaks, CA: Corwin Press. Note: The term “Levels” in this exhibit are **not** meant to be hierarchical, and they are NOT the same levels discussed elsewhere in this document.

Exhibit 6 Beliefs About Knowledge: Common Learning Attitudes and Approaches

“Confused Fact-Finder” Level 1	“Biased Jumper” Level 2	“Perpetual Analyzer” Level 3	“Pragmatic Performer” Level 4	“Strategic Re-Visioner” Level 5
<ul style="list-style-type: none"> • Assumes there is a single “correct” way to study • Equates learning with memorizing • Expects experts (such as the teacher or textbook) to provide the answers to all problems • Fails to recognize own role in learning other than simplistic aspects such as time spent studying • Recasts open-ended problem to one having a single “correct” answer • When asked for analysis, quotes inappropriately from textbook or class notes 	<ul style="list-style-type: none"> • Studies in a way that “seems right” or “logical” • Fails to recognize qualitative differences in learning effort or performance • Focuses on quantitative aspects of learning (e.g., amount of time spent or number of pages) • Equates learning with “doing the work” • Perceives criticism of work as criticism of self • Expresses curiosity or surprise at ways in which others differ from self • Views experts (such as the teacher) as biased persons who are simply promoting their own agenda • Ignores or seems discouraged by information suggesting that own learning approach is inadequate • Recasts pro/con task as one calling for arguments in favor of own position and arguments against other position(s) 	<p>Same for Levels 3, 4, and 5:</p> <ul style="list-style-type: none"> • Considers a wide range of learning strategies • Recognizes qualitative differences in effort and performance • Evaluates the quality of learning strategies in relation to own preferences and skills • Objectively considers criticism of work • Views experts (such as teachers) as partners in the learning process 		
		<p>Unique to Level 3:</p> <ul style="list-style-type: none"> • Views learning as an exploration of perspectives and information • Reluctant to select and defend one learning approach as “best” • Has difficulty prioritizing effort to optimize performance • Has difficulty drawing adequate conclusions • Writes overly long papers • Jeopardizes class discussions by getting stuck on issues such as definitions 	<p>Unique to Level 4:</p> <ul style="list-style-type: none"> • Views learning as a problem to be solved • Relies on experts’ positions or the pragmatics of the situation in choosing best learning approach • Without prompting, provides inadequate explanation of analyses that underlie solution, causing approach to appear biased • Fails to adequately anticipate situations calling for changes in best approach 	<p>Unique to Level 5:</p> <ul style="list-style-type: none"> • Views learning as a process that can be improved strategically over time • Spontaneously addresses ways to improve learning or performance

3.6 Pathways Vision Model

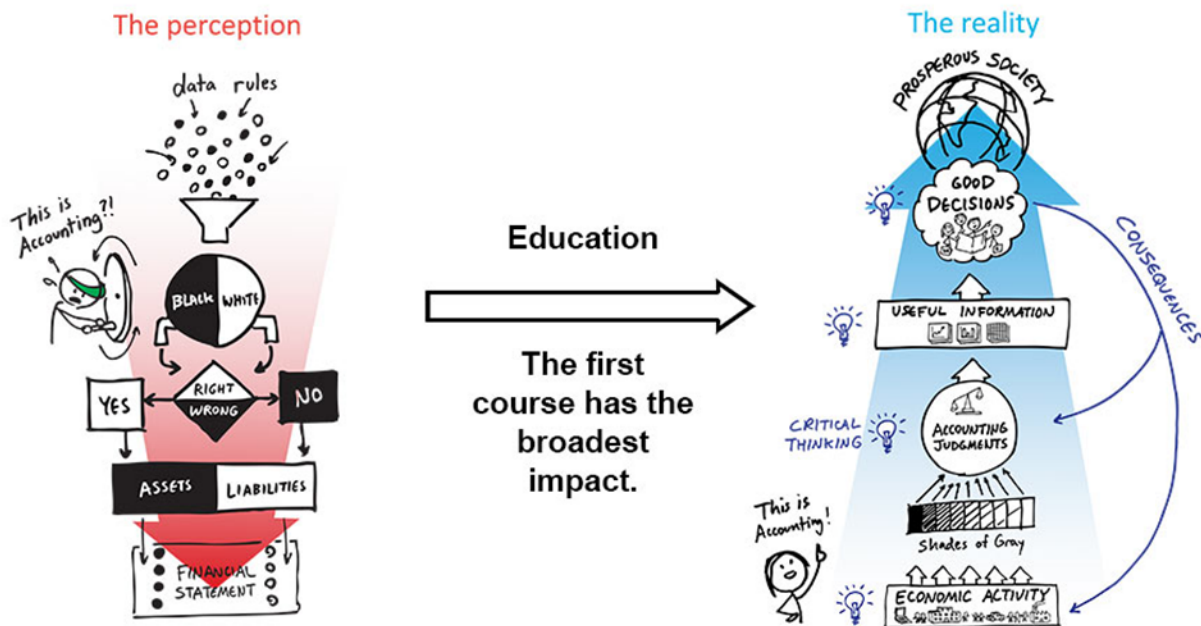
The Pathways Commission was formed by the American Institute of Certified Public Accountants (AICPA) and the American Accounting Association (AAA). The commission issued a number of reports on accounting education from 2012 to 2015.

One of the useful creations of the commission was the Pathways Vision Model. The version shown in **Exhibit 7** is especially useful when teaching introductory accounting students, who often have significant misconceptions about the nature of accounting. The general version of the model is shown in **Exhibit 8**.

Providing and discussing the Pathways Vision Model with students can help them recognize the nature of accounting—especially the idea that many problems in accounting are open-ended and involve multiple factors.

The Pathways Vision Model can also be used when designing the complexity of learning activities. **Exhibit 9** shows my general recommendations for cognitive Levels 1, 2, and 3. The ideas in this exhibit can be applied to any business discipline.

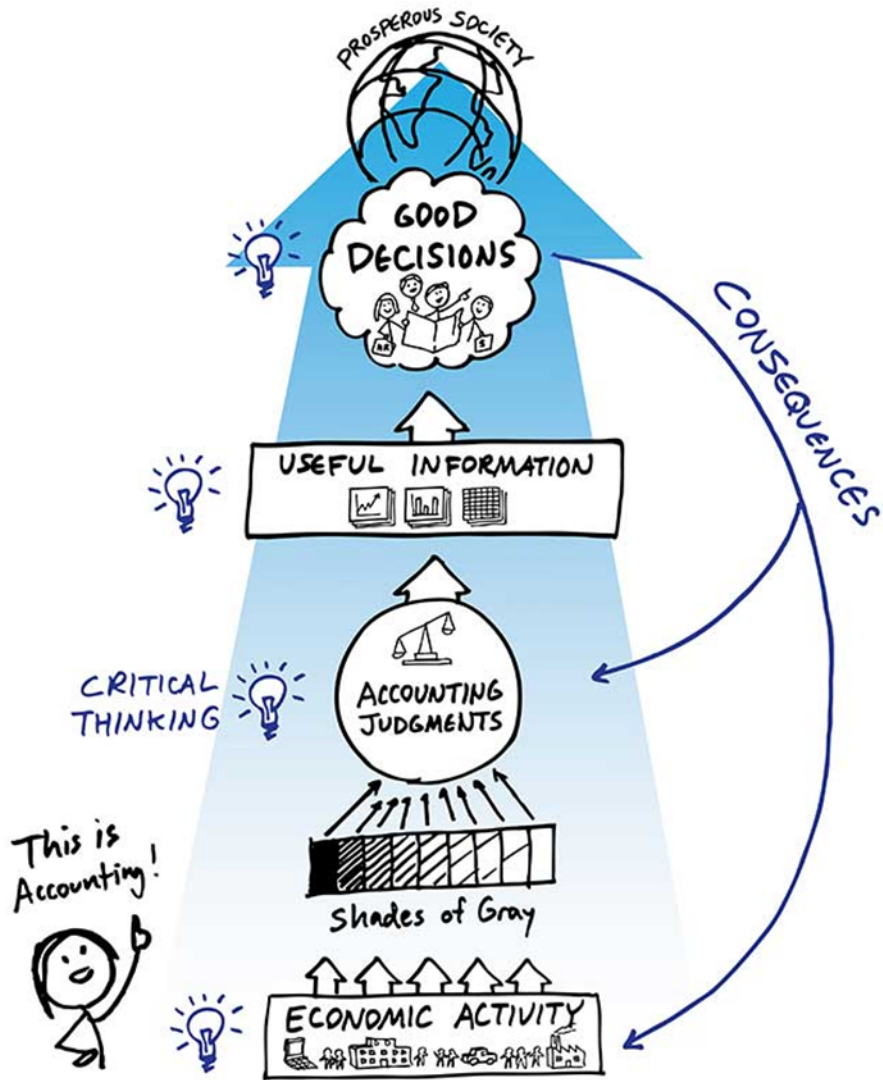
Exhibit 7 Pathways Vision Model – Perception Versus Reality



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Exhibit 8 Pathways Vision Model




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Exhibit 9 Assignment Complexity Appropriate for Students' Cognitive Levels

Component of Pathways Vision Model:	Level 1 "Confused Fact-Finder" Little/no critical thinking	Level 2 "Biased Jumper" Partial critical thinking	Level 3 "Perpetual Analyzer" Emergent critical thinking
Good Decisions	<ul style="list-style-type: none"> Few stakeholders and uncomplicated decisions 	<ul style="list-style-type: none"> Multiple stakeholders and decisions involving multiple factors 	<ul style="list-style-type: none"> Many stakeholders with divergent interests and complex decisions
Useful Information	<ul style="list-style-type: none"> Information is either useful or not useful (i.e., relevant or irrelevant) 	<ul style="list-style-type: none"> Questions exist about the degree of information usefulness 	<ul style="list-style-type: none"> Many questions exist about information usefulness
Accounting Judgments	<ul style="list-style-type: none"> Few accounting judgments 	<ul style="list-style-type: none"> Several accounting judgments 	<ul style="list-style-type: none"> Many accounting judgments
Shades of Gray	<ul style="list-style-type: none"> Few sources of uncertainty 	<ul style="list-style-type: none"> Multiple sources and degrees of uncertainty 	<ul style="list-style-type: none"> Many sources and degrees of uncertainty
Economic Activities	<ul style="list-style-type: none"> Straightforward, easily understood events and circumstances 	<ul style="list-style-type: none"> Moderate scope and interaction of events and circumstances 	<ul style="list-style-type: none"> Realistic scope of activities that may be highly complex
Consequences	<ul style="list-style-type: none"> Few consequences with clear-cut cause and effect relationships 	<ul style="list-style-type: none"> Some uncertain cause and effect relationships 	<ul style="list-style-type: none"> Many complex and uncertain cause and effect relationships

Susan Wolcott created this exhibit to provide guidance for faculty based on the reflective judgment model. This exhibit shows only the first three adult cognitive levels, which characterize most students in undergraduate programs. In general, the complexity for Level 1 is appropriate in introductory accounting, Level 2 is appropriate in Intermediate and possibly advanced undergraduate courses, and Level 3 is most likely appropriate for advanced undergraduate and pre-certification or master's courses.

The recommendations in this exhibit would apply equally to non-accounting courses by replacing "accounting" with "business" or another subject area.

3.7 Paul-Elder Critical Thinking Model

The Paul-Elder critical thinking model describes a range of attributes related to critical thinking. See the summary at [Paul-Elder Critical Thinking Framework — University of Louisville Ideas To Action](#). More details can be found at [Critical Thinking](#).

I have always been surprised that there do not seem to be any references to cognitive development in the Paul-Elder materials. I assume that the authors' goals have been to more fully describe critical thinking rather than to focus on how development progresses.

The next several pages contain exhibits tying my cognitive development framework with the Paul-Elder model.

- **Exhibit 10:** Links between the models
- **Exhibit 11:** cognitive rubric for the elements of thought
- **Exhibit 12:** cognitive characteristics for the intellectual standards
- **Exhibit 13:** cognitive levels, epistemological beliefs, and intellectual traits

Exhibit 10 Cognitive Development and the Paul-Elder Model

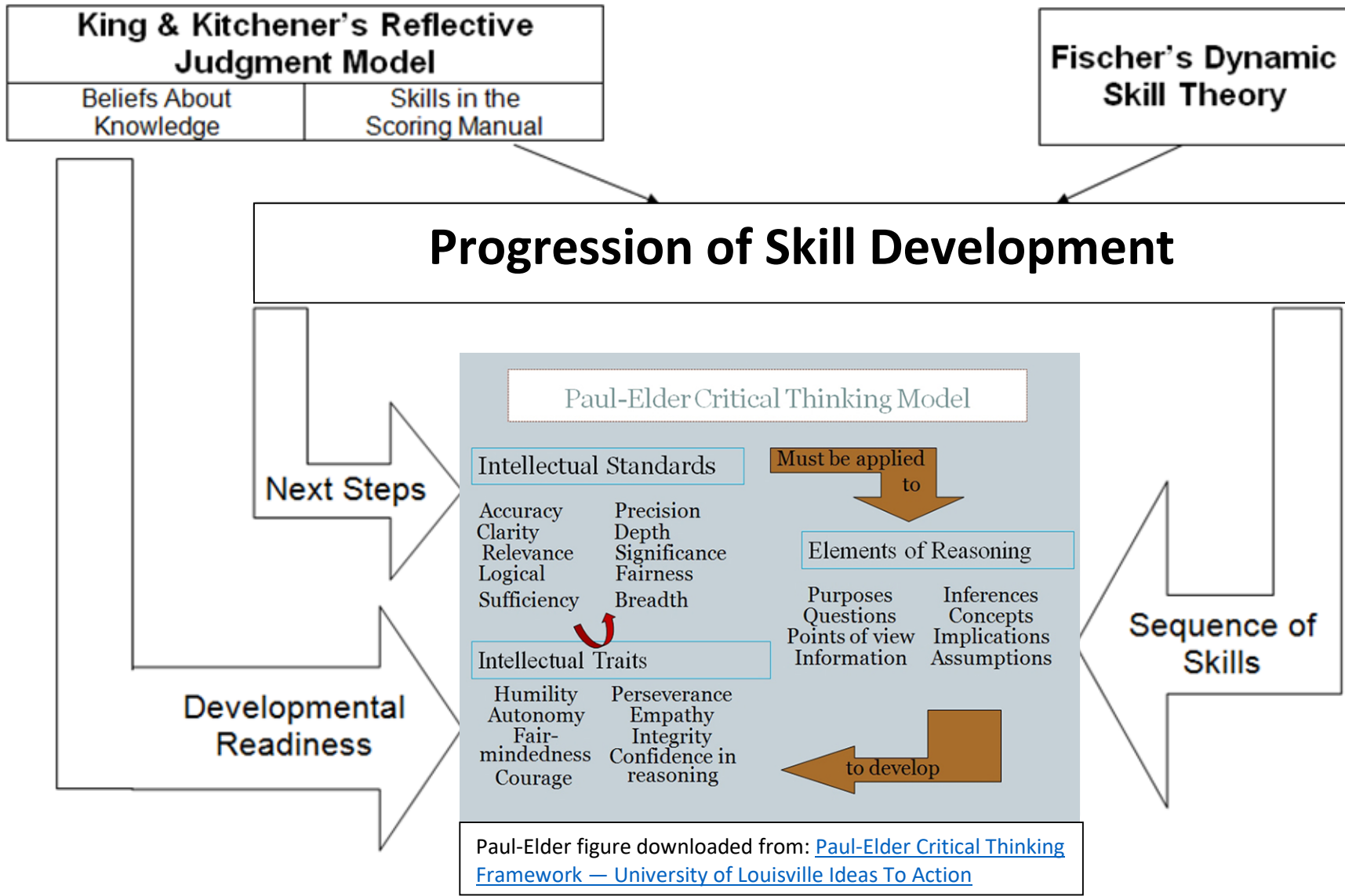


Exhibit 11 Cognitive Rubric for Paul & Elder’s Elements of Thought

Level 1 “Confused Fact-Finder”	Level 2 “Biased Jumper”	Level 3 “Perpetual Analyzer”	Level 4 “Pragmatic Performer”	Level 5 “Strategic Re-Visioner”
<p>Clarifies Purpose</p> <ul style="list-style-type: none"> States no purpose, recites purpose as given, or states purpose in terms of finding the single, “correct” answer 	<p>Clarifies Purpose</p> <ul style="list-style-type: none"> States purpose without careful thought, based on initial understanding of the task at hand (e.g. to offer a personal opinion/solution or to achieve a goal that might or might not be salient) 	<p>Clarifies Purpose</p> <ul style="list-style-type: none"> States purpose based on careful study of the agenda and task at hand, but does not distinguish between central and peripheral goal(s), objective(s), function(s), motive(s), or intention(s) 	<p>Clarifies Purpose</p> <ul style="list-style-type: none"> Clearly states a realistic purpose based on careful study of the agenda and task at hand, focusing on central/ significant/ most important goal(s), objective(s), function(s), motive(s), or intention(s) 	<p>Clarifies Purpose</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> Monitors progress and refines understanding of the purpose over time Seeks ways to generate new knowledge about the purpose
<p>States the Question</p> <ul style="list-style-type: none"> Does not distinguish questions that have definitive answers from those that are a matter of opinion (i.e., assumes that all questions have definitive answers) States no question or recites question as given 	<p>States the Question</p> <ul style="list-style-type: none"> Distinguishes questions that have definitive answers from those that are a matter of opinion States question without careful thought based on initial understanding of the problem or issue 	<p>States the Question</p> <ul style="list-style-type: none"> Distinguishes questions that have definitive answers from those that are a matter of opinion or that require multiple viewpoints Considers alternative ways to express the question/problem, identifies embedded issues, and breaks the question into sub-questions 	<p>States the Question</p> <ul style="list-style-type: none"> States the question at issue clearly and precisely in a way that productively guides thinking Focuses on central/ significant/ most important embedded issues and sub-questions 	<p>States the Question</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> Anticipates questions that may arise in the future Identifies issues arising from current limitations Describes process for systematically reinterpreting the question and issues over time

(continued)

(Exhibit 11 continued)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Gathers Information</p> <ul style="list-style-type: none"> • Uses very limited information; primarily "facts," definitions, or expert opinions • Cites irrelevant information 	<p>Gathers Information</p> <ul style="list-style-type: none"> • Uses limited information, primarily evidence and arguments supporting own position • Makes claims that are not supported by sufficient data 	<p>Gathers Information</p> <ul style="list-style-type: none"> • Uses a range of carefully-evaluated, relevant information that supports multiple viewpoints • Objectively explores the quality and sufficiency of information (quality includes clarity, accuracy, and relevancy) 	<p>Gathers Information</p> <ul style="list-style-type: none"> • Uses a sufficient range of carefully evaluated, relevant information, including alternative criteria for judging among solutions/viewpoints • Emphasizes high-quality information that is relevant to central questions/issues 	<p>Gathers Information</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> • Develops viable strategies for generating new or higher-quality information to address limitations
<p>Makes Inferences</p> <ul style="list-style-type: none"> • Does not acknowledge interpretation or inference beyond finding the "correct" answer or solution • Fails to reason logically from evidence to conclusions; relies primarily on unexamined prior beliefs, clichés, or an expert opinion 	<p>Makes Inferences</p> <ul style="list-style-type: none"> • Interprets information superficially as either supporting or not supporting a point of view; does not acknowledge assumptions • Provides little evaluation of alternatives; offers partially reasoned conclusions; uses superficially understood evidence and information to support own opinion 	<p>Makes Inferences</p> <ul style="list-style-type: none"> • Explores alternative plausible and logical inferences that can be made from available evidence (including assumptions underlying inferences) • Uses evidence to reason logically within a given perspective, but unable to establish criteria that apply across alternatives to reach a well-founded conclusion OR unable to reach a conclusion in light of reasonable alternatives and/or uncertainties 	<p>Makes Inferences</p> <ul style="list-style-type: none"> • Makes reasonable, well-founded inferences from available information and provides reasonable and substantive justification for assumptions • Reaches logical and appropriate conclusions using general principles that allow comparisons across alternatives (i.e., establishes the best possible conclusion using general principles) 	<p>Makes Inferences</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> • Systematically reinterprets evidence as new information is generated over time OR describes process that could be used to systematically reinterpret evidence • Articulates how a systematic process of critical inquiry was used to build conclusion/solution, including strengths and limitations

(continued)

(Exhibit 11 continued)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Clarifies Concepts</p> <ul style="list-style-type: none"> • Does not apply concepts (ideas, theories, laws, principles, or hypotheses) beyond reciting definitions • May identify irrelevant concepts 	<p>Clarifies Concepts</p> <ul style="list-style-type: none"> • Applies relevant concepts superficially; may not explicitly identify concepts used • Ignores relevant concepts or interpretations of concepts that disagree with own position 	<p>Clarifies Concepts</p> <ul style="list-style-type: none"> • Accurately and rigorously applies relevant concepts to gain a deeper understanding of the problem • Considers alternative concepts or alternative existing definitions of concepts 	<p>Clarifies Concepts</p> <ul style="list-style-type: none"> • Identifies and applies the most important concepts and definitions of concepts for a deep understanding of and realistic solution to the problem • Clearly explains key concepts and their implications 	<p>Clarifies Concepts</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> • Generates new concepts or new definitions of concepts to address limitations OR develops viable strategies for generating new concepts or new definitions of concepts
<p>Justifies Assumptions</p> <ul style="list-style-type: none"> • Does not acknowledge assumptions; if explicitly asked to address assumptions, responds inappropriately (e.g., provides definition or asserts a “correct” answer) 	<p>Justifies Assumptions</p> <ul style="list-style-type: none"> • Does not acknowledge assumptions; if explicitly asked to address assumptions, focuses on others’ assumptions, OR identifies some assumptions but fails to analyze them, OR provides superficial analysis of assumptions 	<p>Justifies Assumptions</p> <ul style="list-style-type: none"> • Identifies assumptions and explains their relationship to concepts, viewpoints, alternatives, etc. • Analyzes the strengths and weaknesses of assumptions, including the availability and quality of supporting evidence 	<p>Justifies Assumptions</p> <p>In addition to Level 3:</p> <ul style="list-style-type: none"> • Provides reasonable justification for choice of assumptions using evidence when possible • Explains how assumptions shape the conclusion/ solution 	<p>Justifies Assumptions</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> • Develops strategies for addressing limitations related to assumptions

(continued)

(Exhibit 11 continued)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Examines Implications and Consequences</p> <ul style="list-style-type: none"> Does not address implications or consequences; portrays alternatives/viewpoints dichotomously (e.g., right/ wrong, good/bad, smart/stupid) 	<p>Examines Implications and Consequences</p> <ul style="list-style-type: none"> Identifies limited implications and consequences, focusing primarily on the advantages of own position 	<p>Examines Implications and Consequences</p> <ul style="list-style-type: none"> Explores the implications of evidence, viewpoints, etc. to gain a deeper understanding of the problem Analyzes the advantages and disadvantages (i.e. the consequences) of alternatives 	<p>Examines Implications and Consequences</p> <p>In addition to Level 3:</p> <ul style="list-style-type: none"> Focuses on the most significant implications and consequences of key alternatives/viewpoints 	<p>Examines Implications and Consequences</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> Develops strategies for obtaining new evidence about the advantages and disadvantages of alternatives/ viewpoints
<p>Considers Point of View</p> <ul style="list-style-type: none"> Denies legitimacy of multiple points of view; portrays perspectives dichotomously (e.g., right/wrong, good/bad, smart/stupid) 	<p>Considers Point of View</p> <ul style="list-style-type: none"> Identifies own point of view and focuses on its strengths; focuses on the weaknesses of other points of view 	<p>Considers Point of View</p> <ul style="list-style-type: none"> Demonstrates fair-mindedness in identifying and evaluating the strengths and weaknesses of relevant points of view 	<p>Considers Point of View</p> <p>In addition to Level 3:</p> <ul style="list-style-type: none"> Determines the point of view that is most reasonable given the situation at hand 	<p>Considers Point of View</p> <p>In addition to Level 4:</p> <ul style="list-style-type: none"> Argues convincingly using a complex, coherent discussion of own perspective, including its strengths and limitations

Exhibit 12 Cognitive Levels for Paul & Elder’s Intellectual Standards

Standards include clarity, accuracy, precision, depth, breadth, logic, significance, fairness, completeness, validity, rationality, sufficiency, necessity, feasibility, consistency, authenticity, effectiveness, and efficiency.

Level 1 “Confused Fact-Finder”	Level 2 “Biased Jumper”	Level 3 “Perpetual Analyzer”	Level 4 “Pragmatic Performer”	Level 5 “Strategic Re-Visioner”
<p>Common Characteristics:</p> <ul style="list-style-type: none"> Equates thinking with memorizing a single, “correct” answer or with obtaining “the” answer from an expert (such as a textbook or lecture notes) Has no concept of “standards” beyond simple dichotomous classifications such as right/wrong, good/bad, or smart/stupid Makes illogical or contradictory statements <p>Next Steps in Developing Intellectual Standards:</p> <ul style="list-style-type: none"> Logically connect evidence, arguments, or other information to own point of view Apply definitions of standards to correctly sort information for a given problem into dichotomous categories such as clear/unclear, relevant/irrelevant, feasible/impossible, or effective/ineffective; explain reasoning for classifications Discuss the need to apply own judgment to a problem 	<p>Common Characteristics:</p> <ul style="list-style-type: none"> Equates personal opinion about what “seems right” or “seems logical” with application of intellectual standards Does not apply intellectual standards or focuses on superficial aspects of standards such as how many pieces of evidence support a position Over generalizes <p>Next Steps in Developing Intellectual Standards: Focusing on one intellectual standard at a time:</p> <ul style="list-style-type: none"> Use own words to explain an intellectual standard Use reasoning to discuss the degree to which individual pieces of information satisfy a standard such as clarity, accuracy, or validity Use reasoning to consider how well an argument or point of view satisfies a standard such as fairness or feasibility Discuss the benefits of identifying and controlling own biases 	<p>Common Characteristics:</p> <ul style="list-style-type: none"> Applies intellectual standards to own thinking Applies intellectual standards qualitatively Focuses on intellectual standards individually rather than holistically Applies an intellectual standard to a piece of information or within a point of view rather than across pieces of information or across viewpoints <p>Next Steps in Developing Intellectual Standards:</p> <ul style="list-style-type: none"> Assess how well a set of intellectual standards is satisfied Compare how well intellectual standards are satisfied across pieces of information, information sets, and points of view Determine which intellectual standards are more relevant or more important in a given situation 	<p>Common Characteristics:</p> <ul style="list-style-type: none"> Coordinates a range of intellectual standards when analyzing information and points of view Uses generalized principles to assess how well intellectual standards are satisfied across pieces of information, information sets, and points of view Assesses the quality of personal intellectual standards Fails to adequately anticipate situations calling for changes in intellectual standards <p>Next Steps in Developing Intellectual Standards:</p> <ul style="list-style-type: none"> Identify limitations of existing intellectual standards, the definitions of standards, or the ways in which standards are applied Identify opportunities for improvement in personal intellectual standards 	<p>Common Characteristics:</p> <ul style="list-style-type: none"> Seeks continuous improvement in personal intellectual standards over time Generates new intellectual standards, new definitions of standards, or new ways to apply standards to address limitations

Exhibit 13 Cognitive Levels, Epistemological Beliefs, and Paul & Elder’s Intellectual Traits

Traits include intellectual humility, intellectual courage, intellectual empathy, intellectual integrity, intellectual perseverance, faith in reason, and fair-mindedness.

Level 1 “Confused Fact-Finder”	Level 2 “Biased Jumper”	Level 3 “Perpetual Analyzer”	Level 4 “Pragmatic Performer”	Level 5 “Strategic Re-Visioner”
<p>Key Epistemological Beliefs:</p> <ul style="list-style-type: none"> • Knowledgeable persons or experts know or will find correct answers to all problems • Uncertainty either does not exist or is merely temporary • Until experts can agree, opinions are equally correct or equally biased guesses • It is sufficient to view problems without attention to realistic ambiguities and complexities <p>Developmental Readiness for Intellectual Traits:</p> <ul style="list-style-type: none"> • Beliefs conflict with the concepts underlying the intellectual traits; unlikely to demonstrate or consider intellectual traits • Likely to express confusion when exposed to intellectual traits 	<p>Key Epistemological Beliefs</p> <ul style="list-style-type: none"> • Uncertainty is due only to specific limitations such as lost or incorrect reporting of data, limited resources, or inability to correctly predict the future • Conflicting points of view for which evidence can be provided are equally valid • Criticizing an argument is the same as criticizing the person who makes the argument • It is sufficient to simply stack up evidence that supports one’s opinion • Experts are biased persons who are simply promoting their own agenda <p>Developmental Readiness for Intellectual Traits:</p> <ul style="list-style-type: none"> • Beliefs often lead to overconfidence in own abilities, conflicting with intellectual traits • Likely to address intellectual traits superficially • May resist self reflection 	<p>Key Epistemological Beliefs</p> <ul style="list-style-type: none"> • Endorsing one alternative denies the legitimacy of other alternatives • Problem 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 evidence-based interpretations or solutions <p>Developmental Readiness for Intellectual Traits:</p> <ul style="list-style-type: none"> • Beliefs encourage intellectual traits such as humility, empathy, and fair-mindedness • May struggle with aspects of intellectual perseverance and faith in reason because of personal difficulties endorsing and justifying a solution as the best alternative • Lacks ability to apply generalized principles needed to engage in systematic self reflection and continuous improvement 	<p>Key Epistemological Beliefs</p> <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 resolution to the problem <p>Developmental Readiness for Intellectual Traits:</p> <ul style="list-style-type: none"> • Beliefs are generally consistent with intellectual traits • Lacks ability to apply generalized principles needed to engage in systematic self reflection and continuous improvement • May choose to ignore or violate one or more intellectual traits (e.g. intellectual courage and fair-mindedness) 	<p>Key Epistemological Beliefs</p> <ul style="list-style-type: none"> • Learning is a life-long process, and generalized principles of inquiry can be employed in that process • As a result of careful inquiry and knowledge building over the course of a single lifetime and across generations, substantial improvements can be made in quality of life and professional practice • Taking reasonable risks associated with moving toward desired changes is necessary <p>Developmental Readiness for Intellectual Traits:</p> <ul style="list-style-type: none"> • Beliefs are consistent with all aspects of the intellectual traits • May choose to ignore or violate one or more intellectual traits (e.g. intellectual courage and fair-mindedness)

3.8 Create a Customized Critical Thinking Rubric

Exhibit 14 provides examples of critical thinking objectives and descriptions of performance at cognitive levels 1, 2, 3, 4, and 5.

PURPOSE: The purpose of **Exhibit 14** is to help you develop a customized critical thinking rubric. You might wish to develop a customized rubric because existing rubrics:

- Do not address the specific critical thinking skills you would like to assess
- Include more performance levels than needed, given the skills of your students and the objectives of your course/program/institution
- Use language that is inconsistent with your discipline

CHOOSE ROW(S): The table on the following pages includes rows for a variety of potential critical thinking skills. Choose a subset of the rows corresponding to the skills you would like to assess (e.g., based on the skills called for in an assignment or the learning objectives of your program or institution). For a classroom rubric, it is generally best to choose 3 to 7 rows that will fit on a single page.

CHOOSE NUMBER OF COLUMNS: The columns on the following pages correspond to cognitive levels 1 through 5, which are based on the skills exhibited at stages 3 through 7 of King & Kitchener’s reflective judgment model. For assessing undergraduate student work, it is usually sufficient for a rubric to include only levels 1 through 3 and possibly level 4. For master’s student work, you may wish to use only levels 1 through 4 or all 5 levels.

TITLE THE COLUMNS: You might want to re-label the columns in your rubric. For example, labels for a 3-column rubric might be “Weak, Average, and Very Good,” or “Limited, Developing, and Advanced.”

MODIFY TERMINOLOGY: If desired, modify the terminology in the rubric to match the language used in your course/discipline/institution. However, take care to ensure that the wording changes do not alter the complexity of thinking described within each column of the rubric.

PROVIDE DEFINITIONS: Consider providing your students with definitions of key terms used in the rubric. See the last page of the exhibit for ideas.

Exhibit 14 Examples of Critical Thinking Objectives and Cognitive Levels

	Level 1	Level 2	Level 3	Level 4	Level 5
Overall approach to the problem/question	Attempts to find the single "correct" answer to open-ended questions/problems	Appears to begin with conclusion and then stack up evidence/arguments to support it	Appears to perform comprehensive and objective analyses from different viewpoints, but unable to reach or strongly defend conclusions	Appears to develop well-founded conclusions based on comprehensive and objective comparison of viable alternatives	Proceeds as if goal is to construct knowledge, to move toward better conclusions or greater confidence in conclusions as the problem is addressed over time
Identifies and summarizes the problem/question in readings or other sources of information	Does not identify and summarize the problem, or identifies an inappropriate problem	Identifies the main problem; but does not identify subsidiary, embedded, or implicit aspects of the problem	Clearly identifies the main problem and subsidiary, embedded, or implicit aspects of the problem	In addition to previous level, emphasizes and states criteria for identifying the most important aspects of the problem	In addition to previous level, anticipates future problems and identifies issues arising from current limitations
Identifies and addresses uncertainties (i.e., reasons why the problem is open-ended)	Ignores uncertainty, or attributes uncertainty to temporary lack of information or to own lack of knowledge	Identifies at least one reason for significant and permanent uncertainty, but does not integrate uncertainties into analysis	Addresses significant and permanent uncertainties when interpreting and analyzing information	Identifies and discusses the significance of the most important uncertainties	Develops viable strategies for minimizing the most important uncertainties over time
Identifies information/evidence that is relevant to the problem	Identifies irrelevant information	Identifies at least some information that is relevant to the problem	Explores a wide range of relevant information	Focuses on the most important relevant information	Develops viable strategies for generating important relevant information over time
Clarify the facts, concepts, evidence and other forms of support for a position	Provides very limited support for OWN thesis, primarily unexamined prior beliefs, clichés, expert opinions, or quotes; Fails to acknowledge and/or provide support for thesis OTHER THAN OWN if viewed as "incorrect"	Explains support for OWN thesis, but uses superficially understood evidence; Fails to acknowledge and/or provide support for thesis OTHER THAN OWN, or provides less compelling evidence and then discounts it	Investigates a range of evidence supporting multiple viewpoints; Uses carefully evaluated evidence to reason logically for a GIVEN thesis; Provides inadequate support for OWN thesis in light of reasonable alternatives and/or uncertainties	Focuses on the most important relevant evidence and investigates evidence supporting multiple viewpoints; Uses carefully evaluated evidence to reason logically in support of own thesis; provides reasonable and substantive justification for interpretations	Articulates how a systematic process of critical inquiry was used to build a position
Clarifies and analyzes the information/evidence supporting OWN position/thesis	Provides very limited support, primarily unexamined prior beliefs, clichés, expert opinions, or quotes	Provides support, but uses superficially understood evidence	Explores support for multiple viewpoints, but fails to clearly identify or provide adequate support for own position/thesis	Uses carefully evaluated evidence to reason logically in support of position/ thesis	Articulates how a systematic process of critical inquiry was used to build position/thesis

(continued)

(Exhibit 14 continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
Clarifies and analyzes the information/evidence supporting a position/ thesis with which one disagrees	Fails to acknowledge and/or provide support; characterizes other positions as incorrect or wrong	Fails to acknowledge and/or provide support, or provides limited support and then discounts it	Investigates a range of evidence supporting a given position	Focuses on the most important relevant evidence for evaluating another position	Articulates how a systematic process of critical inquiry was or can be used to evaluate another position
Identifies and explores information/evidence supporting multiple viewpoints (or solutions, approaches, perspectives)	Portrays viewpoints dichotomously, e.g., right/wrong, good/bad, smart/stupid	Acknowledges more than one potential viewpoint, but provides superficial analyses	Explores arguments and evidence supporting multiple viewpoints	Evaluates information using general principles that allow comparisons across viewpoints	In addition to previous level, articulates a systematic process for evaluating viewpoints over time
Evaluate the quality (i.e., the relevance, reliability, and sufficiency) of evidence/support for a position	Repeats evidence or other forms of support from authoritative sources, taking it as truth	Superficially interprets evidence as either supporting or not supporting a position; equates unsupported personal opinion with other forms of evidence; focuses on quantity rather than quality of evidence	Evaluates the quality of evidence, addressing strengths, weaknesses, and context of the problem	In addition to previous level, emphasizes the highest quality evidence	In addition to previous level, develops viable strategies for addressing important limitations of evidence over time
Evaluate similarities and differences in points of view	Focuses on definitions or descriptions OR describes alternative viewpoints as right and wrong	Provides superficial comparison; focuses primarily on own agreement or disagreement	Provides accurate and detailed assessment of similarities and differences	In addition to Level 2: Develops new insights based on complex comparisons of multiple viewpoints	In addition to Level 3: Develops viable strategies for gaining new knowledge to more clearly identify similarities and differences
Compare and contrast two things, ideas, theories, or points of view	Focuses on definitions or descriptions OR describes ideas, theories, or points of view as right and wrong	Provides superficial comparison; focuses primarily on own agreement or disagreement with ideas, theories, or points of view	Provides accurate and detailed assessment of similarities and differences	In addition to Level 2: Discusses whether the similarities or the differences are more important in a given context	In addition to Level 3: Develops viable strategies for gaining new knowledge to more clearly identify similarities and differences
Identifies and evaluates key assumptions	Does not acknowledge assumptions; if explicitly asked to address assumptions, responds inappropriately (e.g., provides definition or asserts a "correct" answer)	Does not acknowledge assumptions; if explicitly asked to address assumptions, focuses on others' assumptions, OR identifies some assumptions but fails to analyze them, OR provides superficial analysis of assumptions	Identifies assumptions related to multiple perspectives; evaluates the reasonableness of assumptions	In addition to previous level, addresses the most important or critical assumptions	In addition to previous level, develops strategies for addressing limitations related to assumptions over time

(continued)

(Exhibit 14 continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
Monitor one's own comprehension and apply various strategies to clarify one's own thoughts and actions	Equates learning with knowing the correct solution; Fails to recognize own role in comprehension and thoughts other than simplistic aspects (e.g., time spent studying)	Fails to recognize qualitative differences in learning effort or performance; equates learning with "doing the work"; Ignores or seems discouraged by information suggesting that own learning approach is inadequate	Considers a wide range of learning strategies; Recognizes qualitative differences in effort and performance; Evaluates the quality of learning strategies in relation to own preferences and skills	In addition to Level 2: Views learning as a process that can be improved strategically over time	In addition to Level 3: Spontaneously addresses ways to improve learning or performance
Identifies and considers the influence of the context (including audience) on the issue	Does not address context beyond dichotomous characterizations such as right/wrong, good/bad, smart/stupid	Acknowledges the existence of different contexts, but focuses on context in support of own opinion	Identifies and considers the influence of context when analyzing perspectives and data/evidence	Analyzes the issue with a clear sense of scope and context, including an assessment of the audience of the analysis	Identifies and addresses long-term considerations related to the scope, context, and audience
Identifies and evaluates implications and consequences of alternatives	Does not address implications or consequences beyond dichotomous characterizations such as right/wrong, good/bad, smart/stupid	Considers implications and consequences only superficially; ignores negative consequences of own position	Analyzes implications and consequences for multiple alternative	In addition to previous level, establishes criteria to prioritize implications and consequences across alternatives	In addition to previous level, identifies processes for addressing implications and consequences over time
Clearly presents and supports conclusions	Provides facts, definitions, or other "authoritative" information that mask as conclusions instead of own conclusion	Clearly states conclusions and reasons, but limited to supporting primarily one perspective	Reluctant to select and defend a single overall conclusion in light of viable alternatives; may provide conclusion with inadequate support	Articulates criteria that apply across viable alternatives to reach well-founded conclusions	In addition to previous level, articulates how problem solving approach and criteria can be refined, leading to better solutions or greater confidence over time
Clearly organizes and presents information	Makes contradictory or illogical statements; lacks organization	Clearly presents own arguments, but fails to sufficiently break down the problem	Organizes information and concepts into viable framework for exploring realistic complexities of the problem	Organizes information using criteria that allow for qualitative comparisons across viewpoints/ alternatives	In addition to previous level, describes process for systematically reinterpreting evidence and/or solutions over time
Identifies limitations of position/thesis and establishes plans for addressing those limitations	Does not acknowledge significant limitations beyond temporary uncertainty; next steps articulated as finding the "right" answer (often by experts)	Acknowledges at least one limitation or reason for significant and enduring uncertainty; if prompted, next steps generally address gathering more information	Articulates connections among underlying contributors to limitations; articulates next steps as gathering more information and looking at problem more complexly and/or thoroughly	Adequately describes relative importance of solution limitations when compared to other viable options; next steps focus on efficiently gathering more information to address significant limitations	In addition to previous level, identifies viable processes for strategically generating new information/knowledge to aid in addressing significant limitations over time

(continued)

(Exhibit 14 continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
Establishes implementation plans for recommended solution	Ignores implementation or creates illogical implementation plan	Fails to adequately address alternative viewpoints in implementation plans	Establishes overly complicated implementation plans OR delays implementation process in search of additional information	Develops implementation plans that address multiple issues and viewpoints; focuses on pragmatic issues	Develops implementation plans that address multiple issues and viewpoints; addresses current as well as long-term issues
Adapts communication for the setting and audience	Does not appear to recognize existence of an audience	Provides insufficient information or motivation for audience to adequately understand alternatives and complexity	Provides audience with too much information (unable to adequately prioritize)	Uses communication that is appropriately designed for the setting and audience (e.g., objective tone, understandable terminology, appropriate detail, anticipates audience needs/questions)	In addition to previous level, encourages others address long-term issues and concerns
Identifies and controls for own biases	Does not appear to recognize existence of bias	Acknowledges the existence of potential biases, but does not recognize bias in own analysis or conclusions; makes comments that appear to lack objectivity (e.g., uses pejorative language when referring to others' arguments)	Identifies and describes methods to control for own biases; uses objective tone by avoiding biased language	In addition to previous level, identifies and addresses the most important sources of potential bias	In addition to previous level, describes process for systematically identifying and reducing bias over time
Use reflection to revise interpretations and conclusions	Expresses confusion about need to reflect; focuses on correctness of position; revises conclusion based on learning "correct" information	Exhibits overconfidence in own performance; focuses primarily on reinforcing original position, or changes position due to concrete evidence that another alternative is better	Explores alternative interpretations of evidence and/or alternative viewpoints; additional analyses may reduce ability to strongly support a single position; may be overly self-critical	Acknowledges limitations; reevaluates interpretations and conclusions when prompted; does not automatically engage in reflection	Systematically reevaluates interpretations and conclusions to address limitations, consider new circumstances, reach a better solution, or achieve greater confidence

(continued)

(Exhibit 14 continued)

Definitions of Key Terms:

- **Assumptions** are hypotheses, suppositions, conjectures, assertions, presumptions, beliefs, or premises that are taken for granted or that lie behind an argument. Assumptions are made because of uncertainties; the “truth” cannot be known or proven. Some assumptions are better than others. Better assumptions are more reasonable, logical, comprehensive, plausible, likely, rational, impartial, objective, justified, credible, and/or believable.
- **Context** refers to the circumstance, background, and/or relevant frameworks for evaluation such as cultural, social, behavioral, political, scientific, economic, ethical, personal, or theoretical.
- **Evidence/information** may include facts, descriptions, definitions, arguments, opinions, ideas, claims, theories, concepts, observations, research findings, values, perceptions, beliefs, influences, effects, and so on. Evidence/information can be obtained in many ways such as reading, seeing, hearing, touching, feeling, experiencing, interacting, and thinking.
- **Importance** is specified using appropriate criteria such as evidence quality, relevance to decision context, or other priorities.
- **Quality** includes factors such as evidence source (e.g., unbiased, academic), accuracy, reliability, completeness, relevance, and sufficiency; Sufficiency focuses on the whether enough high-quality evidence exists to be persuasive and/or convincing.
- **Reflection** involves careful evaluation and reconsideration of alternative arguments, quality of evidence, assumptions, interpretations, assessments of importance, and conclusions.
- **Uncertainties** can relate to many aspects of the problem, including the problem definition, availability of solution alternatives, quality and interpretation of information, effects of alternatives, priorities and values of the decision maker and others, and so on. **Temporary uncertainties** relate to conditions that will become known in the future (e.g., experts will find the answer, information will become available, or effects will be knowable).
- **Viewpoints/perspectives** can relate to any type of grouping that is meaningful to the problem, such as categories of people, cultures, societies, roles, races, genders, hierarchies, theories, concepts, ideas, beliefs, attitudes, physical locations, time, disciplines, values, or emotions.

4. Examples from My Courses

4.1 Assignment Design for Critical Thinking Development

This section provides guidance about how to design assignments to proactively help students develop critical thinking skills. Below is a summary of my recommendations.

1. Identify or create a scenario involving an open-ended problem—one for which there is no single correct answer. Design the scenario with an appropriate amount of complexity for your students (see **Exhibit 9**). Students are likely to be more motivated and to provide the strongest performance if the problem is interesting and if they perceive it as relevant. The best problems focus on real or realistic situations. For lower-level courses, consider problems that the students can understand with little or no prior business experience OR ensure that your course provides the needed learning.
2. Generate potential questions aimed at different skill levels. Several ideas for assignment questions are included in the AICPA faculty guide (see Section 3.3 in this document). Once you are comfortable with the basic idea behind these recommendations, you might find it easier to work from a one-page summary, as shown in **Exhibit 15**.
3. Select a subset of questions addressing the range of skills that are particularly important for your students, as follows:
 - a. Ask at least one question aimed at the lowest expected level of performance for your students. For most courses, this means including at least one question aimed at the first column in **Exhibit 15** (Level 1 → Level 2). However, it might be appropriate to begin at a higher skill level IF a prior assessment indicates that all students perform at a higher level.
 - b. Aim the majority of questions at:
 - i. The cognitive level of your average student, and
 - ii. The targeted level of performance for students in the course—typically one level higher than the current ability of the average student.
 - c. To challenge students who have higher than average ability and to convey to all students that important high-level skills exist, ask one or more questions that are above the targeted level. See the examples later in this document.

Exhibit 15 Templates for Designing Developmental Questions

Level 1 → Level 2—Identifying	Level 2 → Level 3—Exploring	Level 3 → Level 4—Prioritizing	Level 4 → Level 5—Envisioning
<p>Identifying Relevant Information:</p> <ul style="list-style-type: none"> * List data or types of information relevant to _____ * Identify relevant information in _____ (a textual passage such as a case, article, piece of literature, etc.) * Access relevant standards or rules for _____ * Identify factors related to _____ * Identify various potential solutions to _____ * Describe arguments in favor of _____ <p>Identifying Uncertainties:</p> <ul style="list-style-type: none"> * Explain why _____ cannot completely eliminate risk of _____ * Describe uncertainties concerning _____ * Identify and describe uncertainties about the interpretation or significance of _____ * Identify risks associated with _____ * Describe why there is no single, “correct” way to _____ * Identify reasons why _____ might change or vary 	<p>Interpreting Information From Multiple Viewpoints:</p> <ul style="list-style-type: none"> * Describe the pros and cons of _____ * Analyze the costs and benefits of _____ * Explain how ambiguities affect your analysis of _____ * Identify assumptions associated with _____ (a point of view or alternative) * Interpret _____ from the viewpoint of _____ * Appropriately use _____ (a technique) to analyze _____ * Objectively evaluate _____ information * Explain how alternative solutions might affect _____ (one or more stakeholders) * Analyze the quality of information and evidence related to _____ * Identify own biases and explain how those biases were controlled when _____ * Identify the effects of _____ on _____ <p>Organizing Information:</p> <ul style="list-style-type: none"> * Develop meaningful categories for analyzing information about _____ * Organize the various aspects of _____ to assist in decision making 	<p>Prioritizing and Concluding:</p> <ul style="list-style-type: none"> * Develop and use reasonable guidelines for drawing conclusions regarding _____ * Assess the degree of risk of _____ * Objectively consider _____ when making a decision about _____ * Prioritize _____ * Consider _____ in reaching a conclusion * Develop reasonable recommendation for _____ * Address the costs and benefits of _____ in reaching a conclusion about _____ * Develop reasonable policies for _____ * Develop an effective plan for addressing _____ <p>Effectively Involving Others in Implementation:</p> <ul style="list-style-type: none"> * Take actions to implement the best solution to _____ * Organize _____ (a communication) so that it is meaningful to the receiving party * Communicate _____ effectively for _____ (a given setting and audience) 	<p>Acknowledging Limitations:</p> <ul style="list-style-type: none"> * Identify and describe potential future developments in _____ * Describe limitations to a recommendation about _____ * Strategically consider contingencies and future developments related to _____ <p>Creating and Monitoring Strategies</p> <ul style="list-style-type: none"> * Develop and monitor strategies for _____ * Implement appropriate corrective action for _____ over time * Acknowledge changing circumstances and reconsider _____ (a solution) as appropriate * Continuously monitor and update _____, as needed * Develop strategic uses of _____ * Manage _____ under changing or unusual demands * Apply continuous improvement principles to _____

4.2 Assignment Design for Ethical Scenarios

Exhibit 16 provides my templates for designing ethical decision scenario questions. I have found that students typically perform one level lower on ethics cases compared to typical business cases. My guess is that the lower performance is caused by (1) students' lack of experience with ethics cases and (2) students' emotional desires to demonstrate "the right thing to do." (This is an area ripe for academic research!)

See the WorldCom examples later in this document for examples of student writing for an ethics problem.

4.3 Classroom Discussions

When conducting a classroom discussion of an open-ended assignment, begin with the well-defined course material. Then move sequentially from less complex questions to the most complex questions. This sequence allows students having weaker skills to participate in the discussion as long as possible. Once the discussion exceeds their skills by more than one level, students are not likely to understand the issues and arguments raised. Do not be concerned if insufficient class time exists to address the most complex questions; you can provide students with feedback on written papers for those questions.

Also consider student abilities when deciding whether or how to call on students during a discussion. Students having weak skills are unable to respond adequately to high-level questions regardless of their advance preparation or effort. Here are two approaches for addressing this concern:

- a. Have students discuss a question in small groups, and then call on representatives to share their group's response with the whole class. For this approach to be most successful, group members should have diverse skill levels.
- b. Use an assessment early in the course to determine the skill levels of individual students, and use that information to call on students who are likely to be able to address each question. In general, assume that students who are adequately prepared cannot adequately address questions more than one level beyond their current level. This assessment does not need to be extremely accurate; you can use the simple uncertainties exercise described in the AICPA faculty guide.

Exhibit 16 Templates for Designing Developmental Ethical Dilemma Questions

Level 1 → Level 2—Identifying	Level 2 → Level 3—Exploring	Level 3 → Level 4—Prioritizing	Level 4 → Level 5—Envisioning
<p>Identifying Ethical Problems and Courses of Action:</p> <ul style="list-style-type: none"> • Does _____ create an ethical problem for _____? Why or why not? • Is _____ a business issue, an ethical issue, or both? Explain. • How is it possible that _____ might not know _____? • List stakeholders who might be affected by _____. • List at least _____ potential courses of action for this problem. • List data or types of information relevant to _____. • Describe uncertainties concerning the best course of action for this problem. • Describe why there is no single, “correct” way to _____. 	<p>Objectively Consider the Well-Being of Others and Society:</p> <ul style="list-style-type: none"> • Describe the different viewpoints about whether _____ should _____. What assumptions lie behind each viewpoint? Are differences in ethical values evident in the different viewpoints? • Discuss whether it is fair for _____ to _____. Provide arguments for both sides. • What are the ethical costs and benefits of _____? • Discuss the preferences of various stakeholders for this problem. • Compare managers who _____ with managers who _____. What assumptions lie behind these managers’ decisions? Do you see a difference in ethical values? • Discuss the pros and cons (or costs and benefits) of a company policy that might prevent _____. • Appropriately use _____ (an ethical framework) to analyze _____. • Explain how alternative solutions might affect _____ (one or more stakeholders). 	<p>Clarifying and Applying Ethical Values:</p> <ul style="list-style-type: none"> • What is the best overall solution to this problem for society? What values did you use to arrive at the solution? • What ethical values should _____ use to address the concerns of their critics? • Draw a conclusion about whether it is fair for _____ to _____. Identify the values/priorities you used to reach your conclusion. • Discuss alternative sets of values/priorities that could be used to draw a conclusion about _____. • When managers are faced with uncertainties about _____ such as in this situation, what criteria should they use to decide _____? What values did you use to arrive at the solution? • What are _____’s ethical obligations when _____? What values did you use to arrive at your conclusions? • Recommend two or more company policies that might prevent _____. What values did you use to arrive at your solution? 	<p>Working Toward Ongoing Improvement in Personal, Organizational, and Social Ethics:</p> <ul style="list-style-type: none"> • How might _____ (a company) continuously improve its _____ practices to benefit itself and society? • How can company managers determine on an ongoing basis whether their _____ practices are ethical? • How can _____ (an organization) monitor whether its _____ practices are ethical? • How can _____ increase the likelihood that _____ will benefit from _____? • Discuss the limitations of a company policy to prevent _____. In light of these limitations, how can companies prevent behaviors such as _____?

4.4 Assignment: Corporate Values and Decision Making

See the **Huber & Company** case assignment in **Exhibit 17**. Huber & Company is a hypothetical company.

I used this case in a first-year undergraduate business critical thinking course at Aalto University (Finland). The case includes several links to web pages that have since been revised, so the assignment information is partly outdated.

Strong performance on this case assignment requires considerable Level 3 skills; students must take the perspective of one company while also incorporating the perspectives of Nike and its critics. Students with weak critical thinking skills tend to address this assignment from only one perspective. Thus, this case would be inappropriate for most first-year undergraduate students. However, I have found that students at Aalto University perform at a higher level than I would expect at most universities in the U.S. or Canada. Nevertheless, this case assignment consisted of several learning activities to specifically help students learn about and to demonstrate the course expectations.

A major goal of the assignment was to establish critical thinking expectations and to give students an opportunity to practice demonstrating and improving their critical thinking skills. The series of learning activities is described in **Exhibit 18**.

Students used the worksheet in **Exhibit 19** in the classroom to (1) summarize information they included in their own written responses to the case and (2) engage in discussions with peers. The purpose was to help students expand their analyses and provide a basis for the self-evaluation. Students used the rubric in **Exhibit 20** to self-evaluate their performance before revising their case submissions.

Exhibit 17 Case Assignment: Huber & Company

Assume that you work for Huber & Company (HC), a business consulting company. Your company has an annual employee retreat, in which new employees are given a jacket with the company's logo. In prior years, your company has purchased Nike-brand jackets (and paid a local company to sew on the company's logo).

At a recent management team meeting, several managers objected to the continued purchase of Nike products because they had heard about activist concerns regarding worker conditions in Nike outsource partner factories (see the attached summary of the "Nike Controversy"). These managers proposed that Huber & Company should switch to another brand, such as Puma. Other members of the management team argued that no employees had complained about receiving a Nike product and that virtually all brands rely on factories similar to those used by Nike. To help the management team make a final decision, you were asked to perform at least some research and provide a memo with your recommendation about whether to purchase Nike-brand jackets this year.

Required:

Prepare a 1-to-2 page (single-spaced) business memo with your analysis of relevant information and your recommendation to the management team of Huber & Company (HC).

NOTE:

- Useful research might include this article: Shelly Banjo, Inside Nike's Struggle to Balance Cost and Worker Safety in Bangladesh, Wall Street Journal, April 21, 2014.
- For purposes of this assignment, assume that Huber & Company is an international consulting company with values identical to those of PriceWaterhouseCoopers (PwC), an international accounting firm. See the following web pages:
 - **Values** www.pwc.com/gx/en/ethics-business-conduct/our-values.html
 - **Code of Conduct** www.pwc.com/gx/en/ethics-business-conduct/code-of-conduct.html
 - **Ethics Questions to Consider** www.pwc.com/gx/en/ethics-business-conduct/ethics-questions.html
 - **Corporate Responsibility** www.pwc.com/gx/en/ethics-business-conduct/corporate-citizenship.html

Nike Controversy²

To reduce costs and focus on core competencies, companies increasingly outsource manufacturing activities to vendors in countries having low labor costs such as China, India, Thailand, Indonesia, and Mexico.

² The Nike scenario is adapted from Eldenburg, L. E. and Wolcott, S. K. (2011) *Cost Management: Measuring, Monitoring, and Motivating Performance* (2e), John Wiley & Sons.

Certain activists argue that this practice is socially irresponsible. They site numerous factory problems in low-cost countries such as excessive work hours, poverty wages, toxic gas releases, and harassment of union organizers (e.g., Connor, 2001; The NikeWatch Campaign, n.d.; www.oxfam.org.au). Such worker conditions have prompted individuals and organizations to reconsider their purchasing habits and policies.

Activist groups sometimes target individual companies to publicize outsource factory working conditions. Since 1995, Nike has been criticized for human rights abuses, labor exploitation, and environmental damage by companies that manufacture its athletic shoes and apparel. As of 2009, Nike outsourced manufacturing to approximately 600 factories employing over 800,000 workers in 46 countries (Nike, 2010:33). Activists argue that Nike can afford to pay more to its outsource partners to improve worker pay and factory conditions. They hope that Nike will change its policies, placing greater pressure on other companies to take similar actions (The NikeWatch Campaign, n.d.; www.oxfam.org.au).

Over time in response to activist concerns, Nike has announced goals to improve working conditions and has instituted monitoring practices to evaluate factory compliance. Company managers state that the company considers compliance issues before placing production orders, and that it includes compliance monitoring costs in its purchasing decision process. In other words, Nike is less likely to purchase from outsource partners that cost more to monitor. The company has conducted audits of the manufacturing facilities and implemented action plans to resolve issues related to health and safety, pay and benefits, terms of work, and management-worker relations (www.nike.com). In recent years, Nike managers have admitted that many of efforts have been unsuccessful. The company has reduced the number of outsource partners and called for industry-wide change (www.nikebiz.com).

Yet, controversy remains about whether Nike has done enough to improve worker conditions. Several activist groups have cited a lack of success in Nike's monitoring programs and have recommended consumer boycotts of Nike products until its outsource factories meet acceptable standards (e.g., Connor, 2001; The NikeWatch Campaign). Some buyers have followed these recommendations. For example, during 2002 the Minneapolis Board of Education adopted a "sweat-free" purchasing policy that was promoted by student activists (Plimpton, 2003). During 2010, University of Wisconsin-Madison ended a collegiate apparel licensing agreement with Nike over concerns that contractors do not make severance payments to workers of closed factories (Lucas, 2010).

In contrast to activists' positions, some people have argued that boycotts against companies such as Nike cause more harm than good. Such boycotts often lead to factory closures. Workers who were already poor often lose their jobs, and unionization efforts and other improvements are hindered (Connor, 2001). It is also difficult for companies to adequately monitor working conditions at outsource locations. Workers are often afraid to talk with inspectors, and they sometimes provide inaccurate information. For example, workers may

erroneously say that they are not paid overtime because they do not understand how their pay is calculated (Economist, 1999).

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Exhibit 18 Learning Activities: Huber & Company

Sequence of Learning Activities

This assignment was used across several classroom days; each session was three hours long.

- During the first session students engaged in the following activities:
 - Individually write down words/phrases that describe critical thinking.
 - Share their words/phrases with another student, and then update individual lists.
 - Individually read the assignment.
 - Discuss in pairs how they will demonstrate critical thinking on the assignment.
 - In groups of 4, create a list of words/phrases that describe critical thinking skills/ characteristics for the assignment.
 - In groups of 8, create a list (similar to above) on large poster paper, and then post on the classroom wall.
 - Individually go around the room and read other groups' lists, and then update individual lists.
 - Students were told that the submission required for the second session would be (1) graded only for effort and (2) used to diagnose areas for improvement. Purpose: Reduce emotional stress associated with the first assignment and encourage experimentation with critical thinking style.

- During the second session, students engaged in the following activities:
 - Submitted individual case response electronically and brought printed copy to class
 - Held in-class discussions about critical thinking attributes related to the assignment (**Exhibit 19**).
 - Individually completed and turned in the self-evaluation form (**Exhibit 20**). The self-evaluation was checked by the professor only for completion, and then it was returned to the students. (Note: In a later session during the course, students used a similar form for peer evaluations.)

- During the fourth session, students were required to submit their revised responses to the case. Only the resubmission was graded, and the grading rubric was virtually identical to the self-evaluation form in **Exhibit 20**.

Exhibit 19 Worksheet for In-Class Activity: Huber & Company

Students used this worksheet in the classroom to (1) summarize information they included in their own written responses to the case and (2) engage in discussions with peers. The purpose was to help students expand their analyses and provide a basis for the self-evaluation.

Stakeholders	
List the stakeholders (and goals/preferences, if applicable) that you identified in your paper. (Note: you might have identified stakeholders within your analyses of alternatives)	
<u>“Key” (i.e., Most Important) Stakeholders</u>	<u>Other Stakeholders</u>
Arguments IN FAVOR of Buying Nike Brand Jackets	
List (using phrases or short sentences) each of the arguments you included in your paper IN FAVOR of continuing to buy Nike brand jackets.	

(continued)

(Exhibit 19 continued)

Arguments AGAINST Buying Nike Brand Jackets
List (using phrases or short sentences) each of the arguments you included in your paper AGAINST continuing to buy Nike brand jackets.
Conclusion
Describe (using phrases or short sentences): (1) your recommendation for what HC should do and (2) how you explained why your recommendation was better than other alternatives

Exhibit 20 Self-Evaluation Rubric: Huber & Company

Name: _____

1. Assess the Situation			
Criterion	Weak	Average	Strong
1.1 States purpose	Does not state purpose, or states incorrect purpose; Or, incorrectly assumes that purpose is to write an essay	States purpose, but statement is limited (e.g., does not identify controversy at HC)	Clear, concise and realistic statement of purpose that would be understood by someone unfamiliar with the situation
1.2 Identifies stakeholders and goals/preferences (may be embedded within analyses of pros and cons)	Identifies only the most obvious stakeholders (e.g., company and factory workers)	Identifies the most obvious stakeholders (e.g., company and factory workers) plus at least one more (e.g., activists, shareholders, competitors, consumers, citizens of low-cost countries)	Identifies a wide range of relevant stakeholders who are likely to be important
1.3 Correctly applies relevant concept(s)	Provides no discussion of outsourcing; Misinterprets concept (for example, refers to "Nike's workers")	Correctly recognizes that Nike does not have direct control over worker conditions in outsource partner factories	Recognizes that addressing worker conditions in outsource partner factories is complex and not easily addressed by Nike; Recognizes economic pressure for Nike to outsource
1.4 Addresses lack of relevant information	Does not seem to be aware of any lack of relevant information; Or, seems to believe that more information will "solve" the problem	Obtains or identifies at least one piece of additional relevant information; Focuses on providing more support for current conclusion	Obtains or identifies the need to obtain additional relevant information that might disagree with conclusion
<p>What might you do differently on future assignments to more thoroughly assess the situation? Be specific.</p> 			

(Continued)

(Exhibit 20 continued)

2. Analyze Major Issues			
Criterion	Weak	Average	Strong
2.1 Thoroughly explores pros and cons from multiple viewpoints	Discusses irrelevant information, or does not appear to interpret information or to recognize valid multiple viewpoints (e.g., focuses on stating “facts”)	Partially explores multiple interpretations and relevant issues for the HC situation; Focuses primarily on arguments for own conclusion	Objectively considers multiple viewpoints while thoroughly exploring significant pros and cons of alternatives for HC
2.2 Uses reasonable assumptions	Does not acknowledge assumptions, or adopts an unreasonable/ unwarranted assumption that caused the central problem to disappear	Identifies and attempts to justify at least one assumption (and the assumption is reasonable)	Uses assumptions only when needed; Identifies and provides reasonable, substantive justification for all key assumptions
2.3 Questions information and interpretation	Does not interpret or misinterprets information; Makes unsupported claims	Raises at least one question about interpretation/ relevance/ reliability/ quality of information	Identifies multiple significant questions and/or limitations about information relevance/ reliability/ quality
<p>What might you do differently on future assignments to more thoroughly analyze major issues? Be specific.</p>			

(Continued)

(Exhibit 20 continued)

3. Reach Well-Founded Conclusions			
Criterion	Weak	Average	Strong
3.1 Uses decision criteria to reach logical conclusion(s)	Provides unclear and/or illogical conclusions; Decision criteria are missing or unclear	Provides at least one valid criterion for choosing one alternative over another, but focuses primarily on arguing in favor of one conclusion	Uses general criteria/ principles/ values that allow comparisons across alternatives; Reached conclusion(s) that are reasonable and feasible for the HC situation
3.2 Discusses limitations and implications of recommendation	Does not seem to be aware of any limitations or implications of recommendation	Explicitly states at least one limitation or implication of recommendation	Explicitly states multiple risks, limitations, or implications of recommendation; Offers implementation advice for HC
What might you do differently on future assignments to improve conclusions? Be specific.			
4. Mindset			
Criterion	Weak	Average	Strong
4.1 Conveys objectivity	Seems unaware of "facts" are not fully known	Seems to discount or ignore viewpoints that disagree with own opinion; Seems biased toward own opinion(s)	Uses tone and language that convey open-mindedness; Avoids overstatements and unfounded criticisms; Differentiates among facts, assumptions, and opinions
4.2 Conveys skepticism	Seems to assume there is one "correct" solution that is not based on opinion(s)	Seems overly confident about own opinion	Displays appropriate doubt; Seems to recognize that identifying a best solution is complex and uncertain

4.5 Case with Sequential Assignments and Porter's Five Forces

See the **Kirkland Sandwich** case assignment in **Exhibit 21**. Kirkland Sandwich is a hypothetical company.

I used this case in a first-year undergraduate business critical thinking course at Aalto University (Finland). The case required students to use Porter's Five Forces, a model they learned in another business course that they took at the same time as critical thinking. I planned the use of this model in conjunction with the professor for the other course.

During the course, we repeatedly used the critical thinking model shown in **Exhibit 22**.

Possible Ways to Use Kirkland Sandwich

I used the Kirkland Sandwich case as a final exam, with the grading scale in **Exhibit 23** to evaluate student performance. Students were told in advance that they should apply Porter's five forces on the final exam case.

Alternatively, Kirkland Sandwich could be used in a series of assignments as follows:

- **Exhibit 24** Session #1 Assess the Situation: Kirkland Sandwich
- **Exhibit 25** Session #2 Apply Porter's Five Forces: Kirkland Sandwich
- **Exhibit 26** Session #3 Conclusions: Kirkland Sandwich

NOTE: The instructions in **Exhibit 26** require students to explicitly consider uncertainties. The requirement in this assignment is Level 3 because students must go beyond uncertainty identification; they must explain the effect(s) of each uncertainty.

Exhibit 21 Case Assignment: Kirkland Sandwich

Gabrielle Rousseau, owner and CEO of Kirkland Sandwich, Inc. (KS), was not pleased with last year's final financial results. She knew that sales had increased last year, so she had expected profits to be higher, too. Unfortunately, profits were roughly the same as last year.

Company Background

Gabrielle had launched the company ten years ago out of her own kitchen. She began by selling homemade, pre-wrapped sandwiches. Mid-morning on week days, she delivered batches of sandwiches to the owners of lunch carts located in front of several Seattle office buildings. Her sandwiches were made using better quality ingredients than the pre-made sandwiches that were previously available, so they quickly became popular. Her sales grew rapidly, prompting her to hire employees and move production to a commercial kitchen. With the larger space, she expanded her customer base to include coffee shops, bars, and small cafeterias. KS currently sells to approximately 40 customers, primarily in the downtown Seattle area.



Gabrielle started her business by personally supervising all of the operations, but she always disliked administrative duties. As the business grew, she had gradually turned over most of the day-to-day business operations to two managers: (1) Claudia Pomeroy was hired five years ago as Manager of Operations to oversee production, delivery, and administration, and (2) Nobu Ota was hired two years ago as Manager of Marketing and Sales. Gabrielle now had time to work on new product development and to pursue new lines of business.

At a recent company retreat, the managers and employees developed the following vision and values statements:

Vision: We will be recognized as the company that sells the freshest, healthiest, and best-tasting sandwiches.

Values: We exceed the expectations of every customer, every day. Through leadership, trust, loyalty, teamwork, and commitment our company will provide a fulfilling work environment for our employees. Through ethical, responsive, and profitable actions, we will enhance value for our company. We are dedicated to operate with integrity and be good corporate citizens and leaders in the community in which we operate.

(Continued)

(Exhibit 21 Continued)

Next Year's Forecast

Based on economic trends, Claudia used the following major assumptions to develop financial forecasts of sales, costs, profits, and cash flows for next year:

- Nobu told her that he is finding it increasingly difficult to find new customers because KS is beginning to saturate (i.e., fill) the downtown Seattle market. In addition, increased competition will probably prevent KS from raising its prices, even when food and other costs increase. So Claudia forecast sales next year to be the same as last year.
- The company's food supplier increased prices considerably last year. Claudia investigated other suppliers but was unable to find a lower-cost supplier that would guarantee high-quality ingredients. So, she assumed that food costs would increase this year by the same amount as last year.
- Rent for the commercial kitchen is likely to increase next year, when the current lease expires. Rates for similar space in the local area are about 20% higher than the company's current lease rate, so Claudia included a 20% rate increase in her forecast.
- Because of ongoing profit and cash flow problems, Claudia assumed that none of the employees would receive pay increases this year, and she assumed that employee benefits would be unchanged.

Because of the decline in last year's profit and cash flows, the company needed to borrow money from the bank. Gabrielle was upset when the company borrowed money, and she would like to pay the loan off as soon as possible.

Discussion at Management Team Meeting

Following is an excerpt of the discussion at a management team meeting.

Claudia	After taking into account forecasted cost increases and assuming that sales next year are the same as last year, I am forecasting negative cash flows next year of \$50,000. That's a lot of money. After borrowing last year, we will probably have trouble asking the bank for another loan this year. So we will need to increase sales, reduce costs, or both.
Nobu	Last year I coached the delivery people about how to talk with customers. This seemed to have a positive effect on customer relationships, and we were able to increase the size of orders from many customers. Even so, we are having trouble because competitors are offering more than just sandwiches. To increase sales, we need to come up with products beyond sandwiches.

(Continued)

(Exhibit 21 Continued)

Gabrielle	As you know, I am passionate about creating new sandwiches and other products. I've been developing some new ideas and would like to try them out soon.
Claudia	Do you have any idea what the selling price and costs might be for these new items? Given our budget problems, we need to be sure that any new products generate cash flow at least as good as our current products. Rather than counting on sales increases, we should find ways to cut costs. I think we should consider reducing the quantity and/or quality of food items in the sandwiches. Based on my calculations, we could eliminate the negative cash flow with a relatively small decrease in ingredients in each sandwich. For example, we could set the cheese slicer to create slices a little thinner than we currently use. Or, we could consider buying slightly lower-quality ingredients.
Gabrielle	Wait a minute. This idea seems to contradict our entire purpose. We can't do that.
Nobu	I agree. We want to maintain our position as the highest-quality supplier. Otherwise, we will lose even more sales to competitors.
Claudia	Well, then, let's look for other ways to cut costs. After ingredients, our biggest cost is labor. I can investigate ways to reschedule our staff. Maybe we could ask the production people to start an hour earlier in the day, and then we could produce the same volume of sandwiches with one less person. We might also be able to cut back on discretionary expenses, such as our annual staff retreat, the Holiday party, and so on. Added together, these cuts might get rid of the cash flow problem.
Gabrielle	I'm not sure which idea is worse—reducing the quality of our sandwiches or getting rid of an employee. And the retreat and Holiday party are ways that we celebrate and plan as a team. We're a family here.
Claudia	Look—we need to do something. We can't just ignore the negative cash flow forecast. Maybe we should cut employee pay or reduce benefits.
Required: Gabrielle is your aunt, and she has hired you as an intern during the summer break in your undergraduate business degree program. You attended the management team meeting as an observer. After the meeting, she tells you that she can't understand why the company is having so many profit and cash flow problems now; in the past the company was growing and doing well. You tell Gabrielle that you have been learning in school how to analyze business problems and that you will write her a memo with your analysis of the issues and your advice.	

Exhibit 22 Critical Thinking Model

Critical Thinking Model

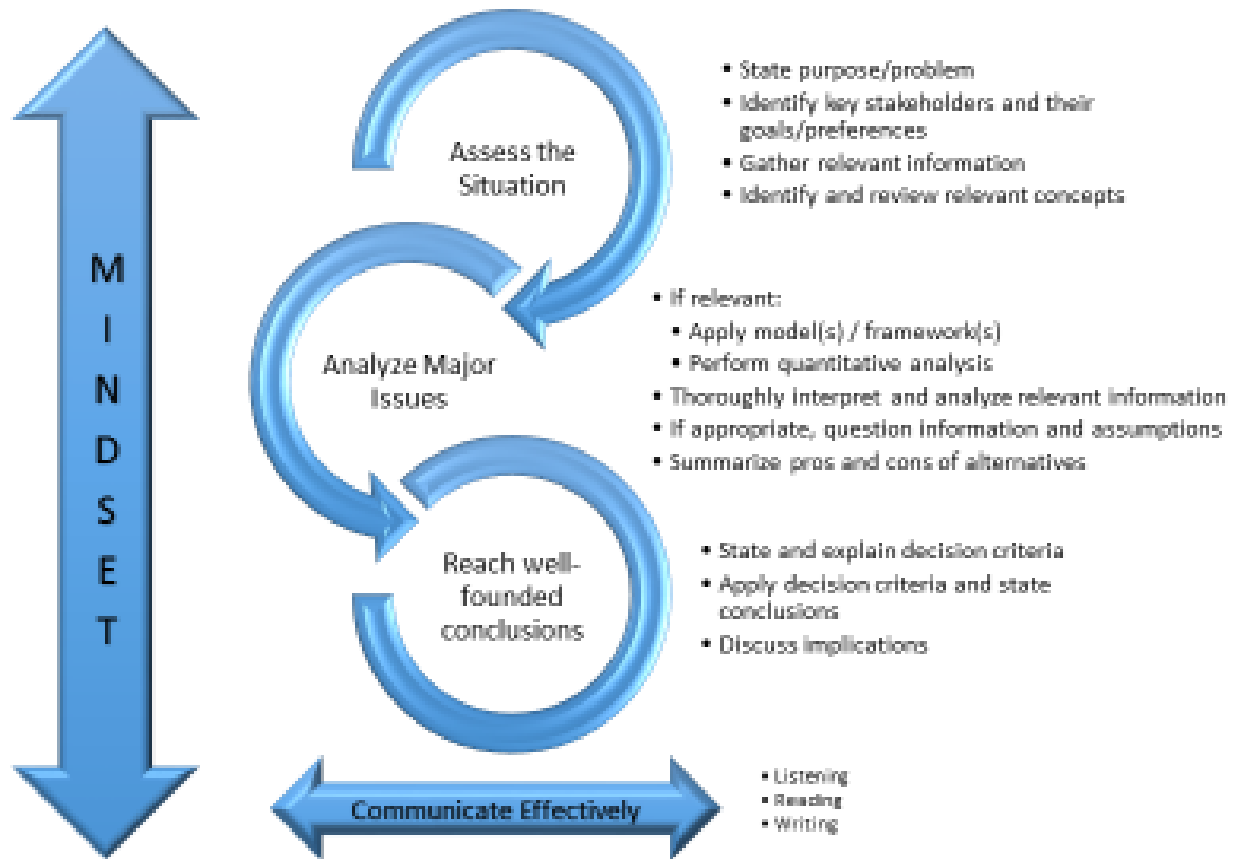


Exhibit 23 Grading Rubric: Kirkland Sandwich

1. Identify Purpose/ Problem/ Question (up to 4 points)
1.1 Explicitly identify profitability problem (1 point)
1.2 Identify need for one or more strategies to address profitability problem (e.g., increase profits, decrease costs, or both) (1 point)
1.3 Identify two or more additional relevant issues (e.g., apparent change in economic circumstances, especially increased competition; Gabrielle’s lack of interest in administration → possible lack of awareness of changing circumstances; possible conflict between vision/values and current economic circumstances; cash flow/financing difficulty) (2 points)
2. Clarify Concepts (up to 5 points)
2.1 Discuss relevant case information in relation to Porter’s five forces and demonstrate understanding of relevant factors for the situation: suppliers, buyers, new entrants, substitution, rivalry; use Porter’s model to gain a better understanding of the company’s situation, including factors that the company cannot control as well as opportunities for strategic direction (5 points)
3. Question Information (up to 2 points)
3.1 Identify two or more uncertainties , including conclusions about profitability problems and/or pieces of information that are uncertain (e.g., forecasted revenues and costs, success of marketing efforts, ability to develop & successfully launch new products, ability to obtain more financing) (2 points)
4. Gather/Interpret Relevant Information AND Explore Implications/ Consequences of Profitability Decline and Possible Strategies (up to 11 points)
4.1 Analyze evidence of profitability problems , link to possible inability to stay in business (e.g. because of negative cash flows), and recognize overall threat to company’s continued existence (2 points)
4.2 Analyze both pros and cons of possible strategies to increase revenues , identify one or more ways such as increase in prices or sales volumes (e.g., through new product offerings), and recognize possible reason(s) why revenues might not increase (3 points)
4.3 Analyze both pros and cons of proposed strategies to reduce costs (reduce quality; layoff employee & reduce other costs); relate to company vision & values (6 points)
5. Maintain Objectivity (up to 2 points)
5.1 Use tone and language that convey objectivity; avoid overstatements; avoid unfounded criticisms
6. Reach Well-Founded Conclusions (up to 6 points)
6.1 Identify and integrate criteria (e.g., vision, values, goal to pay off bank loan); identify at least one trade-off when making conclusions
6.2 Integrate Porter’s five forces analysis → continuing the existing strategy probably won’t work
6.3 Integrate uncertainty about analyses
6.4 Conclude on Claudia’s recommendations : increase revenues, reduce quality, and reduce employees & other costs
6.5 Offer additional recommendations/advice consistent with the case situation such as: focus on developing new products; expand into new geographic areas; conduct market research to identify the best opportunities; reduce threat of substitution by further differentiating products on high quality, health, taste, etc.

(30 points maximum)

Exhibit 24 Session #1 Assess the Situation: Kirkland Sandwich

Homework Assignment Instructions

Complete the attached worksheet to assess the situation for Kirkland Sandwich. **For this class session, you will focus ONLY on assessing the situation.** During later class sessions, you will perform more detailed analyses and reach conclusions.

Worksheet for Assessing the Situation: Kirkland Sandwich

1. Initial Impression

Based on reading the case only one time, consider your initial impression. Answer each of the following questions in a short paragraph . Explain what you mean so that someone other than you can understand your ideas and thoughts.	
Question	Your Response
a. What seems to be the company's main problem?	[Enter your answer here in a short paragraph.]
b. What is your role in the case?	[Enter your answer here in a short paragraph.]
c. Do you have any initial ideas about what the company should do?	[Enter your answer here in a short paragraph.]
d. How will you be as objective as possible while working on this case?	[Enter your answer here in a short paragraph.]

2. Identify the Problem

Above, you described your initial impression of the company's problem. Go back and re-read the case more carefully, and then answer the following questions using bullet points.	
Question	Your Response
a. What are some possible reasons for the company's main problem?	[Enter your answer here in five or more bullet points.]
b. What relevant issues other than the main problem should the owner and/or managers consider? (Hint: Think about whether some of the case information suggests the existence of problems other than the main problem.)	[Enter your answer here in one or two bullet points.]

(Continued)

(Exhibit 24 continued)

3. Identify Relevant Information

In addition to the information you listed above, identify other information that will be relevant as you work on this problem.	
Question	Your Response
a. Who are the major stakeholders in this problem?	[List your answers here in bullet points.]
b. What information is provided in the case about the company's values?	[Enter your answer here in one or more sentences.]
c. What information is provided in the case about Gabrielle's values?	[Enter your answer here in one or more sentences.]
d. Why might Porter's Five Forces be helpful when analyzing this case?	[Enter your answer here in a paragraph.]
e. According to the case, what alternatives have been proposed for the company's problem?	[List your answers here in bullet points.]
f. What additional information from the case (not already listed above) might be important when analyzing the case?	[Enter your answer here in five or more bullet points.]

4. Plan

Create a tentative outline for the memo that you will write in response to this case. Include only the headings and subheadings.
[Enter your outline here.]

Exhibit 25 Session #2 Apply Porter's Five Forces: Kirkland Sandwich

Homework Assignment Instructions

1. Apply Porter's Five Forces

Re-read the *Kirkland Sandwich* case. Assume that you are writing **a section** of a response to the case. Focusing only on information that is relevant to Kirkland Sandwich, apply Porter's Five Forces to the case. Include an introductory statement explaining the purpose of the analysis, and include a closing statement summarizing what was learned.

2. Relevant Arguments Regarding Use of Porter's Five Forces

Assume that your preceding analysis is part of your work on a team project (i.e., your team is developing a response to the Kirkland Sandwich case). One of your team members pointed out that a 2012 *Forbes* article criticized Porter's Five Forces model, and your team is now trying to decide whether the model is appropriate for use with the case.

To help resolve this issue, each team member has agreed to read the 2012 *Forbes* article and to locate another article discussing the usefulness of Porter's Five Forces. Using the two articles, each member will provide the other team members with a summary of the major relevant arguments.

The 2012 *Forbes* article "What Killed Michael Porter's Monitor Group? The One Force That Really Matters" is available at: [What Killed Michael Porter's Monitor Group? The One Force That Really Matters \(forbes.com\)](https://www.forbes.com/sites/steveforbes/2012/07/23/what-killed-michael-porter-s-monitor-group-the-one-force-that-really-matters/)

Assume that you have located the additional article titled "The End of Strategy?" available at: [The End of Strategy? Our Faculty Discusses \(northwestern.edu\)](https://www.northwestern.edu/faculty/strategy/)

In your own words, summarize the major arguments contained in the two articles. In your summary, include five important arguments for and five important arguments against using Porter's Five Forces when analyzing the Kirkland Sandwich case. Double-check the information in your summary to ensure that all of the information is **relevant** to your team's decision. (Hint: It will be helpful to begin by stating the purpose of your summary in relation to the Kirkland Sandwich case.) Be sure to include proper citations and references.

Exhibit 26 Session #3 Conclusions: Kirkland Sandwich

Homework Assignment Instructions

Re-read the *Kirkland Sandwich* case

1. Identify Issue(s) (up to ½ page, single-spaced)

In a paragraph, summarize what seem to be the biggest business issue(s) for Kirkland Sandwich. Refer, as appropriate, to key points from your assessment of the situation, your Porter's Five Forces analysis, and/or other information contained in the case.

Hint: Think of this paragraph as your conclusion from thoroughly assessing the situation.

2. Identify and Analyze Alternatives (approx. 1-2 pages)

In light of the issue(s) you identified in Part 1 above, identify the alternative courses of action that should be analyzed for the Kirkland Sandwich situation.

Hint: Alternatives should include ideas stated in the case plus one additional idea that is consistent with the case facts.

For each alternative:

- Briefly describe the alternative and relate it to one or more issues you identified in Part 1 above (approximately 1-2 sentences).
- Create a table with bullet points summarizing the pros and cons of the alternative (approximately 1 sentence per bullet point).

Hints:

- If you were writing a full response to the case, you would include more details about your analyses. However, in this assignment you are being asked only to **summarize** the results of your analyses (i.e., as pros and cons).
- Be sure to fully analyze each alternative (see the critical thinking model).
- Provide enough explanation so that the reader can understand your meaning, but write as concisely as possible.

3. Identify Two Major Uncertainties (2 short paragraphs)

Any time you thoroughly analyze business issues, you will notice many pieces of information and/or situational factors that are uncertain. Some of these uncertainties are **major**; they could have a significant impact on your conclusions and/or the likelihood of success.

Identify and briefly explain the possible effect(s) of TWO major uncertainties for the Kirkland Sandwich case (approximately 2-3 sentences each).

(Continued)

(Exhibit 26 continued)

4. Reach Conclusions and Discuss Implications (approx. ½ to 1 page)

Assume that you have completed all of your analyses and are now writing the *conclusions* portion of your response to the Kirkland Sandwich case. You should:

- Provide a recommendation for or against each alternative you discussed in Part 2 above.
- Explain the decision criteria you used to form each recommendation
- Provide reasons for any trade-offs made between competing decision criteria. In other words, explain how/why one criterion is more important than another criterion for Kirkland Sandwich in its current situation.
- Provide 1-2 implications and/or additional pieces of advice that are appropriate for the case situation.

4.6 Longer Case with Reading Comments

See the **Paukovich Consulting** case assignment in **Exhibit 27**. I used this case as a midterm exam in a Master of Accountancy management control course. Students in the course had been taught a critical thinking model and had previously practiced identifying issues for open-ended cases.

Although Paukovich Consulting is a hypothetical case, I based the storyline on my husband's experiences in a former job.

The grading rubric for the case is shown in **Exhibit 28**.

Reading Comments Given to Students

Exhibit 29 provides my own reading comments on the case. I gave this file to students after they had written the case. The purpose was to help students recognize issues that were embedded in the case information.

An alternative learning activity would be to provide students with some of the comments and to have them create reading comments for the rest of the case (individually or in small groups). This activity could be done before having students submit their responses and would be especially helpful for students with little or no experience writing cases.

Exhibit 27 Case Assignment: Paukovich Consulting

Introduction

Richard Paukovich, the owner and CEO of Paukovich Consulting, was late arriving at the company's weekly project status review meeting. Lately, he had dreaded these meetings because they nearly always became shouting matches between the sales representatives and the analysts. He was disappointed in the lack of trust between the two parts of his company, but was at a loss about how to get his employees to focus on their work instead of what he saw as silly political games.

This week's meeting was no exception. As he entered the conference room, Carol Barnett, a senior sales representative, was complaining that her most recent paycheck was short by over \$500 because consulting work on the Zero-One Stores job exceeded the time budget. Carol was the leading complainer among the sales representatives. She regularly pointed out that her monthly commission check was less than her estimated commission. Richard wanted to fire Carol, but she brought in a lot of consulting jobs.

Another sales representative, David Morton, chimed in. "Yes, Carol's right. The analysts always spend too much time on writing reports. And then projects are delivered late and the customers complain."

George Bilton, the analyst assigned to the Zero-One Stores job, retorted "It's not our fault. You sales representatives always promise more than we can deliver, and you never budget enough time for projects. If you created realistic job budgets, then we could meet them. And, besides, you don't do a good job of setting customer expectations."

Richard spoke up, reminding Carol that "the reason that you and the other sales representatives are paid from actual margins rather than forecast margins is to prevent you from expanding the scope of projects after they are sold and sneaking in extra work to the customers for free."

After the meeting, George grumbled privately to one of his consulting colleagues that "we would be able to complete jobs on time if we knew which jobs would be coming in and if Richard didn't always pull us off other jobs to work on his projects."

(Continued)

(Exhibit 27 continued)

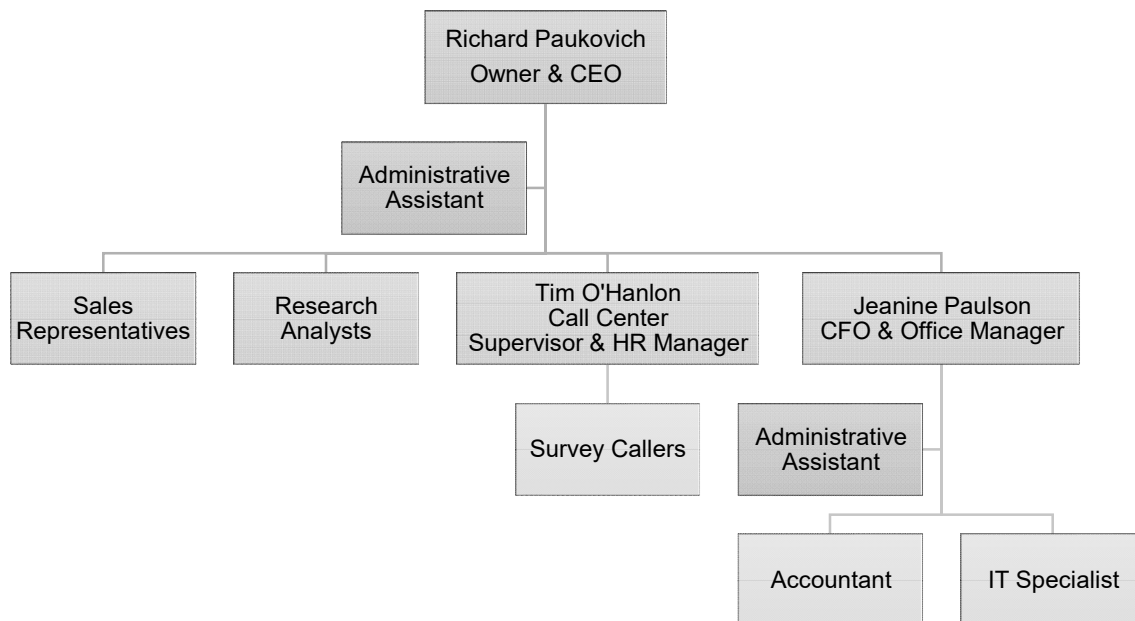
Paukovich Consulting

Richard Paukovich had formed Paukovich Consulting 10 years earlier. The company provided customer satisfaction survey consulting services. Richard had developed a wide network of client contacts, and he personally brought in approximately one-third of the company's revenues. The remaining revenues were brought in by sales representatives. The company's strategy is to compete based on the quality of its research analysis, and its mission statement is as follows:

We provide leading-edge marketing research and analysis to help our customers compete more effectively and improve progress toward their strategic goals.

The company's organization chart is shown in Exhibit 1.

Exhibit 1: Organization Chart



Employees and Compensation

The **owner and CEO** was responsible for overall administration, and he also sold research services, performed analysis on some jobs, and conducted a final review of all reports before delivery to clients. The owner was paid a flat salary and, as the sole stockholder, received an annual dividend based on excess cash flow.

The **chief financial officer (CFO)**, who also served as office manager, supervised the accounting and information technology functions and was responsible for all administration activities not handled directly by the owner or the call center supervisor. The CFO was paid a flat salary.

(Continued)

(Exhibit 27 continued)

The **call center supervisor** managed the call center, which gathered research data for individual jobs through telephone interviews. The supervisor scheduled and oversaw the callers, who made survey telephone calls. He also served as the company’s director of human resources. The supervisor was a paid a flat salary.

Sales representatives were responsible for writing client job proposals and for negotiating the selling price. They were paid strictly by commission based on a percent of the *actual* job profit, which was calculated as actual revenue collected, minus direct costs (consisting of analyst time, call center time, and miscellaneous other costs such as report photocopying).

Research analysts were responsible for designing research questionnaires, analyzing research data, and writing research reports. Sometimes they were also asked by sales representatives to assist in developing job proposals. Analyst time for working on proposals was categorized as “internal marketing” and was not charged to jobs. All analysts received a flat salary per year. Junior analysts had less work experience and usually worked under the supervision of a senior analyst. All analysts completed weekly time reports.

Survey callers worked as needed to conduct telephone surveys. All callers were paid a flat wage per hour and completed daily time reports, which were used to assign 100% of their time to individual jobs.

Other general and administrative employees (accountant, information technology specialist, and two administrative assistants) were paid flat salaries.

Financial results for the two most recent years are shown in Exhibit 2.

Exhibit 2: Prior Income Statements		
	<u>2015</u>	<u>2014</u>
Revenues	\$2,500,000	\$2,000,000
Expenses:		
President’s salary	150,000	150,000
Analyst salaries.....	290,000	270,000
Sales representative commissions.....	180,000	200,000
Other general and administrative salaries.....	135,000	130,000
Payroll taxes and employee benefits.....	252,000	231,000
Survey labor, printing, photocopying, and other direct job costs.....	900,000	700,000
Rent, heat, and lights	51,000	50,000
Miscellaneous office costs	<u>45,000</u>	<u>40,000</u>
Total expenses.....	<u>2,003,000</u>	<u>1,771,000</u>
Pretax income.....	497,000	229,000
Income tax expense @ 20%	<u>99,400</u>	<u>45,800</u>
Net income.....	<u>\$ 397,600</u>	<u>\$ 183,200</u>

(Continued)

(Exhibit 27 continued)

Job Costing System

The sales representatives were responsible for calculating the estimated cost and for setting the price for projects. The company's usual practice was to set the price at 320% of the *estimated* direct consulting labor cost plus 125% of the other direct costs (e.g., survey labor and photocopying). Most of the sales representatives adopted this pricing strategy unless they were trying to attract a new client by offering a first-time discount. The price was rarely altered later unless the customer requested a change in the nature or volume of the work to be performed (i.e., assume that prices are fixed once the client accepts the job).

Each project was assigned a job code and each task (survey design, data collection, report writing, proofreading, and copying and binding) was assigned a task code.

The standard analyst labor rate was equal to the average analysts' annual salaries divided by 2,080 hours per year (based on a standard work week of 40 hours times 52 weeks per year). This method resulted in a standard rate of \$25 per hour for senior analysts and \$20 per hour for junior analysts.

The sales commission was equal to 24% of actual job profit. After a project was complete, the actual labor hours were totaled and the actual direct analyst labor cost was calculated by multiplying actual hours times the labor rate. Other direct costs were also accumulated for the job. Then the sales representative's commission was calculated and paid.

Exhibit 3 illustrates the estimated cost, price, and commission for a new job.

Exhibit 3: Budget for New Job		
Estimated analyst cost:		
Senior analyst	10 hours @ \$25 per hour	\$ 250
Junior analyst	20 hours @ \$20 per hour	<u>400</u>
Total		<u>\$ 650</u>
Estimated other direct job costs:		
Survey labor	100 hours @ \$10 per hour	\$1,000
Photocopying of final report		<u>50</u>
Total		<u>\$1,050</u>
Estimated price:		
Analyst cost	\$650 x 320%	\$2,080
Other direct costs	\$1,050 x 125%	<u>1,313</u>
Total		<u>\$3,393</u>
Estimated sales commission	$(\$3,393 - \$650 - \$1,050) \times 24\%$	<u>\$ 406</u>

(Continued)

(Exhibit 27 continued)

CFO Concerns

Jeanine Paulson was the CFO and office manager. While interviewing for her position six months earlier, she had been excited about the personal and professional challenges at Paukovich. The owner of the company, Richard Paukovich, had been charismatic and energetic. He told her that he wanted to grow the company and leave a legacy for the future. He wanted Paukovich to be known as the best research firm in the region, to take on the toughest marketing research projects and provide clients with answers they could not get elsewhere. After working for four years in performance management at an international accounting firm, Jeanine had looked forward to the opportunity of working closely with the owner while developing and implementing management control systems to help the company achieve its goals.

During Jeanine's first two months at Paukovich, she had no time to work on the management control system. The company had recently replaced its accountant, and the accounting work was behind schedule. Her first priority was to ensure that the job costing, accounts receivable, and cash systems ran smoothly. Jeanine, the new accountant, and the IT specialist had fixed numerous small problems in the systems and developed new routines to simplify and reduce errors in the day-to-day processing, reporting, and billing. Although the new accountant was not as experienced as Jeanine would have liked, she believed that the accountant would soon be able to take full responsibility for the daily and monthly accounting activities.

Jeanine now turned more of her attention to the management control system. She met with Richard, who reiterated many of the things he had said during her job interview. She decided to gather more information by interviewing various people throughout the organization.

CFO Meeting with the HR Manager

Jeanine next met with Tim O'Hanlon, the call center supervisor and human resources manager. She had originally met Tim when applying for her job. They had a friendly relationship and often chatted about their families in the coffee room.

Tim told Jeanine that he had been with the company for five years and that the call center ran smoothly. Because the call center workers were paid on an hourly basis and were scheduled to work only when needed, their time was billed 100% to jobs. When Jeanine asked him about the calling center's role in the company's mission, Tim seemed a bit puzzled. He told her, "We do our job and make money for Richard, so he's happy." When asked about the call center's relationship with the sales representatives and analysts, Tim said that he didn't interact with them very much on jobs, "They give me the survey and the calling parameters, and I make sure the calls are made and recorded accurately."

(Continued)

(Exhibit 27 continued)

When Jeanine asked about his role as human resources manager, Tim seemed to be less pleased. He told her, “I have to spend way too much time looking for new sales representatives and analysts. Most of them are fired or quit within six months.” When asked what he saw as the problem, Tim shrugged and said, “Richard says that most of them are too lazy or stupid to do the job right. Better pay might make it easier to get the best people, but Richard is adamant that we keep the current pay levels. With the weak economy, I’m always able to find more people. And sometimes Richard tells me to delay replacing analysts when consulting work is slow, so maybe the company can’t afford to pay more. In your position, you know a lot more about the finances than I do.”

CFO Meetings with Sales Representatives and Analysts

Over the next two weeks, Jeanine met with several of the sales representatives and analysts, gaining the following information:

- No one complained about the call center activities, so she decided to place low priority on further study of that part of the business.
- The less-experienced sales representatives seemed to be very frustrated. They told Jeanine that they spent a lot of time pursuing new clients and found it difficult to sign up new clients without setting very low prices on an initial job. They complained that only the less-experienced analysts worked on their jobs and that Richard often pulled the more experienced analysts off of their jobs to complete his jobs. As a result, the sales representatives felt that the reports to their clients were disproportionately late and of lower quality. Sales representatives who were unable to bring in profitable jobs within a few months were fired.
- The more-experienced sales representatives tended to develop working relationships with specific analysts, with whom they worked regularly. These sales representatives told Jeanine that they were able to get the quality and quantity of analyst work they needed, and they often developed client proposals jointly with an analyst. Most of them seemed to be satisfied with the quality of work on their jobs and their commission-based pay.
- Most of the analysts had little or no information about their future job schedules. Richard told the analysts that they were personally responsible for making sure they had work to do by “selling” their services internally—i.e., to him and to the sales representatives. Analysts who were unable to keep busy were fired.
- The junior analysts had little or no work experience, and the quality of their training and supervision seemed to vary. Some of the junior analysts worked under the tutelage of a senior analyst and shared in the senior analyst’s assignments. Others had trouble getting any work, and the sales representatives seemed to have little patience with these analysts’ lack of experience. One day Jeanine heard Richard

(Continued)

(Exhibit 27 continued)

screaming at a junior analyst in the hallway near several peoples' offices, telling the analyst that he must be one of the stupidest people to have ever graduated with a university degree.

- Jeanine had noticed that a large proportion of the analysts' time was coded to "internal marketing," which was classified in the accounting system as part of office overhead. The analysts told her that they used "internal marketing" for time during a workday that was not charged to a job, such as time spent on job proposals, project status meetings, training, and idle time. Although none of the analysts said so explicitly, Jeanine got the impression that the sales representatives encouraged analysts to inappropriately charge time to "internal marketing" when analyst work on a job exceeded the time budget. Exhibit 4 provides a breakdown of analyst time for the most recent year.

Exhibit 4: Average Analyst Time During 2015

	<u>Senior</u>	<u>Junior</u>
Time charged to jobs	1,500	1,000
Time charged to "internal marketing"	410	960
Holidays and sick leave	110	100
Vacation	<u>60</u>	<u>20</u>
Total hours	<u>2,080</u>	<u>2,080</u>

(52 weeks x 40 hours per week = 2,080 hours)

- The company seemed to have two general types of customers. The first type consisted of repeat clients who work received services from the same sales representative and same analyst over time. These clients tended to be profitable for Paukovich. The second type consisted of new clients, who tended to use the firm for only one or two consulting jobs. These clients usually worked with less experienced sales representatives and analysts. Because of high staff turnover, new clients who returned for additional services were likely to work with a new sales representative and/or analyst, and they often expressed dissatisfaction.

Required

Assume that you are Jeanine Paulson. Your goal is to write a memo to Richard with your analysis of the company's management control system, plus recommendations for improvement.

Exhibit 28 Grading Rubric: Paukovich Consulting

1. Identify Purpose/ Problem (up to 2 points)	
1.1 In opening paragraph, clearly state purpose of memo including review to recommend improvements to the management control system for the purpose of helping Paukovich and its owner reach its strategic goals (i.e., high research quality, leading-edge research, value to clients, growth, reputation as best in the region, take on tough research projects). (2 points)	
2. Address Key Stakeholders and Their Goals/Priorities (up to 3 points)	
2.1 Address the needs of the CEO and owner (Richard Paukovich) (1 point)	
2.2 Address the needs of the consultants/analysts and sales reps OR Paukovich employees generally. (Might be anywhere in the memo.) (1 point)	
2.3 Address the needs of Paukovich customers. (Might be anywhere in the memo.) (1 point)	
3. Clarify Concepts (up to 8 points)	
3.1 Explicitly link the analysis to the company’s strategic objectives (e.g., the mission statement and comments made by Richard Paukovich). (1 point)	
3.2 Demonstrate knowledge of the levers of control model by including each lever correctly in at least one strength or weakness of the current system (but the memo does not necessarily need to name the model): <ul style="list-style-type: none"> • <u>Beliefs system</u> such as: Has a mission statement, but employees do not seem to follow the strategic goals; CEO seems to dismiss conflicts and/or needs of employees; sales reps and analysts argue over time charged to jobs; there seems to be no shared culture. (1 point) • <u>Boundary system</u> such as: No evidence of a code of ethics; Analysts charge time to “internal marketing” but it’s not clear whether that is appropriate (1 point) • <u>Diagnostic system</u> such as: Focus on inputs (time spent) rather than process or outputs; little or no focus on quality or leading-edge research (1 point) • <u>Interactive system</u> such as: Staff meetings seem to involve accusations rather than brainstorming or other activities that could improve organizational learning client service (1 point) 	
3.3 Demonstrate knowledge of the <u>span of control</u> by including it correctly in at least one strength or weakness of the current system (might or might not use the name). (1 point)	
3.4 Demonstrate knowledge of the <u>span of accountability</u> by including it correctly in at least one strength or weakness of the current system (might or might not use the name). (1 point)	
3.5 Demonstrate knowledge of <u>criteria</u> for evaluating a <u>performance measure</u> by including a criterion correctly in at least one strength or weakness of the current system. (1 point)	

(Continued)

(Exhibit 28 continued)

<p style="text-align: center;">4. Gather/Interpret Relevant Information AND Explore STRENGTHS of Current Management Control System (up to 4 points)</p>	
<p>4.1 Identify at least 4 strengths of the current management control system. (4 points)</p> <ul style="list-style-type: none">• The quality of research analysis is a strategic objective, which is consistent with the mission statement: “We provide leading-edge marketing research and analysis to help our customers compete more effectively and improve progress toward their strategic goals.”• Richard reviews all jobs, so he can personally ensure job quality—a major strategic objective.• Because the CEO is also the owner, he automatically has incentives aligned with the overall economic value; he also receives an annual dividend based on “excess cash flow.” He has a wide span of control and also a wide span of accountability (consistent).• The sales reps are treated as profit centers, which is appropriate given their responsibility for negotiating prices and job specifications with clients. Basing the sales commission on actual (instead of budgeted) job margins gives sales reps an incentive to accurately estimate job costs, and it also matches the span of accountability with the span of control. For example, their compensation is not affected by arbitrary allocations of overhead.• The survey callers have a narrow span of control and span of accountability, which is consistent with their work (i.e., they probably are told to simply follow a script).• Other general and administrative employees probably also have narrow spans of control, and they have narrow spans of accountability.• In general, the company seems to have a system in place for tracing direct costs to jobs (except for a couple of items listed under weaknesses).	
<p style="text-align: center;">5. Gather/Interpret Relevant Information AND Explore WEAKNESSES of Current Management Control System (up to 8 points)</p>	
<p>5.1 Identify at least 8 weaknesses of the current management control system. (8 points)</p> <ul style="list-style-type: none">• Sales reps might not be adequately informed about the time that analysts are using on each job and about reasons why actual time exceeds the budget. Are analysts spending too much time, are the sales reps unaware of the time needed, or something else?• The consultants find it difficult to plan their time, and Richard apparently pulls consultants off of other jobs to work on his own jobs. Both of these issues would tend to reduce efficiency.• A large proportion of Payroll Taxes and Employee Benefits is likely attributable to survey callers and analysts, and should probably be traced to jobs for more accurate job profit calculations.• We don’t know how wide the CFO’s span of control is, but it might be fairly narrow (e.g., cost center). The CFO might be capable of greater responsibility. The CFO has a narrow span of accountability (salary only), which might be too narrow given the CFO’s potential ability to contribute to the overall organization.• The Call Center Supervisor & HR Director has a narrow span of accountability, which might be appropriate if the expectation is to only complete work as required (i.e., if his span of control is narrow, such as a cost center). However, the HR director responsibility can have significant strategic implications through hiring and training processes.	

(continued)

(Exhibit 28 continued)

<ul style="list-style-type: none"> • The analysts might have a fairly narrow span of control (i.e., just do the work required). However, this seems inconsistent with a strategy that focuses on research quality and with analyst help on proposals. Their current pay indicates a narrow span of accountability. • There could be a cost misclassification problem with the analyst time spent on jobs. Because analyst resources are used, shouldn't the job profit be reduced, or the accountability shared between sales reps and analysts? • It is unclear whether/how the quality of research is related to the quality of survey callers. Are some callers better than others, leading to higher-quality research reports? Although survey calling is probably not "cutting edge," this seems to be a fairly significant part of the work performed (based on the income statements). How might higher survey quality be encouraged? OR, should jobs involving calls be discouraged, to move to more cutting-edge research (e.g., using analytics using data other than calls)? • The company's typical use of cost-based pricing is inconsistent with strategic objectives that focus on quality of analysis and adding value to clients. Perhaps the company should establish methods for determining how different types of jobs add value to the clients. • The high turnover of sales reps might inhibit the ability of the company to pursue higher-volume and/or higher-quality jobs. Also, some of the less-experienced sales reps are frustrated by a lack of support (including access to high-quality analysts). Should procedures other than the sale commission system be used to train and provide better resources to new sales reps? • The high turnover of analysts is likely to reduce the quality of research and might impair the strategic objectives. Also, the analysts are told to "sell" their services to Richard and to the sales reps. Should procedures be instituted to provide better support and training of analysts? • Analyst time might not be accurately recorded (high proportion of time recorded to "internal marketing"). Does anyone monitor analyst time reports? What is the proper code for idle time, training, etc.? Should time spent on job proposals be traced to jobs? • Analyst time for holidays, sick leave, and vacation is apparently treated as an overhead cost. Should this time be built into the cost rate for analysts for more accurate tracing of analyst cost? • New clients might be dissatisfied with the quality of work and/or their working relationships with Paukovich personnel—a direct violation of strategic objectives. How might the company ensure that client services and relationships are uniformly high? 	
<p>6. Question Information and/or Address Lack of Information (up to 2 points)</p>	
<p>6.1 Identify and briefly explain at least one issue related to questionable and/or missing information (see my various "reading" comments in the case document) (2 points)</p>	
<p>7. Use Reasonable Assumptions (0 or subtract points)</p>	
<p>7.1 If any assumptions are used beyond those stated in the assignment, the assumption needs to be explicitly stated AND be appropriate. A point will be subtracted for each unnecessary and/or inappropriate assumption.</p>	

(continued)

(Exhibit 28 continued)

8. Use Decision Criteria to Reach Well-Founded Conclusions (up to 6 points)	
8.1 Provide reasonable explanation for how/why some weaknesses are sufficiently important to address in the near future. (2 points)	
89.2 Provide at least 4 reasonable recommendations based on the weaknesses. (4 points)	
9. Address Implications and/or Offer Additional Advice (up to 1 point)	
9.1 Identify at least one relevant implication or piece of advice such as: <ul style="list-style-type: none"> • Recommend starting with a few most significant improvements, and gradually improve the entire system over time. • Potential increase in cost to provide better training/support for sales reps and/or analysts; however, this additional cost can potentially be offset through increased profits and better client satisfaction • By reducing conflicts between sales reps and analysts, the company can provide more consistently high client service 	
10. Demonstrate Mindset (up to 1 point)	
10.1 Use tone and language that convey objectivity; avoid making overstatements; avoid unfounded criticisms; convey skepticism respectfully. Note: In the case, it is difficult to criticize Richard’s attitude and behavior in a professionally-appropriate way! (up to 1 point)	
11. Professional Communication (up to 3 points)	
11.1 Writing is clear and easy to understand; avoids unnecessary wordiness. (up to 1 point)	
11.2 Organization enhances reader’s understanding (e.g., memo format, headings, bullet points, exhibits) (up to 1 point)	
11.3 Writing is oriented to the audience (i.e., Richard), including explanation of concepts that the audience might not know (up to 1 point)	
TOTAL (38 points maximum)	

Additional Comments and/or Suggestions for Improvements:

Exhibit 29 Case Reading Comments: Paukovich Consulting

Introduction

Richard Paukovich, the owner and CEO of Paukovich Consulting, was late arriving at the company's weekly project status review meeting. Lately, he had dreaded these meetings because they nearly always became shouting matches between the sales representatives and the consultants. He was disappointed in the lack of trust between the two parts of his company, but was at a loss about how to get his employees to focus on their work instead of what he saw as silly political games.

This week's meeting was no exception. As he entered the conference room, Carol Barnett, a senior sales representative, was complaining that her most recent paycheck was short by over \$500 because consulting work on the Zero-One Stores job exceeded the time budget. Carol was the leading complainer among the sales representatives. She regularly pointed out that her monthly commission check was less than her estimated commission. Richard wanted to fire Carol, but she brought in a lot of consulting jobs.

Another sales representative, David Morton, chimed in. "Yes, Carol's right. The consultants always spend too much time on writing reports. And then projects are delivered late and the customers complain."

George Bilton, the consultant assigned to the Zero-One Stores job, retorted "It's not our fault. You sales representatives always promise more than we can deliver and you never budget enough time for projects. If you created realistic job budgets, then we could meet them. And, besides, you don't do a good job of setting customer expectations."

Richard spoke up, reminding Carol that "the reason that you and the other sales representatives are paid from actual margins rather than forecast margins is to prevent you from expanding the scope of projects after they are sold and sneaking in extra work to the customers for free."

After the meeting, George grumbled privately to one of his consulting colleagues that "we would be able to complete jobs on time if we knew which jobs would be coming in and if Richard didn't always pull us off other jobs to work on his projects."

Paukovich Consulting

Richard Paukovich had formed Paukovich Consulting 10 years earlier. The company provided customer satisfaction survey consulting services. Richard had developed a wide network of client contacts, and he personally brought in approximately one-third of the company's revenues. The remaining revenues were brought in by sales representatives. The company's strategy is to compete based on the quality of its research analysis, and its mission statement is as follows:

We provide leading-edge marketing research and analysis to help our customers compete more effectively and improve progress toward their strategic goals.

The company's organization chart is shown in Exhibit 1. Financial results for the two most recent years are shown in Exhibit 2.

Commented [SKW1]: Unhealthy conflict seems to exist between the sales representatives and consultants. This is probably related to one or more deficiencies in the MCS. The next sentence refers to a "lack of trust"—another way to describe the conflicts.

Commented [SKW2]: Richard (the CEO/owner) doesn't seem to understand why the conflicts exist, and he seems to dismiss them.

Commented [SKW3]: We don't yet know whether Carol's complaint is universal, but she is concerned about costs exceeding the job budgets—causing her to lose sales commission income. (We will learn later that sales commissions are based on actual job profit). Again, Richard seems dismissive of the problem, but he also seems negatively-disposed towards Carol and perhaps toward other employees.

Commented [SKW4]: Another sales rep seems to agree with Carol. They believe that the consultants/analysts spend too much time on jobs, causing not only a loss of sales commission but also dissatisfied customers.

Commented [SKW5]: One of the consultants believes that the problem is with the job budgets and expectations that are set by the sales reps with the customers.

Commented [SKW6]: Richard explains why sales commissions are based on actual rather than estimated margins. This system gives sales reps an incentive to be accurate in the job estimates. But, again, Richard comes across as dismissive.

Commented [SKW7]: George (a consultant) points out additional problems with the current system: the consultants find it difficult to plan their time, and Richard apparently pulls consultants off of other jobs to work on his own jobs. Both of these problems would tend to reduce efficiency.

Commented [SKW8]: Richard generates 1/3 of revenues, so he can survive without the sales reps.

Commented [SKW9]: We don't know whether this strategic objective is valid, but problems with consultant efficiency would probably interfere with quality.

(continued)

(Exhibit 29 continued)

Exhibit 1: Organization Chart

Commented [SKW10]: The organization is highly centralized, but that is pretty typical for a small owner-managed company.

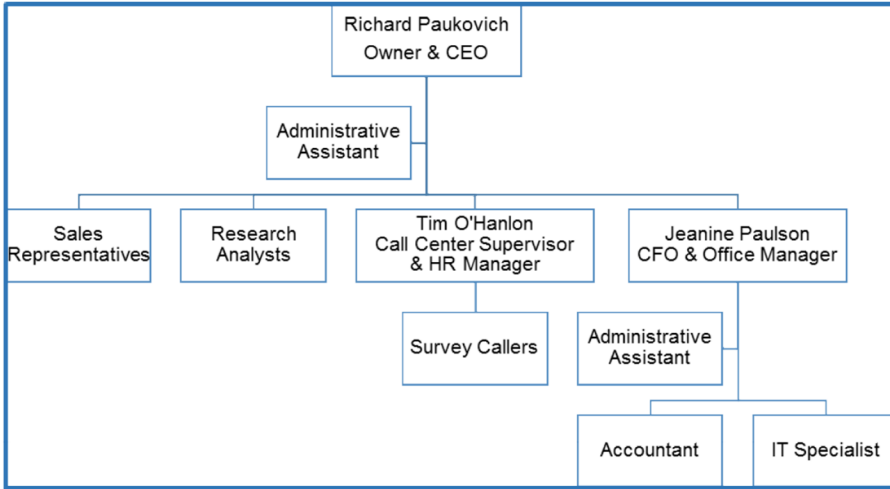


Exhibit 2: Prior Income Statements

	2015	2014
Revenues.....	\$2,500,000	\$2,000,000
Expenses:		
President's salary.....	150,000	150,000
Consultant salaries.....	290,000	270,000
Sales representative commissions	180,000	200,000
Other general and administrative salaries.....	135,000	130,000
Payroll taxes and employee benefits	252,000	231,000
Survey labor, printing, photocopying, and other direct job costs	900,000	700,000
Rent, heat, and lights	51,000	50,000
Miscellaneous office costs.....	45,000	40,000
Total expenses	<u>2,003,000</u>	<u>1,771,000</u>
Pretax income	497,000	229,000
Income tax expense @ 20%.....	99,400	45,800
Net income	<u>\$ 397,600</u>	<u>\$ 183,200</u>

Commented [SKW11]: A large proportion of this cost is likely attributable to survey callers and analysts, and should probably be traced to jobs. (Same for the proportion related to sales reps, but it is unclear how tracing that cost would contribute to better strategic management.)

Commented [SKW12]: Almost half of the costs are variable based on job requirements.

Commented [SKW13]: The company earned considerably more this year than last year. We don't have any information about why. Richard seems to be making a sizeable income between his salary and owner interest.

(continued)

(Exhibit 29 continued)

The **owner and CEO** was responsible for overall administration, and he also sold research services, performed analysis on some jobs, and conducted a final review of all reports before delivery to clients. The owner was paid a flat salary and, as the sole stockholder, received an annual dividend based on excess cash flow.

Commented [SKW14]: Richard maintains at least some quality control over all jobs.

The **chief financial officer (CFO)**, who also served as office manager, supervised the accounting and information technology functions and was responsible for all administration activities not handled directly by the owner or the call center supervisor. The CFO was paid a flat salary.

Commented [SKW15]: Because the CEO is also the owner, he automatically has incentives aligned with the overall economic value. Wide span of control and wide span of accountability.

The **call center supervisor** managed the call center, which gathered research data for individual jobs through telephone interviews. The supervisor scheduled and oversaw the callers, who made survey telephone calls. He also served as the company's director of human resources. The supervisor was paid a flat salary.

Commented [SKW16]: Narrow span of accountability; might be too narrow given the CFO's potential ability to contribute to the overall organization.

Sales representatives were responsible for writing client job proposals and for negotiating the selling price. They were paid strictly by commission based on a percent of the *actual* job profit, which was calculated as actual revenue collected, minus direct costs (consisting of analyst time, call center time, and miscellaneous other costs such as report photocopying).

Commented [SKW17]: Narrow span of accountability, which might be appropriate if the expectation is to only complete work as required. However, the call center manager is also HR director, and in that role can have a large impact on the organization.

Research analysts were responsible for designing research questionnaires, analyzing research data, and writing research reports. Sometimes they were also asked by sales representatives to assist in developing job proposals. Analyst time for working on proposals was categorized as "internal marketing" and was not charged to jobs. All analysts received a flat salary per year. Junior analysts had less work experience and usually worked under the supervision of a senior analyst. All analysts completed weekly time reports.

Commented [SKW18]: Span of control & span of accountability seem to be matched; profit centers.

Survey callers worked as needed to conduct telephone surveys. All callers were paid a flat wage per hour and completed daily time reports, which were used to assign 100% of their time to individual jobs.

Commented [SKW19]: The analysts might have a fairly narrow span of control (i.e., just do the work required). However, this seems inconsistent with a strategy that focuses on research quality and with analyst help on proposals.

There could be a cost misclassification problem with the analyst time spent on jobs; should be coded to the jobs, commission shared, or something.

Other general and administrative employees (accountant, information technology specialist, and two administrative assistants) were paid flat salaries.

Commented [SKW20]: Survey callers have a narrow span of control and accountability; seems reasonable

Job Costing System

The sales representatives were responsible for calculating the estimated cost and for setting the price for projects.¹ The company's usual practice was to set the price at 320% of the *estimated* direct consulting labor cost plus 125% of the other direct costs (e.g., survey labor and photocopying). Most of the sales representatives adopted this pricing strategy unless they were trying to attract a new client by offering a first-time discount.

Commented [SKW21]: It appears that the sales reps have at least some flexibility in setting prices (i.e., wider span of control)

Each project was assigned a job code and each task (survey design, data collection, report writing, proofreading, and copying and binding) was assigned a task code.

Commented [SKW22]: The company seems to have a reasonable system for assigning direct costs to jobs (except for the analyst time on job proposals).

The standard consultant labor rate was equal to the average consultants' annual salaries divided by 2,080 hours per year (based on a standard work week of 40 hours times 52 weeks per year). This method resulted in a standard rate of \$25 per hour for senior consultants and \$20 per hour for junior consultants.

Commented [SKW23]: See later comment re: data in Exhibit 4

The sales commission was equal to 24% of actual job profit. After a project was complete, the actual labor hours were totaled and the actual direct consultant labor cost was calculated by multiplying actual

¹¹ Assume that all prices were fixed. This means that the actual price was equal to the negotiated price at the beginning of a project. The price was rarely altered, unless the customer requested a change in the nature or volume of the work to be performed.

(continued)

(Exhibit 29 continued)

hours times the labor rate. Other direct costs were also accumulated for the job. Then the sales representative's commission was calculated and paid.

Exhibit 3 illustrates the estimated cost, price, and commission for a new job.

Exhibit 3: Budget for New Job		
One of the sales representatives developed the following budget for a new consulting engagement.		
Estimated consultant cost:		
Senior consultant	10 hours @ \$25 per hour	\$ 250
Junior consultant	20 hours @ \$20 per hour	400
Total		<u>\$ 650</u>
Estimated other direct job costs:		
Survey labor	100 hours @ \$10 per hour	\$1,000
Photocopying of final report		50
Total		<u>\$1,050</u>
Estimated price:		
Consultant cost	\$650 x 320%	\$2,080
Other direct costs	\$1,050 x 125%	1,313
Total		<u>\$3,393</u>
Estimated sales commission	$(\$3,393 - \$650 - \$1,050) \times 24\%$	<u>\$ 406</u>

Commented [SKW24]: The pricing of analyst time at a higher value than other direct costs is consistent with the strategic objectives of the company. However, the use of cost-based pricing is inconsistent.

CFO Concerns

Jeanine Paulson was the CFO and office manager. While interviewing for her position six months earlier, she had been excited about the personal and professional challenges at Paukovich. The owner of the company, Richard Paukovich, had been charismatic and energetic. He told her that he wanted to grow the company and leave a legacy for the future. He wanted Paukovich to be known as the best research firm in the region, to take on the toughest marketing research projects and provide clients with answers they could not get elsewhere. After working for four years in performance management at an international accounting firm, Jeanine had looked forward to the opportunity of working closely with the owner while developing and implementing management control systems to help the company achieve its goals.

Commented [SKW25]: More of Richard's objectives

During Jeanine's first two months at Paukovich, she had no time to work on the management control system. The company had recently replaced its accountant, and the accounting work was behind schedule. Her first priority was to ensure that the job costing, accounts receivable, and cash systems ran smoothly. Jeanine, the new accountant, and the IT specialist had fixed numerous small problems in the systems and developed new routines to simplify and reduce errors in the day-to-day processing, reporting, and billing. Although the new accountant was not as experienced as Jeanine would have liked, she believed that the accountant would soon be able to take full responsibility for the daily and monthly accounting activities.

Commented [SKW26]: The company has high turnover among analysts and sales reps (see the next page); is that also true for other staff? If so, then the turnover might be causing major problems.

(continued)

(Exhibit 29 continued)

Jeanine now turned more of her attention to the management control system. She met with Richard, who reiterated many of the things he had said during her job interview. She decided to gather more information by interviewing various people throughout the organization.

CFO Meeting with the HR Manager

Jeanine next met with Tim O’Hanlon, the call center supervisor and human resources manager. She had originally met Tim when applying for her job. They had a friendly relationship and often chatted about their families in the coffee room.

Tim told Jeanine that he had been with the company for five years and that the call center ran smoothly. Because the call center workers were paid on an hourly basis and were scheduled to work only when needed, their time was billed 100% to jobs. When Jeanine asked him about the calling center’s role in the company’s mission, Tim seemed a bit puzzled. He told her, “We do our job and make money for Richard, so he’s happy.” When asked about the call center’s relationship with the sales representatives and analysts, Tim said that he didn’t interact with them very much on jobs, “They give me the survey and the calling parameters, and I make sure the calls are made and recorded accurately.”

When Jeanine asked about his role as human resources manager, Tim seemed to be less pleased. He told her, “I have to spend way too much timing looking for new sales representatives and analysts. Most them are fired or quit within six months.” When asked what he saw as the problem, Tim shrugged and said, “Richard says that most of them are too lazy or stupid to do the job right. Better pay might make it easier to get the best people, but Richard is adamant that we keep the current pay levels. With the weak economy, I’m always able to find more people. And sometimes Richard tells me to delay replacing analysts when consulting work is slow, so maybe the company can’t afford to pay more. In your position, you know a lot more about the finances than I do.”

CFO Meetings with Sales Representatives and Analysts

Over the next two weeks, Jeanine met with several of the sales representatives and analysts, gaining the following information:

- No one complained about the call center activities, so she decided to place low priority on further study of that part of the business.
- The less-experienced sales representatives seemed to be very frustrated. They told Jeanine that they spent a lot of time pursuing new clients and found it difficult to sign up new clients without setting very low prices on an initial job. They complained that only the less-experienced analysts worked on their jobs and that Richard often pulled the more experienced analysts off of their jobs to complete his jobs. As a result, the sales representatives felt that the reports to their clients were disproportionately late and of lower quality. Sales representatives who were unable to bring in profitable jobs within a few months were fired.
- The more-experienced sales representatives tended to develop working relationships with specific analysts, with whom they worked regularly. These sales representatives told Jeanine that they were able to get the quality and quantity of analyst work they needed, and they often developed client proposals jointly with an analyst. Most of them seemed to be satisfied with the quality of work on their jobs and their commission-based pay.
- Most of the analysts had little or no information about their future job schedules. Richard told the analysts that they were personally responsible for making sure they had work to do by “selling”

Commented [SKW27]: This suggests a lack of strategic consideration by the Call Center Manager and HR Director. But it’s consistent with a narrow span of control and narrow span of accountability.

Commented [SKW28]: It is not clear whether the high turnover of sales reps is a problem. However, high turnover of analysts is likely to reduce the quality of research and inhibit development of “cutting edge” projects.

Commented [SKW29]: This judgment call seems reasonable

Commented [SKW30]: These sales reps might need training and/or guidance. Also, they might have access to inferior resources, leading to inferior client service.

Commented [SKW31]: There seems to be a mismatch between the span of control (i.e., sell your services) and the span of accountability (“keeping busy”). If the analysts are expected to do more selling—perhaps internally and externally—then they should have incentives (e.g., profit center treatment).

(continued)

(Exhibit 29 continued)

their services internally—i.e., to him and to the sales representatives. Analysts who were unable to keep busy were fired.

- The junior analysts had little or no work experience, and the quality of their training and supervision seemed to vary. Some of the junior analysts worked under the tutelage of a senior analyst and shared in the senior analyst’s assignments. Others had trouble getting any work, and the sales representatives seemed to have little patience with these analysts’ lack of experience. One day Jeanine heard Richard screaming at a junior analyst in the hallway near several peoples’ offices, telling the analyst that he must be one of the stupidest people to have ever graduated with a university degree.
- Jeanine had noticed that a large proportion of the analysts’ time was coded to “internal marketing,” which was classified in the accounting system as part of office overhead. The analysts told her that they used “internal marketing” for time during a workday that was not charged to a job, such as time spent on job proposals, project status meetings, training, and idle time. Although none of the analysts said so explicitly, Jeanine got the impression that the sales representatives encouraged analysts to inappropriately charge time to “internal marketing” when analyst work on a job exceeded the time budget.
- The company seemed to have two general types of customers. The first type consisted of repeat clients who work received services from the same sales representative and same analyst over time. These clients tended to be profitable for Paukovich. The second type consisted of new clients, who tended to use the firm for only one or two consulting jobs. These clients usually worked with less experienced sales representatives and analysts. Because of high staff turnover, new clients who returned for additional services were likely to work with a new sales representative and/or analyst, and they often expressed dissatisfaction.

Commented [SKW32]: The company might need consistent training OR more stringent hiring requirements.

Commented [SKW33]: More evidence that Richard denies the struggles of employees.

Commented [SKW34]: Analyst time might not be accurately recorded. Does anyone monitor analyst time reports?

Commented [SKW35]: The company might not be meeting the needs of new clients.

Exhibit 4: Average Consultant Time During 2015

	Senior	Junior
Time charged to jobs	1,500	1,000
Time charged to “internal marketing”	410	960
Holidays and sick leave	110	100
Vacation	60	20
Total hours	<u>2,080</u>	<u>2,080</u>

(52 weeks x 40 hours per week = 2,080 hours)

Commented [SKW36]: Should this time be traced to jobs? Also, where is idle time? Are the analysts ever idle?

Commented [SKW37]: Should this time be built into the cost rate for analyst work?

Required

Assume that you are Jeanine Paulson. Your goal is to write a memo to Richard with your analysis of the company’s management control system, plus recommendations for improvement.

Commented [SKW38]: This means that the memo should describe the strengths and weaknesses of the current system, and provide recommendations addressing the weaknesses.

4.7 Case with Structured Sequence of Questions

See the **Janet Baker** case assignment in **Exhibit 30**. This short case is from the first edition of my co-authored cost accounting textbook. The case was specifically designed for Chapter 1. At this point in the course, students would rely primarily on what they learned during introductory management accounting—supported by models and discussions of business risk, etc. in the textbook Chapter 1. The case decision scenario does not rely on student business experience; it involves a common housing decision to be made by students who attend university.

In this short case, students are given a series of questions to consider that are sequenced from less complex to more complex (coded: e, 1, 2, 3, and 4). The purpose is to help students fully consider key factors before writing their response to the case. This design provides support for students at all cognitive levels. By listing the less complex tasks first, students at lower cognitive levels are more likely to stay engaged as long as possible. After considering individual questions A through G, students are instructed in question H to write their overall response—not their answers to all of the individual questions. This design provides support for deeper student learning, while at the same time keeping the length of student responses relatively short.

Exhibit 31 provides a potential grading rubric for the Janet Baker case. (However, I used a generic critical thinking rubric for the assessments in **Exhibit 33**.)

Potential Alternative Case Questions

Exhibit 32 provides two types of modifications to the Janet Baker case: (1) revisions made in the 2nd edition of my cost accounting textbook, and (2) modifications for use in a lower-level course.

The long list of questions in **Exhibit 30** might be overwhelming for many students in a lower-level course, such as undergraduate introductory management accounting. To address this concern, the Janet Baker case could be modified by reducing the number and complexity of questions and by providing greater support for lower-level students, as shown in **Exhibit 32**.

Assessment of Six Sample Student Papers

Exhibit 33 provides six sample student papers from the textbook assignment, along with assessments using a generic critical thinking rubric (I will use this same rubric for all of the sample student assessments in this document). **Exhibit 33** also provides my assessment comments on each student response.

Exhibit 30 Case Assignment: Janet Baker's Residence Decision

☆ 1.23

Q3, Q4, Q5



Relevant information, uncertainties, information for decision making Janet Baker is deciding where to live during her second year in college. During her first year, she lived in the residence hall. Recently her friend Rachel asked her to share an off-campus apartment for the upcoming school year. Janet likes the idea of living in an apartment, but she is concerned about how much it will cost.

To help her decide what to do, Janet collected information about costs. She would pay \$400 per month in rent. The minimum lease term on the apartment is six months. Janet estimates that her share of the utility bills will be \$75 per month. She also estimates that groceries will cost \$200 per month. Janet spent \$350 on a new couch over the summer. If she lives in the residence hall, she will put the couch in storage at a cost of \$35 per month. Janet expects to spend \$7,500 on tuition and \$450 on books each semester. Room and board at the residence hall would cost Janet \$2,900 per semester (four months). This amount includes a food plan of 20 meals per week. This cost is nonrefundable if the meals are not eaten.

**REQUIRED:
INFORMATION
ANALYSIS**

The following questions will help you analyze the information for this problem. Do not turn in your answers to these questions unless your professor asks you to do so.

- ③ A. Use ONLY the cost information collected by Janet for the following tasks.
 - 1. List all of the costs for each option. *Note:* Some costs may be listed under both options.
 - 2. Review your lists and cross out the costs that are irrelevant to Janet's decision. Explain why these costs are irrelevant.
 - 3. Calculate and compare the total *relevant* costs of each option.
 - 4. Given the cost comparison, which living arrangement is the better choice for Janet? Explain.
- ① B. Identify uncertainties in the cost information collected by Janet.
 - 1. Determine whether each cost is likely to be (i) known for sure, (ii) estimated with little uncertainty, or (iii) estimated with moderate or high uncertainty.
 - 2. For each cost that is known for sure, explain where Janet would obtain the information.
 - 3. For each cost that must be estimated, explain why the cost cannot be known.
- ① C. List additional information that might be relevant to Janet's decision (list as many items as you can).
 - 1. Costs not identified by Janet.
 - 2. Factors other than costs.
- ② D. Explain why conducting a cost comparison is useful to Janet, even if factors other than costs are important to her decision.
- ② E. Consider your own preferences for this problem. Do you expect Janet's preferences to be the same as yours? How can you control for your biases as you give Janet advice?
- ③ F. Think about what Janet's priorities might be for choosing a housing arrangement. How might different priorities lead to different choices?
- ④ G. Describe how information that Janet gains over this next year might affect her future housing arrangements.

Suppose Janet asks for your advice. Turn in your answers to the following.

**REQUIRED:
WRITTEN
ASSIGNMENT**

- ③ H. Use the information you learned from the preceding analyses to write a memo to Janet with your recommendation and a discussion of its risks. Refer in your memo to the information that would be useful to Janet.

[This homework problem is from Chapter 1 in Eldenburg and Wolcott (2005, pp. 29-30), copyright by John Wiley and Sons. Presented here with permission.]

Exhibit 31 Grading Rubric: Janet Baker

	Weak	Average	Professional
Computations and Data Schedule Maximum 30 points Points Earned: __	Up to 20 points <ul style="list-style-type: none"> • Fails to correctly distinguish between relevant and irrelevant costs • Fails to adjust cost data for number of months • Fails to present data schedule, or presents schedule that is difficult to understand 	25 points <ul style="list-style-type: none"> • Correctly distinguishes between relevant and irrelevant costs • Adjusts costs data for number of months, but provides no justification for method used • Presents data schedule, but fails to provide supporting details for calculations 	Up to 30 points <ul style="list-style-type: none"> • Correctly distinguishes between relevant and irrelevant costs • Applies & justifies a reasonable approach for adjusting costs data for number of months • Presents data schedule, along with supporting details; schedule and details are easy to understand
Written Communication Maximum 30 points Points Earned: __	Up to 20 points <ul style="list-style-type: none"> • Spelling or grammar errors interfere with understandability • Unprofessional language and/or improper memo format • Difficult to understand; poor organization • Fails to explain calculations, relevant information, and/or recommendations 	25 points <ul style="list-style-type: none"> • Minor spelling and/or grammar errors, which do not interfere with understandability • Uses proper memo format, but uses some unprofessional language • Organizes memo into paragraphs that enable reader to understand calculations, relevant information, and recommendations 	Up to 30 points <ul style="list-style-type: none"> • No spelling or grammar errors (or very minor) • Uses proper memo format including useful headings, and uses professional language • Concisely and clearly presents purpose, calculations, relevant information, and criteria/process Janet should use for making her decision
Critical Thinking Maximum 40 points Points Earned: __	Up to 20 points	30 points	Up to 40 points
Overall approach	<ul style="list-style-type: none"> • Focuses primarily on computations in making a recommendation 	<ul style="list-style-type: none"> • Focuses primarily on supporting a single recommendation; appears to ignore or discount information that contradicts the recommendation 	<ul style="list-style-type: none"> • Focuses primarily on providing Janet with the information she needs to make a decision, including criteria for weighing the options
Identify & analyze relevant information	<ul style="list-style-type: none"> • Makes erroneous statements about costs and/or qualitative factors 	<ul style="list-style-type: none"> • Correctly interprets cost data and addresses at least some relevant factors not considered by Janet (cost and qualitative) 	<ul style="list-style-type: none"> • Correctly interprets cost data and incorporates a wide range of relevant cost and qualitative factors that were not explicitly presented in the assignment
Identify & address uncertainties/risks	<ul style="list-style-type: none"> • Does not appear to recognize uncertainty about the costs and/or qualitative factors 	<ul style="list-style-type: none"> • Identifies at least some uncertainties exist about the costs and/or qualitative factors 	<ul style="list-style-type: none"> • Describes a range of important issues & risks that Janet should consider
Analyze problem from Janet's perspective	<ul style="list-style-type: none"> • Does not appear to be aware of Janet's perspective; makes incorrect statement(s) about Janet's preferences 	<ul style="list-style-type: none"> • Acknowledges Janet, but addresses the problem primarily from own perspective 	<ul style="list-style-type: none"> • Anticipates and addresses alternative preferences that Janet might hold
Total Points Earned: __ (100 maximum)			

Exhibit 32 Assignment Modifications: Janet Baker

For the second edition of the cost accounting textbook (Wiley, 2011), my co-author and I revised the written requirement for the Janet Baker assignment as follows:

- REQUIRED:** Suppose Janet asks for your advice. Turn in your answers to the following.
- ③ **H.** Use the information you learned from the preceding analyses to write a memo to Janet with your recommendation and a discussion of its risks. Refer in your memo to the information that would be useful to Janet.
 - ③ **I.** How did you decide what information to include in your memo to Janet? Write one or two paragraphs explaining your thought process.

Requirement H is unchanged, and requirement I is added. At first, requirement I might seem odd. However, I have learned that student responses to this question provides me with considerable insights into student thinking.

Modifications for Introductory Management Accounting

Assumptions for this version: The majority of students lack Level 2 skills, although a few students are able to perform at Levels 2 or 3. Learning objectives for the course focus on Level 2 skills.

1. Using ONLY the cost information collected by Janet:
 - a. Create a worksheet similar to the following and list all of the costs for each option.

Note: Some costs may be listed under both options.

Residence Hall	Apartment

- b. Review your worksheet and cross out the costs that are irrelevant to Janet's decision. Explain why these costs are irrelevant.
 - c. Calculate and compare the total relevant cost of each option.
 - d. Given the cost comparison, which living arrangement is the better choice for Janet? Explain.
2. Identify uncertainties in the cost information collected by Janet:
 - a. Determine whether each cost is likely to be: (i) known for sure, (ii) estimated with little uncertainty, or (iii) estimated with moderate or high uncertainty.
 - b. For each cost that is known for sure, explain where Janet would obtain the information.
 - c. For each cost that must be estimated, explain why the cost can't be known for sure.
3. List additional information that might be relevant to Janet's decision:
 - a. Costs not identified by Janet
 - b. Factors other than costs
4. Explain why conducting a cost comparison is useful to Janet, even if factors other than costs are important to her decision.

Exhibit 33 Assessment of Six Student Papers: Janet Baker

Student #1

MEMO: Apartment and Residence Hall Cost Comparison

Dear Janet,

Based on a cost comparison analysis of the information that you provided me, I would recommend that you move into the apartment for your second year in college. The relevant costs for moving into the apartment, that I identified based on the information you gave me, include rent expense, utility bills expense, and groceries. This came out to a total of \$675 per month. The relevant costs for living in the residence hall include the cost of couch storage and room and board. This totals to \$760 per month. Based on the information and costs that you have projected, I would recommend living in the apartment.

Tuition and books are irrelevant costs to your decision because they are costs that you will have to incur regardless of where you live. The cost of tuition and the cost of books are not dependant on whether you are living in an apartment or at a residence hall. The \$350 spent on the couch bought over the summer is also an irrelevant cost since the cost has already been incurred and is not an additional cost if you live in the apartment.

I think you should consider several other factors regarding the apartment before making your final decision. There are some uncertainties associated with your projected costs for the apartment. The amount for rent has been negotiated for the minimum lease term of six months. You should find out if the cost is expected to change or if it is expected to remain the same throughout the year. The cost of utility bill will fluctuate from month to month and therefore is estimated with moderate uncertainty. The amount spent on groceries differs month to month and can be estimated with little to moderate uncertainty. Although one may plan to spend a certain amount on food, the amount you actually spend cannot be estimated to be an exact amount. You should also consider other costs, such as telephone bills, furniture, refrigerator, dishes, kitchen supplies, cleaning supplies, television, electricity bill, etc. Other factors that you should consider are distance from campus, transportation costs, relationship with your roommate (will you get along in the future or will there be major problems), and lifestyle (having your own place may come with more responsibility). I hope the uncertainties and other factors listed above are useful to you in making your decision and provide other relevant costs to consider.

In reevaluating the costs relevant for living in the residence hall, the cost for room and board is estimated with little or no uncertainty since it is set for the year by the university. A total of 20 meals per month are included in your room and board food plan. You need to consider the cost of the meals that are not included in the food plan. The cost of the couch storage may have uncertainty in the estimation since prices may change if you are offered a low introductory rate but the rate might change depending on how long you store the couch. Other factors to consider include the distance to classes and lifestyle.

In conclusion, based on the information that you have provided me, I would recommend that you move into the apartment based on a cost comparison of relevant costs. However, I hope you sincerely consider the uncertainties associated with your estimation of costs, other costs that you

will have to incur, and other factors related to where you live. I hope my memo was helpful to you in making your decision.

Sincerely,
Student #1

Costs for each option

Cost	Apartment		Residence Hall	
Rent Expense	400		Couch Storage	35
Utility Bills Expense	75		Tuition	7500
Groceries	200		Books	450
Tuition	7500		Room and Board	725
Books	450			

Calculate relevant costs

Location	Apartment		Residence Hall	
	Rent Expense	400	Couch Storage	35
	Utility Bills Expense	75	Room and Board	725
	Groceries	200		
Total relevant cost		675		760

Apartment Costs not identified by Janet

- Telephone Bill
- Dishes
- Refrigerator
- Kitchen Supplies
- Electricity Bill
- Cleaning Supplies
- Television
- Furniture ex. Dining room table, lamps, tables, bed, dresser, etc.

Factors other than costs

- Distance from campus
- Transportation costs
- Relationship to roommate (will you get along or will there be major problems)
- Lifestyle

Apartment Costs not identified by Janet

- Telephone Bill
- Cost of meals

Factors other than costs

- Distance from campus
- Lifestyle

Critical Thinking Rubric

Student: Janet Baker #1

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 3.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #1

Rating: 3.0

Strengths: This student provides a fairly complete identification of relevant information. The student also attempts to integrate uncertainties into the analysis, as well as quantitative and qualitative factors not identified by Janet. The student does not appear to be biased toward a particular recommendation for Janet; information is presented in an objective manner. The recommendation and reasons for it are clearly stated, and the student cautions Janet to consider other factors before making a final decision. In addition, the memo provides a nice summary of relevant information for Janet.

Weaknesses: The recommendation given to Janet focuses primarily on the initial cost analysis—using only the data collected by Janet. Thus, the final conclusion appears to give weight only to well-defined cost data. It is unrealistic to rely on the original cost data, given that Janet appears to have ignored fairly sizeable costs. In addition, there is an unstated assumption that Janet can trust the apartment roommate to pay half of the rent and other shared costs. Although the student identified the degree of uncertainty about various costs, this information was linked only indirectly to the recommendation. In other words, it is not clear how Janet should take into account the uncertainties in making her decision. Are some of the issues or uncertainties likely to be more significant than others? If so, what is the effect on the decision? The student could help Janet in her decision by identifying possible priorities in weighing the information and in taking into account the uncertainties. There are numerous ways that the factors could be weighed in this problem. For example, Janet might choose to live in the dorm if she is risk-averse and is primarily concerned about living within her budget. Or, Janet might choose to live in the apartment if personal freedom is of high priority. The student could also recommend ways for Janet to control risks if she chooses the apartment option.

TO: Janet

FROM: Student #2

SUBJECT: Cost of living at school vs. an apartment

DATE: February 6, 2005

Janet,

In deciding whether to live at school or an apartment it is very important to consider the costs that you can avoid and costs that are fixed. The following is a list of costs.

	Apt.	School	
Tuition	7,500	7,500	
Books	1800	1800	
Food	1200	11600	Room and Board (includes meals)
Rent	2400	0	
Utilities	450	0	
Storage	0	210	
Total			
Cost	13,350	21,110	

As you can see it would cost more to live at school. An advantage of living in an apartment is that costs such as utilities and food are not fixed, however room and board is the same even if they are not used. If you have any more questions let me know. My number is [phone number].

Critical Thinking Rubric

Student: Janet Baker #2

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, "correct" answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other "textbook" concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #2

Rating: 1.0

Strengths: This student correctly recognizes two major advantages and one major disadvantage of the dormitory option. Relevant costs are summarized in a table that is easy for Janet to understand.

Weaknesses: The student incorrectly matches 4-month costs for the dormitory option to 6-month costs for the apartment option. Also, it is not clear whether the student recognizes that the tuition and books costs are irrelevant to the decision. The student presents information, but does not explicitly provide Janet with a recommendation. In addition, the student ignores most of the cost uncertainties and fails to identify numerous factors that could be important to the decision, such as costs not identified by Janet and qualitative factors.

To: Janet Baker
From: Student #3
Date: 2/6/2005
Re: Recommendation on your

The purpose of this memo is to provide to you an analysis of the costs that you would incur for one semester if you were to choose to live in the residence hall or rent a room off-campus with your friend Rachel. I will give you my personal advice based on the costs that I'm going to calculate for you.

These are the relevant costs that should be analyzed for each option.

Off-Campus Costs

\$400 * 6 months =	\$ 2400 (rent)
\$75 * 6 months =	\$ 450 (utilities)
\$200 * 6 months =	<u>\$ 1200 (groceries)</u>
Total	\$ 4050

Residence Hall Costs

Room and Board =	\$ 2900
\$35 * 4 months =	<u>\$ 140 (couch storage)</u>
Total	= \$ 3040

Based on the costs that you gave me, the tuition per semester and the costs for your books are irrelevant costs because they are unavoidable regardless of which course of action you take. With the calculations I gave you; it seems that living in the residence hall is much cheaper.

I do suggest that you also take into consideration other relevant costs that you may incur. For example, if the apartment that you are going to rent is going to require you to take the bus or drive, then you are going to incur transportation costs. If you decide to live on-campus you must obtain more information on how much more you are going to pay after the semester ends. For example, if you decide to live in the residence hall during winter break or summer vacation, you should find out how much you have to pay for each month and also calculate how much in food you are going to spend during those months.

Another suggestion I want to give you is to consider any changes that may occur in the lease agreement from renting the apartment. There might be an increase in rent or utilities. In addition, there might be an increase in room and board for the next semester.

To be sincere with you, I would prefer the apartment because is going to be more spacious and private than living on the residence hall. But before I could decide on these commodities, I must base my final decision on the total costs that I will incur for the whole semester. Based on the data, living on-campus will be cheaper than living off-campus.

Critical Thinking Rubric

Student: Janet Baker #3

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #3

Rating: 2.0

Strengths: This student correctly identifies irrelevant information, identifies several relevant costs not identified by Janet, and identifies a qualitative factor. The student also points out that some of the costs may differ from expectations. The recommendation and reasons for it are clearly stated, and the student tells Janet to consider additional costs before making a final decision.

Weaknesses: The student incorrectly matches 4-month costs for the dormitory option to 6-month costs for the apartment option. The student identifies only the most obvious cost uncertainties and only one qualitative factor. The student also fails to identify a wide range of relevant costs not identified by Janet. The student seems to focus on information that would support the recommendation—i.e., the presentation is biased. No factors are cited in favor of the apartment option.

To: Janet Baker

From: Student #4

Subject: Residence recommendation

I have analyzed the different costs that would be incurred under the two possibilities of residence. You have to keep in mind that the recommendation given here is based on the assumption that the estimates made will hold. Tuition and books costs were not taken into consideration in this analysis, since these costs will be incurred regardless of the place of residence.

- If you were to live in the residence hall, you would only incur two costs: the cost of room and board, which is \$725 and the rental of the storage for the couch for \$35, both in a monthly basis. It's fairly safe to say that these prices are more reliable, since in both instances a contract will have to be signed and a price change is very unlikely. The only downturn of this option is that the total room and board cost is \$2,900 per semester (four months), hence \$725 per month, thus leaving us with four months unaccounted for of rent.
- To share an off-campus apartment with your friend Rachel is less expensive. If we were to add these, we would find that you would incur \$400 rent, \$75 utilities, and \$200 groceries. These costs amount to \$675 monthly, but these costs are not as certain, since utilities will vary from month to month and so will the groceries' cost.

Therefore, I recommend Janet to go with the off-campus apartment, although this will require a contract of a lease for six months, but in the unlikely event of having to drop all classes in college, in a cumulative basis, she will save more.

Critical Thinking Rubric

Student: Janet Baker #4

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, "correct" answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other "textbook" concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #4

Rating: 1.5

Strengths: This student correctly identifies irrelevant information. The recommendation and reasons for it are clearly stated.

Weaknesses: The student identifies only the most obvious cost uncertainty. The student also fails to identify numerous costs not identified by Janet that could be relevant to the decision and does not consider any qualitative factors. The final recommendation is biased because it assumes that only costs are relevant to the decision.

TO: Ms. Janet Baker

FROM: Student #5

DATE: February 5, 2005

SUBJECT: Cost Strategy for the Coming Semester.

According to the data collected, you will pay more by moving with your friend. Listed below are some of the reasons why renting an apartment cost you more than living on campus.

First, the lease term on the apartment is six months, which will cost is \$2400 without utility and food cost. The residence hall would cost you \$2,900 for four months including 20 meals per week.

Second, living in the residence hall saves you money on groceries and utility bills. Your food and utility is included with the rent price, which is \$2,900 for the semester. It saves you both time and money spends on groceries.

Third, paying storage for the new couch cost you \$ 140 for the semester. Your total cost staying in the residence hall will be \$3040 including storage. Renting an apartment will cost you \$6275 for at the least for six months.

My recommendation is that you stay at the residential hall. It will save you more money, which you can use for tuition and books. In addition, living in the residential hall will give flexibility since it is based on four months period. If you have any questions, please contact me at [phone number].

Critical Thinking Rubric

Student: Janet Baker #5

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, "correct" answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other "textbook" concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #5

Rating: 1.5

Strengths: This student correctly excludes irrelevant information from the analysis and also identifies a couple of relevant qualitative factors. The recommendation and reasons for it are clearly stated.

Weaknesses: The student fails to provide details of the cost analysis and appears to match 4-month costs for the dormitory option to 6-month costs for the apartment option. The student does not identify any uncertainties and also fails to identify numerous factors that could be important to the decision, such as costs not identified by Janet and a wider range of qualitative factors. The recommendation focuses only on costs and ignores other factors that might be important to the decision.

Memorandum

Date: February 5, 2005
To: Janet Baker
From: Student #6
Subject: Recommendation on Living Arrangement

My recommendation on the living arrangement for the semester would be to live in the apartment to be economically efficient. From the information given, cost of living in an apartment would cost \$8,100 and cost of living in the residence hall would cost \$9,120 for the year. Calculations can be seen in attachment of the memo.

The costs are calculated based how much it would cost to live for the year. Certain costs are irrelevant to this situation such as tuition, books and the cost of the couch. Other than costs of each situation, there are non-cost materials to also consider. In an apartment, there is more privacy compared to residence hall. There is also an issue of transportation. Since residence hall is on campus, there is no need to worry about what type of transportation you need to take versus traffic issues when living in an apartment.

Costs of the living in the apartment can always change because it is calculated on estimation. As there are more demand in utilities and more consumption in eating habits, estimations can always go up. It also can be opposite if the demand goes down.

As long as the estimation of utility and groceries can stay at the estimated cost, the best living arrangement for the near year would be to live in an apartment with Rachael whether to live in residence hall.

Critical Thinking Rubric

Student: Janet Baker #6

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Rater's Assessment Comments: Student #6

Rating: 2.0

Strengths: This student identifies relevant cost information beyond that presented by Janet, as well as some relevant qualitative information. The student also identifies some uncertainty about costs for the apartment option. The recommendation and reasons for it are clearly stated, and the student cautions Janet that the recommendation assumes that actual costs will be the same as estimated costs.

Weaknesses: The student identifies only the most obvious cost uncertainties and only a couple of qualitative factors. The student also fails to identify numerous costs not identified by Janet that could be relevant to the decision. The final recommendation does not consider qualitative factors; the best option is dependent only on whether actual costs stay at the estimated level.

[Note: The student's memo mentions the existence of an exhibit showing the calculations. Because I did not see the exhibit, I did not comment on it as a strength or weakness.]

4.8 Ethical Scenario

See the **WorldCom** case assignment in **Exhibit 34**. I used this case in undergraduate introductory financial accounting. The case includes three questions. The first two questions are well-defined. Students are explicitly given information to answer the first question, and students are expected to apply their knowledge of accounting to correctly answer the second question. The third question requires students to apply critical thinking skills to a hypothetical ethical dilemma.

Student Performance on an Ethical Dilemma

In general, I have found that student performance during an accounting course is one cognitive level lower for an ethical scenario than for an accounting scenario.

Assessment of Three Sample Student Papers

Exhibit 35 provides three sample student responses to assignment question #3. The exhibit also provides assessments using a generic critical thinking rubric.

Exhibit 34 Case Assignment: WorldCom

Read the attached excerpts from the report of the “Special Investigative Committee” of WorldCom, Inc., filed with the U.S. SEC on June 9, 2003. This report describes a major fraud committed by the managers of WorldCom during 1999 through 2002. Also attached are excerpts from the company’s most recent financial statements. (Note: WorldCom has changed its name to MCI.) You do not need the financial statements for the written assignment, but we will discuss the statement excerpts during class on Friday.

Required:

Turn in your written answers to the following questions. You are free to discuss this assignment with other people, but the paper you turn in must be your own work.

1. What appeared to be the motivation behind the fraud?
2. How did improper capitalization of line costs improve the reported financial results? Describe the effects on the balance sheet, income statement, and statement of cash flows. You do not need to include dollar amounts in your description; however, you need to explain the effects well enough for me to determine whether you understand how this fraud affected the financial statements.
3. Many people at WorldCom were either aware of or actively participated in the company’s fraud. Suppose you were an employee at WorldCom who became aware of the fraud. Analyze alternative actions you could have taken, and propose a course of action. As you analyze this situation, be sure to address uncertainties about how you should respond, the possible effects of your actions on others as well as yourself, and how you weighed issues in reaching a conclusion. (This part of the assignment should be 1-2 pages, single spaced.)

Exhibit 35 Assessment of Three Student Papers: WorldCom

The three examples below include ONLY students' responses to question #3 of the assignment (i.e., to the part of the assignment that required critical thinking).

Response of Student A

3. If I was an employee in that company I would call attention of the Board of Director to such incident and I would advise them to make an investigation on the subject matter since the Board of Director have a final says in management of company. It is better to make Board of Director to aware what was going on in the company and let them take a legal action of that matter.

Critical Thinking Rubric

Student: WorldCom Student A

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, "correct" answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other "textbook" concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Response of Student B

3. There are three major actions one can take after finding out about the fraud in the company. First, one can act passive, pretend nothing ever happened and let the fraud continue (committing a crime at the same time?). Second, one can actively join the bad guys and commit even bigger crime. The third option is to blow the whistle and be honest. Most of us would probably want to be honest, but the company may be prepared to put pressure on people to keep them quiet. Even peer pressure can be enough pressure to ensure employee loyalty. Not to mention maybe the most powerful tool, money. Nobody wants to risk their job and future incomes. I wouldn't. The easiest and the best way to deal with a fraud is to try to get away from it. I would try to sneak out from the company and find another job. After making sure I have another job, I could disclose the fraud.

Critical Thinking Rubric

Student: WorldCom Student B

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Response of Student C

3. The question of reporting frauds is a very ethical one. I think, if you are involved in a company which commits fraud, you may realize what is going on but you are most probably not aware of the consequences such a fraud effectuates. That is probably one of the reasons why most employees or involved persons who are aware of the fraud, do not react and uncover those illegal actions immediately. If they realize and discover what is really going on in the company, some might take actions, depending on the people and their ethical standpoint. People who commit fraud obviously do not have any morals, because otherwise they could not handle the consequences and negative effects on all the people involved in this company, say investors, creditors, government and top priority the employees and the whole economy who suffers from a fraud of umpteen billion dollars and might take a long, long time to recover.

If I become aware of a fraud taking place in the company, what would I do? As I most probably would never have been involved in such a business before, I would first look at what is going on here. Which numbers and accounts are faked, what is the purpose of those faked numbers? On the other hand, I would want to find out what the real situation would look like. The consequences are obvious. If the company calculated as it is supposed to under the generally accepted accounting principles, it would report a loss, so it is obvious why the company committed fraud.

So, what would I do? I think I would definitely uncover the fraud. There are 2 reasons for that: As soon as you are aware of a fraud, the risk to be considered as guilty is very high. Secondly, by uncovering the fraud as soon as possible, there might be the possibility to contain the loss, first of all because there are so many parties involved in such a big company as WorldCom, who suffer from the fraud. Although, there are also many negative consequences. Of course, I would think of the effects of my actions on others and myself. Ok, if a company commits fraud, the numbers shown on the balance sheet and income statement are positive and out of the perspective of an employee there is no concern of not getting his salary, unless the fraud is not uncovered. But you have to think that the fraud is just a temporary method, it cannot be hidden endlessly, so by revealing the fraud you risk that many employees lose their jobs but on the other hand, there will come the point of laid-off employees anyway, at the latest when the fraud is uncovered.

How I would proceed in uncovering the fraud is a difficult question, particularly since I have no idea how this business works. Maybe there exists some anonymous auditing service which you can go to in case of fraud. First, maybe it could be best to talk with the executives of the company itself, despite the risk to get laid off. If they are not willing to change their procedure and keep on manipulating financial statements, I would inform either such anonymous auditing service, as far as they exist, or internal audit team to check and investigate WorldCom's financial statements.

You also have to be aware, that in case of uncovering a fraud, the company has to file a petition in bankruptcy. In case of WorldCom, the employees get paid, customers get service, and WorldCom retains possession of assets and a little breathing room to reorganize. Banks that provide the loans are in favor because they will be first in line to be repaid. If Chapter 11 is successful, WorldCom can continue to operate with a restricted debt load, operate more efficiently than before and preserve jobs and assets. Actually, that is the benefit of bankruptcy for WorldCom.

Critical Thinking Rubric

Student: WorldCom Student C

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

4.9 Response to SEC Inquiry

See the **Segment Reporting** case assignment in **Exhibit 36**. This case was written by a former Chief Financial Officer of the company discussed in the case. I used this case in a Master of Accountancy capstone course.

Improving Assignment Design

Exhibit 37 provides several alternative assignment designs to improve student learning for different accounting courses.

Assessment of Three Sample Student Papers

Exhibit 38 provides three sample student papers, along with assessments using a generic critical thinking rubric.

Exhibit 36 Case Assignment: Segment Reporting

You are the CFO of a public company that went public 11 months ago via an initial public offering (IPO). The company is currently owned 30 percent by the public and 70 percent by management and the founding family. You have just received a notice from the SEC that your company's segment reporting is inadequate. The SEC argues that you should separately report a segment for each of the two product lines your company manufactures and markets.

Product Line Background:

Your company's current segment reporting is limited to one line-of-business consisting of two product lines. Your company has been manufacturing and marketing product line A since the inception of the company. The second product line (B) was a direct outgrowth of product line A. The product lines:

- Are developed based on the same technologies, patents and engineering support
- Have similar manufacturing processes, are manufactured in the same manufacturing plant, and have 85% of the same component parts.
- Are integrated into your customers' machines, which are in turn sold to their end users to enhance the end users' production throughput.
- Require that your engineers work closely with the engineers of your customers to ensure your product can be effectively integrated into their machines.
- Have a global market and require a significant amount of after-sales service that is a very profitable business
- Are stored and shipped out of the same warehouse
- Are sold to customers who are classified in the same industry and have been assigned the same SIC code.
- Have different sales forces since the customers of each product line sell to very different end users/industries and, since your product is technical, each sales force must be trained in the unique production processes of your customers' end users.

Though sales of each product line are approximately the same, Product line A has a gross margin of 20% whereas Product Line B has a gross margin of 95%. The difference is caused by the selling price, not the cost of manufacturing. Product line B, when integrated into your customers' machines, allows their machines to operate at speeds four times faster than without your product. Thus, your customers' machines can be sold to customers at a much higher price since the increase in speed of their machines is a significant production throughput increase to their end users. In addition, the cost of your products is less than 5% of the total cost of your customers' machines.

(continued)

(Exhibit 36 continued)

Impact on Your Company if Segment Reporting is Changed:

Your Board of Directors and executive management have the following concerns if you change your segment reporting:

- Product Line B customers would likely attempt to force you to give them a price reduction
- The information you would be required to report would provide your competitor with too much information and may draw new competitors into your market
- Your shareholders could question your IPO disclosures in spite of the fact the disclosures had been scrutinized, reviewed and accepted by your lawyers, public accountants, and the SEC

The Board feels that this disclosure would be very detrimental to the financial wellbeing of the company.

You have been asked to evaluate the situation and provide your recommendation to the Board of Directors. You know from talking with your public accountants and your colleagues in other companies that the SEC has been questioning the segment disclosures of many companies. They have indicated that the increase in these types of SEC inquiries have resulted from “no-name” inquiries made by law firms on behalf of their clients, who were likely your competitors. However, you consider the SEC inquiry as a serious matter.

Required:

Develop a recommendation to your Board of Directors, including your analysis of the situation, the alternatives you investigated, and why you came to your recommendation.

Exhibit 37 Improving Assignment Design: Segment Reporting

Original Requirement:

This requirement is simple, but it does not necessarily encourage strong student performance.

Required:

Develop a recommendation to your Board of Directors, including your analysis of the situation, the alternatives you investigated, and why you came to your recommendation.

Three Alternative Sets of Questions

Set of Questions: Junior or Senior-Level Course

1. Describe the roles of the CFO, Board of Directors, and SEC in public company financial reporting.
2. Describe the accounting rules for segment reporting and list the facts of the case that relate to those rules.
3. Explain why application of the segment reporting rules is uncertain for this company.
4. Identify at least three possible responses to the SEC inquiry, and discuss the arguments for and against each response. The arguments you discuss must include, at a minimum, relevant accounting concepts and economic effects.
5. Write a memo to the Board of Directors containing your recommendation, its basis, limitations, and any other information the Board of Directors needs to make an informed decision on this matter.
6. Explain how you decided what information to include/exclude in writing your memo to the Board of Directors.

Set of Questions: Master-Level Course

1. Explain why application of the segment reporting rules is uncertain for this company.
2. Discuss ways in which the CFO needs to consider his/her own point of view as well as the points of view of the Board of Directors, the SEC, and other stakeholders in evaluating alternative solutions.
3. Identify and evaluate alternative ways in which the company might respond to the SEC inquiry, including contingencies for different reactions by the SEC to the company's response.
4. Write a memo to the Board of Directors containing your recommendations, their basis, limitations, and any other information the Board of Directors needs to make an informed decision on this matter.
5. Explain how you decided what information to include/exclude in writing your memo to the Board of Directors.

(continued)

(Exhibit 37 continued)

<p>Set of Questions: Sequential Support for Increasing Complexity with Two-Part Written Requirement</p> <p>This set of questions provides strong support for student learning—particularly if the assignment is used for an undergraduate course. This format also encourages students to first perform thorough analyses, and then to focus on the business memo. It minimizes grading requirements (i.e., the written assignment). Part 9 is especially helpful for assessing student thinking.</p>	
<p>Required: Analyze Information</p> <p>The following questions will help you analyze the information for this problem. Do not turn in your answers to questions 1-7.</p>	
Level 2	1. Describe the roles of the CFO, Board of Directors, and SEC in public company financial reporting.
Level 2	2. Describe the accounting rules for segment reporting and list the facts of the case that relate to those rules.
Level 2	3. Identify the relevant accounting standard(s) and explain why application of the segment reporting rules is uncertain for this company.
Level 3	4. Identify at least three possible responses to the SEC inquiry, and discuss the arguments for and against each response. The arguments you discuss must include, at a minimum, relevant accounting concepts and economic effects.
Level 4	5. Determine the most important accounting issue(s) in this case.
Level 4	6. Identify alternative sets of priorities for choosing a course of action.
Level 5	7. Develop a plan for gathering more information about how the company should report its business segments and/or respond to the SEC.
<p>Required: Written Assignment</p> <p>Turn in your answers to the following.</p>	
Level 4	8. Use the information you learned from the preceding requirements to help you write a properly formatted business memorandum to the Board of Directors containing your recommendation, its basis, limitations, and any other information the Board of Directors needs to make an informed decision on this matter.
Level 4	9. In a separate document, explain how you decided what information to include/exclude in writing your memo to the Board of Directors.

Exhibit 38 Assessment of Three Student Papers: Segment Reporting

Illustrative Response: **Student #1**

February 17, 2000

TO: Board of Directors
FROM: [Student Name]
SUBJECT: Recommendation about Segmentation Reporting

We have just received a notice from the SEC that it feels that our company's disclosure regarding segmentation reporting is inadequate. The SEC feels that we should report separate segments for each of the two product lines our company manufactures and markets. As a CFO, I believe that this would have a negative impact on the company. Therefore, I recommend that you not accept the SEC's inquiry.

First of all, even though the SEC feels that our company's disclosure regarding segmentation reporting is inadequate, our company's current segmentation reporting has been scrutinized, reviewed, and accepted by our lawyers, public accountants and the SEC. This means that our segmentation reporting doesn't have any problems according to GAAP and the SEC. Therefore, we don't have any duty to disclose more information about our segments. In addition, one of the reasons why the SEC has been questioning the segmentation disclosures of our company is that the SEC's inquiry to our company has resulted from "no-name" inquiries made by law firms on behalf of their clients, who are likely our competitors. So, I believe that the SEC's inquiry is a simple inquiry, not an official requirement.

The next reason is that the information we would be required to report would provide our competitors with too much information and may draw new competitors into our market. Both product lines are developed based on the same technologies, patents and engineering support. Also, both have very similar manufacturing processes and both are manufactured in the same plant. However, Product line A has a gross margin of 20%, whereas Product line B has a gross margin of 95%. The reason for the difference relates to the selling price, not the cost of manufacturing. Information about our profit margins could be very important to our competitors. It would be possible for them to use our price policy for their customers. In addition, this information can draw new competitors into our market.

The last reason is related to the second reason. If we have to disclose segment information, our customers will learn that Product line B has a gross margin of 95%. Therefore, our customers for Product line B will not be happy with our pricing policy and will probably force us to reduce our price. If we don't reduce our selling price, our customers might seek new suppliers.

I recommend that the board not accept the SEC's inquiry to disclose segment information for the reasons above. I believe that we should keep our current segment reporting policy.

Critical Thinking Rubric

Student: Segment Reporting #1

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> Focuses on own viewpoint 	<ul style="list-style-type: none"> Attempts to focus on audience information needs Provides audience with too much information 	<ul style="list-style-type: none"> Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> Anticipates diverse audience needs beyond the current communication

Illustrative Response: Student #2

To: Board of Directors
From: [Student Name]
Date: February 17, 2000
Re: Segmentation disclosures for product line A and product line B

Since going public 11 months ago, the adequacy of our one line-of-business segmentation reporting has been questioned. Discussions with our public accountants and colleagues of mine in other companies has revealed that the SEC is questioning the segmentation disclosures of many companies in response to “no-name” inquiries made by law firms on behalf of their clients, who are most likely competitors.

There are several possible alternatives to consider for the segmentation reporting of our product line A and product line B. The existing segmentation reporting could be continued, the two product lines could be divided and reported separately, or some combination of the previously mentioned two alternatives could be implemented. It is imperative that we comply with SEC requirements as well as follow Generally Accepted Accounting Principles (GAAP) as mandated by the Financial Accounting Standards Board (FASB). Noncompliance could result in damaging consequences for the company. After careful consideration, I recommend further analysis of the two product lines, further investigation of SEC requirements related to the reporting of this matter and consequences of the implementation of any changes.

It is important to identify and consider the key stakeholders in this decision. First, there are standard setters such as the SEC and the FASB to consider. The SEC feels that each specific segment for the two product lines our company manufactures and markets should be reported individually. The FASB addresses this issue in statement 131. This statement defines operating segments and provides the steps necessary to determine the required disclosures. It appears that product line A and B should be reported separately in accordance with statement 131 because of the quantitative thresholds. However, without further research and financial analysis, this cannot be determined with certainty.

Changing our current segmentation reporting could have a significant impact on the company, including the board of directors, management, and existing shareholders and also outside parties such as competitors and customers. For example, the customers of product line B may force a price reduction when they find out that its gross margin is 95%. Also, the disclosed information may draw new competitors into the market and give existing competition access to new, valuable information. It also might cause existing shareholders to question IPO disclosures already made, which is “bad business” for us.

After examining this issue from the points of view of various stakeholders, I recommend that we take the necessary steps to ensure compliance with the requirements of the SEC and GAAP. Further research and analysis are required to determine what the course of action should be. It is important to identify the potential consequences of any changes that are implemented in order to buffer their impact on the company as a whole and also the other stakeholders.

Critical Thinking Rubric

Student: Segment Reporting #2

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 3.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset <ul style="list-style-type: none"> • Objectivity • Skepticism • Continuous learning 	<ul style="list-style-type: none"> • Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> • Argues in a biased way • Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> • Attempts to provide a detached, balanced view from different perspectives • Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> • Approaches the problem with objectivity and appropriate skepticism • Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> • Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> • Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> • Recognizes that the problem is open-ended/ambiguous • Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> • Identifies the main purpose and multiple potential solutions • Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> • Identifies important embedded, subsidiary problem(s) • Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> • Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> • Focuses on calculations, definitions, and/or other “textbook” concepts • Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> • Discusses information that is relevant to the problem • Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> • Thoroughly and objectively analyzes relevant information from different viewpoints • Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> • Objectively analyzes the most important relevant information • Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> • Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> • Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> • Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> • Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) • Discusses limitations 	<ul style="list-style-type: none"> • Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion • Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> • Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> • Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> • Focuses on own viewpoint 	<ul style="list-style-type: none"> • Attempts to focus on audience information needs • Provides audience with too much information 	<ul style="list-style-type: none"> • Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> • Anticipates diverse audience needs beyond the current communication

Illustrative Response: Student #3

Date: February 17, 2000
To: Board of Directors
From: [Student Name]
Re: Responding to SEC Inquiry Into Segment Reporting

This memo contains my recommendation for responding to the SEC's inquiry into our line-of-business financial accounting practices. I have researched this matter thoroughly and discussed it with our external auditors. Based on my analysis, I believe that our current accounting practice is appropriate and complies with accounting standards. Thus, I recommend that we provide the SEC with our analysis of the accounting standard and argue the appropriateness of our current practice. However, the segment reporting accounting standard is subject to interpretation, and the SEC could make a legitimate case that we should report data separately for product lines A and B. Because the reporting of segment data would most likely cause significant harm to our company, we should develop a contingency plan for addressing this matter further in case the SEC disagrees with our position. I look forward to discussing these issues with you further at the board meeting.

Background

On February 10, 2000, we received a notice from the SEC that our company's segment reporting is inadequate and that we should report product lines A and B as if they were separate business segments. Based on discussions with my colleagues in other companies and with our auditor, I learned that the SEC has been questioning the segment disclosures of many companies. Many of these inquiries appear to have resulted from "no-name" inquiries made by law firms on behalf of their clients, who are typically competitors of the company being investigated. Thus, the SEC's inquiry into our practices might have been prompted by one of our competitors.

As we discussed during the board's conference call on February 11, segment reporting for product lines A and B would probably cause significant harm to our company and its shareholders. In particular:

- * Product Line B customers might force us to give them a price reduction.
- * The information might draw new competitors into our market.
- * Shareholders could question our IPO disclosures.

Accounting Rules

The key accounting issue in the SEC inquiry is whether our product lines A and B constitute separate "reportable operating segments" according to FASB Statement 131. The fact that our top management regularly reviews discrete revenue and expense information for each product line and makes business decisions about resources allocated to each product line could be construed to mean that the product lines are separately reportable. However, the two product lines use virtually the same technology, patents, engineering support, manufacturing processes and facilities, component parts, and warehouse facilities. Thus, the two product lines are actually two parts of the same operation. Our auditors agree with this interpretation, and they have promised to provide us with a letter that we can submit to the SEC supporting our position. I am currently drafting a detailed analysis of the provisions of Statement 131 and how they relate to our company's situation. I will be happy to share the details with you, if you would like to see them.

Contingency Plans

Although we can argue persuasively that our current reporting practice is appropriate, we need to consider the possibility that the SEC might interpret the accounting standard differently than we and our auditors do. Here are some contingency plans for us to discuss during the board meeting:

- * Develop point-by-point arguments that contradict our own position. This will help us anticipate possible SEC objections, and we can then address those objections in our response to the SEC.
- * Identify possible actions to take if we are unsuccessful in persuading the SEC. For example, we could consider taking the company private; private companies are not required to report segment data.

Critical Thinking Rubric

Student: Segment Reporting #3

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 4.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset <ul style="list-style-type: none"> • Objectivity • Skepticism • Continuous learning 	<ul style="list-style-type: none"> • Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> • Argues in a biased way • Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> • Attempts to provide a detached, balanced view from different perspectives • Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> • Approaches the problem with objectivity and appropriate skepticism • Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> • Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> • Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> • Recognizes that the problem is open-ended/ambiguous • Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> • Identifies the main purpose and multiple potential solutions • Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> • Identifies important embedded, subsidiary problem(s) • Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> • Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> • Focuses on calculations, definitions, and/or other “textbook” concepts • Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> • Discusses information that is relevant to the problem • Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> • Thoroughly and objectively analyzes relevant information from different viewpoints • Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> • Objectively analyzes the most important relevant information • Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> • Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> • Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> • Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> • Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) • Discusses limitations 	<ul style="list-style-type: none"> • Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion • Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> • Articulates priorities for improving the problem-solving approach and/or decision criteria over time
Audience	<ul style="list-style-type: none"> • Does not seem to recognize the existence of an audience 	<ul style="list-style-type: none"> • Focuses on own viewpoint 	<ul style="list-style-type: none"> • Attempts to focus on audience information needs • Provides audience with too much information 	<ul style="list-style-type: none"> • Effectively delivers information tailored to the needs of the audience 	<ul style="list-style-type: none"> • Anticipates diverse audience needs beyond the current communication

4.10 Classification of Labor Costs

See the **Wake-Up Coffee** (hypothetical case) assignment in **Exhibit 39**. This case is designed for use in an undergraduate cost accounting course. **Exhibit 39** also provides an alternative design of the assignment to provide higher support for student learning and performance.

Memo to Students

After I graded students' papers for the Wake-Up Coffee case, I prepared the memo in **Exhibit 40**. I gave this memo to students at the same time I provided their grades for the assignment. Each student also received my feedback based on a critical thinking rubric, plus my comments on their paper.

Assessment of Six Sample Student Papers

Exhibit 41 provides six sample student papers, along with assessments using a generic critical thinking rubric. (Note: I used the same generic rubric on other assignments during the course.)

The six student examples come from three different classrooms:

- Students #1 and #2 were given the Wake-Up Coffee assignment as a take-home assignment but were told to write only one paragraph.
- Students #3 and #4 were given the problem as an in-class exercise and were told to write only one paragraph.
- Students #5 and #6 were given the problem as a take-home assignment and were told to write approximately 1-2 pages, single-spaced.

In general, students write less and provide less well-thought-out responses to an in-class exercise than to a take-home assignment. Student perceptions about importance and requested length are also likely to affect your ability to accurately assess performance. For this assignment, I believe that one paragraph is not sufficient for strong performance.

Exhibit 39 Case Assignment with Low and High Support: Wake-Up Coffee

Typical Format (Low Support for Student Learning and Performance):

Wake-Up Coffee: Budgeting Hourly Labor Costs

You have recently been hired by Wake-Up Coffee, which owns and operates a chain of retail coffee shops. You work in the finance department, and your first assignment is to develop a budget for fixed and variable costs for the retail stores. You are having difficulty deciding how to handle labor costs for hourly workers. Each store manager sets a weekly schedule for hourly workers, adjusting the schedule periodically for changes in sales volumes. In addition, the store manager can send workers home early if sales on a particular day are lower than expected. In previous budgets, hourly labor was treated as a variable cost. However, a certain number of workers is needed to run the store, and managers are reluctant to send workers home early too often for fear of losing good employees. Accordingly, you are wondering whether hourly labor costs should be treated as a fixed cost in next year's budget.

Required:

Your boss wants your recommendation about how hourly labor costs should be treated in next year's budget. (1-2 pages, single spaced)

Modified Requirement for Higher Support

Purposes:

- Expose students to future skills
- Challenge all students in a course
- Gather assessment information

Expect better student performance for assignments structured this way, compared to assignments having less-specific instructions.

Required:

Your boss wants your recommendation about how hourly labor costs should be treated in next year's budget. (1-2 pages, single spaced)

Hint: Consider the following issues before arriving at your recommendation

- What are the definitions of fixed and variable costs, and how do those definitions apply to the situation at Wake-Up Coffee?
- Is there any uncertainty about the behavior of labor costs or about how labor costs should be classified in the budget?
- What are the pros and cons of alternative classifications of labor costs in the budget?
- Which of the preceding pros and cons are most important for your boss to consider?
- What additional information would you like to have?

Exhibit 40 Memo to Students: Wake-Up Coffee

Overall Performance

I was very pleased with your overall performance! In particular, your writing was better than I've seen at other universities. Most of you also took care to respond fully to the assignment.

I rated a very small number of students at "Level 1." If I rated your performance at this level, you didn't demonstrate to me that you understood this problem was open-ended.

Accordingly, your biggest weakness was a failure to comprehend the validity of alternative cost classifications. I suggest you concentrate on identifying uncertainties, which will help you recognize open-ended problems. Also try to avoid assuming that there must be a single "right" answer.

I rated the performance of most students at "Level 2." This is typical of performance in junior-level courses. The biggest weaknesses at this performance pattern are failures to more fully: (1) identify uncertainties and (2) objectively explore alternatives. If I rated your performance at this level, then I suggest you concentrate on improving these aspects of your analyses. You should pay particular attention to the sections below on uncertainties and assumptions. Try to explore problems more fully and avoid jumping too quickly to conclusions.

I rated a few students at "Level 4." This is very good performance for an undergraduate course! If I rated your performance at this level, you demonstrated an ability to describe uncertainties, objectively analyze pros and cons, and reach a practical solution. One of the biggest differences between Level 2 and Level 4 is bias—jumping to conclusions. If I made a comment that I had trouble rating your performance between these two levels, this means that you did not fully explain the uncertainties, pros, and cons. It appeared that your conclusions and analyses might have been biased. However, I saw evidence of more sophisticated analysis in your paper. Expand your discussions next time to more clearly describe your thinking! People at Level 4 are more skilled at analyzing information and perspectives. This helps them be more objective in their analyses and use more objective criteria in reaching a conclusion. Their biggest weakness is a failure to address more long-term, strategic issues. Work on expanding your thinking beyond the current problem.

I rated one student's performance at "Level 5." This is very impressive performance. Keep up the good work!

(continued)

(Exhibit 40 continued)

Communication

As I mentioned above, I was impressed by your communication. Following are a few suggestions to help you become even better at this important skill:

- When addressing a case problem involving a decision, it is best to organize your paper like a business memo. This means you should begin with a brief summary of the problem and your recommendation, followed by your analysis.
- Brief examples are great ways to communicate ideas quickly and effectively. Try to use examples that are relevant to the problem at hand. In the Wake-Up Coffee assignment, the best examples involved a retail coffee business.
- Several people used the word “loosing” instead of “losing.” Watch for this error!
- Avoid extraneous/irrelevant discussions. In the business world, being concise is highly valued. Including things that aren’t important makes you appear like you don’t know what you’re talking about. Also, you risk annoying your reader (hint, hint).

Uncertainties

The biggest overall weakness I saw in your papers was an inability to identify more than the most obvious uncertainties. You probably haven’t practiced this skill before, so you are likely to be uncomfortable with this at first. With practice, you will get much better.

In a typical business memo, it generally isn’t appropriate to include a section in which you address uncertainties alone. Instead, uncertainties are usually addressed indirectly through discussions of issues and evaluations of alternatives. However, I am asking you in this class to address uncertainties explicitly because this is a skill that tends to be weak for most students. Clarifying the uncertainties will help you: (1) more readily recognize open-ended problems, (2) perform higher quality analyses, and (3) avoid jumping to conclusions.

Following are some of the uncertainties that affect the classification of hourly labor costs in the Wake-Up Coffee assignment.

- We don’t know how predictable the business activity is.
 - Is there a lot of variability, making it difficult to give employees regular work schedules?
 - Are there likely to be changes in the competitive environment or in customer demand, leading to changes in business activity patterns?
 - Will business operations stay within a single relevant range of activity?
- We don’t know how classification might affect the behavior of managers.
 - If we classify all of the labor costs as fixed, will this encourage the manager to overstaff or understaff the store? If so, what might be the degree of overstaffing or understaffing?
 - If we classify all of the labor costs as variable, will this encourage the manager to send workers home early? If so, how often is this likely to occur?
 - Does the budget classification have any effect on how the manager schedules workers?

(continued)

(Exhibit 40 continued)

- Are past worker schedules relevant for predicting future worker schedules?
- Assuming the budget classification would affect worker schedules:
 - Will good employees leave if they are asked to go home early?
 - How much time does it take to hire and train new employees?
 - How costly is it to hire and train new employees?
 - Will employees develop less positive attitudes in the work place if their work schedules are variable?
- We don't know whether/how staffing levels affect sales.
 - Would longer wait times make us lose some customers? If so, what is the relationship?
 - Would less positive worker attitudes make us lose some customers?

Assumptions

It is VERY important to recognize when you are making assumptions and to evaluate: (1) whether your assumptions are reasonable and (2) how your conclusion is affected by the assumptions. Following are some major assumptions made by students in the class, along with my comments.

- The business will continue to operate in the relevant range of activity. Most of you failed to recognize the possibility of business activity moving outside a single relevant range.
- If labor costs are classified as fixed, then work schedules cannot be changed. As we will discuss more fully next week, some fixed costs—including labor—CAN be changed in the short term.
- To classify hourly labor costs as fixed, there must be the same number of employees working each day and each hour. A “fixed” work schedule could include variation in the number of employees who work at different times.
- Only committed costs can be classified as fixed costs. Fixed costs are classified based on INTENT. If managers intend to adopt a fixed work schedule, then it would be appropriate to classify the costs as fixed. However, this classification does not mean that the managers are committed (in the long term) to maintaining the work schedule.
- Part-time employee hours cannot be classified as fixed. If part-time employees work a regularly defined work schedule, then it would be appropriate to classify their wage costs as fixed.
- The store manager will automatically create a work schedule that matches the budget (fixed, variable, or mixed). The creation of the budget is separate from actual operations of the business. As we will discuss later in this course, budgets can be used as a tool to *encourage* managers to take certain actions. But having a budget does not in and of itself force a specific type of worker scheduling.

(continued)

(Exhibit 40 continued)

- If labor cost is likely to vary, then it should be classified as a variable cost. The classification depends on what CAUSES the cost to vary. If labor costs vary proportionately with sales activity, then the cost would appropriately be classified as variable. However, factors other than business activity can cause labor costs to vary. Examples include changes in wage rates or employment taxes, overtime paid to one employee to fill in for a sick employee, or temporary cost reduction because an employee has left and the position has not yet been filled.
- Fixed costs are known, whereas variable costs are estimated. Both types of cost must be estimated when creating the budget. Actual costs can vary from the budget because staff scheduling varies from the budgeted plan or because of other variations in cost factors (discussed above).
- Classification of labor cost on the budget determines the classification of labor cost on the income statement. For a retail business, both fixed and variable store labor costs would be classified either as part of cost of goods sold or as an operating expense.
- By including variable labor in the budget, the store can avoid being understaffed. As mentioned above, the budget does not automatically translate into actual operations. Suppose an unexpected rush of customers comes in to the coffee shop at 3 pm. Would it be possible to instantaneously add variable-labor staff to meet this rush? It might be possible to obtain additional staff within an hour, but by then the rush might be over.
- Costs are overstated if there is excess fixed labor. The term “overstated” implies some type of error in accounting, in which reported costs are higher than actual costs. This term should not be used to describe the cost of excess labor.

Exhibit 41 Assessment of Six Student Papers: Wake-Up Coffee

Annotated Response of Student #1

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response (Key points were underlined by the rater.)	Assessment Comments
<p>My idea would be to make it a variable cost and <u>not change it</u>. Since there is <u>no set amount of time someone could be there</u> they cannot be certain it would be a <u>fixed cost</u>. For this reason <u>it would have to stay as a variable</u>. No matter how much they can try to make certain set hours, <u>it would be divided among several people instead of one</u>. For this reason it would be hard to make it a fixed because <u>it would involve several accounts as opposed to one set account</u>.</p>	<p>Recommends keeping the existing method.</p> <p>Identifies uncertainty about amount of worker time and uses it as a reason for continuing the existing method. The next sentence denies uncertainty, suggesting the student does not understand that the cost classification is uncertain.</p> <p>Discussion suggests the student understands the basic difference between fixed and variable costs.</p> <p>Provides illogical/confusing reason against the alternative classification.</p>

Critical Thinking Rubric

Student: Wake-Up Coffee #1

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 1.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, "correct" answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other "textbook" concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Annotated Response of Student #2

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response (Key points were underlined by the rater.)	Assessment Comments
<p><u>My recommendation for next year’s budget</u> <u>is that hourly labor costs should be fixed,</u> rather than the past variable. If there needs to be a certain number of workers to run the store at all times, then <u>schedule as many</u> <u>workers as needed</u> and do send them home early <u>if sales start to slow down</u> for the day. This might make some good employees that are needed angry and quit. To avoid this, <u>schedule less workers in the already known</u> <u>slow periods</u> of the day, rather than just sending someone home. Also, if next year’s budget is changed to fixed costs, <u>the boss</u> <u>won’t have to keep figuring out different</u> <u>totals</u>—but instead have the same numbers to work with every time. <u>This would allow</u> <u>more time for improving the store and</u> <u>insuring good customer service.</u></p>	<p>Clear recommendation.</p> <p>Seems to believe it is easy to know how many workers are needed. Recognizes at least some uncertainty about sales volumes. Recognizes potential impact of work schedules on employee satisfaction. Implicitly recognizes the distinction between fixed and variable costs.</p> <p>Seems to believe managers can perfectly foresee when slow periods will occur (lack of uncertainty).</p> <p>Re-casts the problem from classifying labor costs to “correcting” management so that costs are always fixed.</p> <p>Seems confused about what it means for costs to be classified in the budget versus the actual calculations of labor costs.</p> <p>Not clear who the student is talking about here—the manager or the other employees.</p> <p>00</p>

Critical Thinking Rubric

Student: Wake-Up Coffee #2

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Annotated Response of Student #3

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response (Key points were underlined by the rater.)	Assessment Comments
<p>There are <u>many uncertainties such as</u>: How to treat overtime, which employees are benefited, are employees salaried or hourly, and how are benefit costs incurred and handled? <u>Fixed costs are the simplest and least expensive to calculate. However, the fixed cost method may not be as accurate as variable cost method for budgeting.</u> I would like to <u>compare actual variable cost to budgeted variable cost for last year to estimate whether there is a potential for cost reduction by keeping more involved records.</u></p>	<p>Lists a number of uncertainties that affect the classification.</p> <p>Uses evidence from the case to provide a pro and con for each approach. Does not provide a recommendation. Implicitly demonstrates an understanding of the distinction between fixed and variable costs.</p> <p>Relates classification to the task at hand— budgeting.</p> <p>Begins to provide a strategy for obtaining additional relevant information, but then seems confused about how to use that information for classifying costs in the budget.</p>

Critical Thinking Rubric

Student: Wake-Up Coffee #3

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Annotated Response of Student #4

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response (Key points were underlined by the rater.)	Assessment Comments
<p>The costs of the labor <u>should be both fixed and variable</u>. The <u>trick is determining minimal staffing levels</u>. The managers, <u>through experience and data</u>, should decide on a <u>minimum hours all employees should work</u> or the manager could set a minimum number of employees needed regardless of sales volume. <u>These costs for labor are fixed the rest are variable</u>. The information that would be <u>nice to have is staffing levels over time (#people/hours worked) to establish fixed staff level</u>.</p>	<p>Recommends treating the costs as mixed.</p> <p>Identifies a key classification difficulty (implicitly recognizes uncertainty about classification).</p> <p>Recommends practical approach for managers to divide the cost between fixed and variable. Approach demonstrates an understanding of the distinction between fixed and variable.</p> <p>Would like historical information to improve estimation of fixed versus variable portions. Implicitly recognizes uncertainty about what amounts should be classified as fixed versus variable.</p> <p>Does not address pros and cons. Instead, goes for a “solution” and focuses only on it. This student might be operating at Level 4, but has not articulated his/her underlying thinking sufficiently to be classified at that level.</p> <p>There are some hints in the paper of slightly higher-level thinking, but it is not explicitly presented. The lack of elaboration by the student makes the assessment of this paper unreliable.</p>

Critical Thinking Rubric

Student: Wake-Up Coffee #4

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: Unable to Rate

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Annotated Response of Student #5

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response	Assessment Comments
<p>To: [professor] From: [Student], Finance Department Date: April 3, 200X Subject: Budget Recommendation for Treatment of Hourly Labor Costs</p> <p>It is my recommendation that hourly labor costs be divided into two subgroups of fixed hourly labor and variable hourly labor costs in next year’s budget to provide our company with more relevant information for future decision making purposes.</p> <p>Fixed Costs versus Variable Costs In order to determine whether hourly labor costs should be treated as fixed costs or variable costs next year, I analyzed how these costs behave based on decisions made by chain management about store activities. Variable costs are costs that change proportionately with changes in store activity levels. For example, in our stores, each cup of coffee sold costs Wake-Up Coffee \$1.00 to make. Thus, the total cost to us of coffee sold varies with the level of sales. This is an example of a variable cost. Our total variable costs increase if our level of activity (sales) increases, and decreases if our level of activity decreases.</p> <p>By contrast, total fixed costs do not change based on small changes in activity levels. For example, the amount of electricity used in a chain store does not vary based on changes in activity levels in the store, assuming that there are no changes in a store’s hours of operation. Additionally, my salary is a fixed cost in that it also remains constant regardless of small changes in activity levels in our stores. These are examples of items that comprise our total fixed costs, which remain constant despite small changes in levels of activity.</p> <p>Uncertainties regarding Hourly Labor Costs Based on the above definitions of fixed and variable costs, hourly labor costs seemingly have characteristics of each kind of cost, providing for uncertainty in how to treat the</p>	<p>Clearly states conclusion and primary criterion</p> <p>Clearly describes the distinction between fixed and variable, using appropriate examples.</p> <p>Relates uncertainty to the task at hand—budgeting</p> <p>Does not directly discuss uncertainties. Instead,</p>

<p>costs when budgeting.</p> <p>The company pays hourly labor costs based on the number of hours worked by hourly workers as determined by individual store managers who adjust the schedule, or total number of hours worked per week, based on sales volumes in their stores. Therefore, the number of hours that are worked (and thus cost to the company) change in accordance with the level of sales activity. In addition, the managers at each store may opt to send hourly workers home early if sales volumes are not as high as expected. This means that when sales levels decrease, the amount of hours worked also decrease proportionately should the managers decide to send workers home.</p> <p>However, there are a constant number of hourly workers that must be paid during hours of operation in order to operate each store. The numbers of hours worked by these workers do not change with sales activity, assuming that there are not changes in hours of operation. Thus, it seems that at least part of the hourly labor costs is fixed.</p> <p>It is additionally important to note that managers generally do not send workers home for fear of losing quality staff members. Thus, the hours worked do not change much when sales activity is lower than expected because it is rare that workers are sent home.</p> <p>Alternative Treatments</p> <p>We have the options to either maintain the current treatment of hourly labor costs as variable costs, change the treatment of such costs to fixed costs, or divide the hourly labor costs into variable and fixed and treat each as such.</p> <p>As previously stated, it is my recommendation that the hourly labor costs be divided into two subgroups: fixed hourly labor and variable hourly labor. The minimum hours of labor required simply to operate each store should be treated as fixed costs and budgeted for exactly as such. The remainder of labor hours should be budgeted for based on projected sales volume per store, thus treated in the budget as variable costs to our company as these hourly labor costs will be in accordance with total sales volume. By dividing these costs, we will be able to project a more accurate</p>	<p>provides a range of relevant information from the case as evidence that there is more than once potential classification. This indicates an understanding that uncertainties exist, but a lack of skill in discussing them.</p> <p>Clearly acknowledges alternative treatments.</p> <p>Provides recommendation, using evidence logically to support conclusion. Links the recommendation clearly to the underlying purpose— budgeting. Does not provide a con for the recommended solution (suggesting bias). Ignores, for example, information about reluctance</p>
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<p>budget that better predicts actual costs to our company in the upcoming year of operations. We will also be able to more readily determine how much labor costs actually do vary based on sales volumes and make adjustments to improve our use of efficient labor.</p> <p>If all hourly labor costs are treated as fixed in next year’s budget, it would likely require that we form strict policies for store managers to abide by in order to stay within budget. This may create a problem for us in that if one store enjoys significantly higher sales volume but is unable to increase the number of workers to accommodate, we may be sacrificing sales, quality, and even lose some good staff. Such strict labor budgeting may hinder growth. The upside of treating these costs as fixed is that we may avoid paying for some of the unnecessary hourly costs that we expense currently because we will be forcing managers to carefully budget their hours.</p> <p>If we continue treating these costs strictly as variable, we can budget for these costs based on our estimated sales volume and provide for growth or decline in sales and costs. It is likely that if sales increase, we will need to incur additional costs such as hourly labor to accommodate that growth. If these costs are able to change with sales volume, we will be providing a more accurate budget. However, it is important to recognize that these assumptions are based on continued growth. If a store falls below budgeted sales volume and all costs are treated as variable, budgeted costs will differ greatly from actual costs, which will be higher.</p> <p>The Importance of quality information in Budgeting In any case, it is difficult to determine how to budget for hourly labor costs because the future involves uncertainty. We cannot know whether sales volumes will be growing or declining except to base our predictions on past information, the current state of the market and consumer demand, and the current state of our company. Each of these factors was not provided, thus not considered in my analysis. Each are certainly additional information I would like to obtain in order to provide you with a more complete analysis of how to account for hourly labor costs in next year’s budget.</p>	<p>of managers to send workers home early.</p> <p>Focuses primarily on potential pitfall about fixed cost alternative (suggesting bias), relating the budgeting process to possible incentives for managers. Makes the unstated assumption that the budget commits managers to incur costs in a particular way. The student seems unaware that this assumption drives his/her conclusions.</p> <p>Provides both pros and cons for the variable cost alternative, but seems mono-focused on uncertainty about sales growth.</p> <p>Appropriately cites sales volume uncertainty as a reason for needing additional information, but is vague about how additional information might be gathered.</p>
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Critical Thinking Rubric

Student: Wake-Up Coffee #5

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 2.5

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset •Objectivity •Skepticism •Continuous learning	<ul style="list-style-type: none"> Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> Argues in a biased way Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> Attempts to provide a detached, balanced view from different perspectives Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> Approaches the problem with objectivity and appropriate skepticism Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> Recognizes that the problem is open-ended/ambiguous Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> Identifies the main purpose and multiple potential solutions Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> Identifies important embedded, subsidiary problem(s) Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> Focuses on calculations, definitions, and/or other “textbook” concepts Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> Discusses information that is relevant to the problem Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> Thoroughly and objectively analyzes relevant information from different viewpoints Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> Objectively analyzes the most important relevant information Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) Discusses limitations 	<ul style="list-style-type: none"> Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> Articulates priorities for improving the problem-solving approach and/or decision criteria over time

Annotated Response of Student #6

Underlines were inserted by the assessor and correspond to assessment comments.

Student Response	Assessment Comments
<p>Demonstrate—Fixed v Variable. Fixed costs do not vary with changes of activity within the relevant range. On the other hand, variable costs do change proportionally with activity level.</p> <p>Step 1—Uncertainties. Uncertainties regarding how to treat labor costs arise because of information not given in the case. In particular, it is not clear what question is most important to the company. Does the company care most about cost savings or ease of accounting or something else? A company in serious financial difficulty might make a different decision than a company with generous resources. Without a clear picture of the most important cost driver/object, it is much more difficult to make an appropriate choice. More requests for information follow in Step 4.</p> <p>Step 2—Alternative Treatments. Wake-Up Coffee (WUC) has three options in classifying its wage expense. It can treat labor as fixed, variable or mixed—a combination of fixed and variable. If WUC treats all labor costs as fixed, then the company benefits from reducing accounting paperwork and the company is more likely to always maintain adequate staff levels to serve and satisfy customers. On the other hand, this method does not motivate managers to aggressively control this cost and labor costs could become higher than necessary.</p> <p>Treating all labor costs as variable does encourage managers to control costs, but also contains drawbacks. For example, it may disenfranchise employees or lead to understaffing which would result in poor customer service.</p> <p>Finally, treating labor costs as mixed involves more estimates and calculations than either of the previous methods. However, it may more accurately reflect the existence of the fixed and variable components of the labor costs.</p>	<p>Clearly distinguishes between fixed and variable costs.</p> <p>Focuses on uncertainties related to lack of information in the case rather than on inherent uncertainties about the cost classification itself. However, demonstrates a sophisticated knowledge of uncertainties regarding management goals, which is important to the budgeting task.</p> <p>Clearly acknowledges 3 alternatives.</p> <p>Provides at least one pro and one con for each alternative. Implicitly prioritizes the relevant information in the case by focusing on pros and cons related to the goals of management—what the company would like to achieve through its budgeting process.</p>

Step 3—Recommendation. I believe that the most accurate accounting treatment is to consider hourly labor wages a mixed cost. The staff members required to just keep the store open should be treated as a fixed cost. These fixed costs will vary with the number of hours the store stays open, but will not change with increasing sales. The budget would then treat the extra labor for peak volumes as a variable cost. This cost would then change appropriately with sales activity. This method provides managers information about which hours to keep the stores open, but also encourages managers to control the extra cost of additional labor hours. This provides useful information for the cost drivers of both store hours and sales volume.

From a managerial perspective, this treatment frees managers from decisions out of their control (open hours for the store), but holds them accountable for their staffing decisions.

In my opinion, classifying all costs as either fixed or variable ignores that both components are present in this situation.

Step 4—Additional Information. There is a wide variety of information that would be useful in making a more accurate decision. Perhaps the most important piece of missing information is the business strategy. Is WUC trying to differentiate itself on price, service, or product? If low price is its competitive strategy, then variable costs might be most appropriate because this will encourage managers to reduce labor as much as possible. WUC would then reduce labor at the expense of longer customer lines and less cleanliness to reduce costs. If the company is focused on service, then WUC can ill afford to be understaffed or to lose trained and motivated employees. WUC might then be better off treating wages as fixed and ensure that it always maintains a generous amount of labor on hand. Finally, if WUC is focused mainly on delivering excellent product (i.e. premium coffee), then the accounting treatment of labor is not as important.

Clearly and logically explains reasons for recommendation.

Identifies and links recommendation to two key goals—budget accuracy and motivating desirable manager behavior. However, does not clearly articulate trade-offs made with other potentially important factors.

Does not appear to recognize legitimacy of alternative potential treatments. Bias?

Provides arguments for alternative cost classifications under different long-term business strategies for Wake-Up Coffee. This suggests the ability to evaluate the problem objectively, to weigh factors differently under different circumstances, and to consider long-term issues.

<p>In addition to the strategic direction of WUC, it would be useful and relevant to know the materiality of the decision. If labor hours are not a significant cost, then the actual treatment doesn't matter as much and WUC should select fixed treatment, which is the simplest and least labor-intensive.</p> <p>As was mentioned above, knowledge of the budget's purpose and the responsibilities of managers would be useful. I made the assumption above that managers don't control store hours, but this may not be correct. If managers are going to be responsible for their budget, it must reflect the items that they can actually exercise control over.</p> <p>Finally, other details such as the cost of hiring, training and replacing workers could be useful. This would make it easier to determine whether to risk employee dissatisfaction by treating labor as variable and thus encouraging managers to continually tweak work schedules.</p>	<p>Provides another circumstance under which the conclusion could change.</p> <p>Articulates key assumption made and describes its impact on recommendation. Acknowledges uncertainty about the assumption.</p> <p>Provides additional factors that might influence decision, and demonstrates that relevant information in the case that was not explicitly discussed above was not ignored.</p>
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Critical Thinking Rubric

Student: Wake-Up Coffee #6

Rater: Susan Wolcott

Possible Overall Ratings: U (Unable to rate), 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0

Overall Rating: 5.0

	Level 1	Level 2	Level 3	Level 4	Level 5
Thinking Mindset <ul style="list-style-type: none"> • Objectivity • Skepticism • Continuous learning 	<ul style="list-style-type: none"> • Seeks a single, “correct” answer to an open-ended problem 	<ul style="list-style-type: none"> • Argues in a biased way • Acknowledges but discounts other viewpoints 	<ul style="list-style-type: none"> • Attempts to provide a detached, balanced view from different perspectives • Questions the quality of information and/or assumptions 	<ul style="list-style-type: none"> • Approaches the problem with objectivity and appropriate skepticism • Provides reasonable justification for assumptions used 	In addition to Level 4: <ul style="list-style-type: none"> • Seeks continuous learning and improvement
Identify	<ul style="list-style-type: none"> • Does not recognize uncertainty beyond temporary lack of information 	<ul style="list-style-type: none"> • Recognizes that the problem is open-ended/ambiguous • Identifies at least one uncertainty relevant to the problem 	<ul style="list-style-type: none"> • Identifies the main purpose and multiple potential solutions • Explores the effects of uncertainties 	In addition to Level 3: <ul style="list-style-type: none"> • Identifies important embedded, subsidiary problem(s) • Identifies and explores important uncertainties 	In addition to Level 4: <ul style="list-style-type: none"> • Identifies strategies for addressing uncertainties and/or risk in the future
Analyze	<ul style="list-style-type: none"> • Focuses on calculations, definitions, and/or other “textbook” concepts • Analyzes information as if there are no uncertainties 	<ul style="list-style-type: none"> • Discusses information that is relevant to the problem • Partially analyzes alternatives, focusing on information supporting own viewpoint 	<ul style="list-style-type: none"> • Thoroughly and objectively analyzes relevant information from different viewpoints • Thoroughly discusses the pros and cons of viable alternatives 	<ul style="list-style-type: none"> • Objectively analyzes the most important relevant information • Summarizes the most important pros and cons of viable alternatives 	In addition to Level 4: <ul style="list-style-type: none"> • Explores ways to gather higher quality and/or more relevant information in the future
Conclude and Anticipate	<ul style="list-style-type: none"> • Chooses a conclusion based on perceived correctness and/or expert opinion 	<ul style="list-style-type: none"> • Provides arguments in favor of conclusion 	<ul style="list-style-type: none"> • Avoids reaching a biased opinion (e.g., reaches no conclusion or offers a conclusion with little or no justification) • Discusses limitations 	<ul style="list-style-type: none"> • Develops and applies appropriate decision criteria for reaching a well-reasoned conclusion • Describes and provides recommendations for important limitations and/or implementation issues 	In addition to Level 4: <ul style="list-style-type: none"> • Articulates priorities for improving the problem-solving approach and/or decision criteria over time