

Exploring the Implications of Student Characteristics

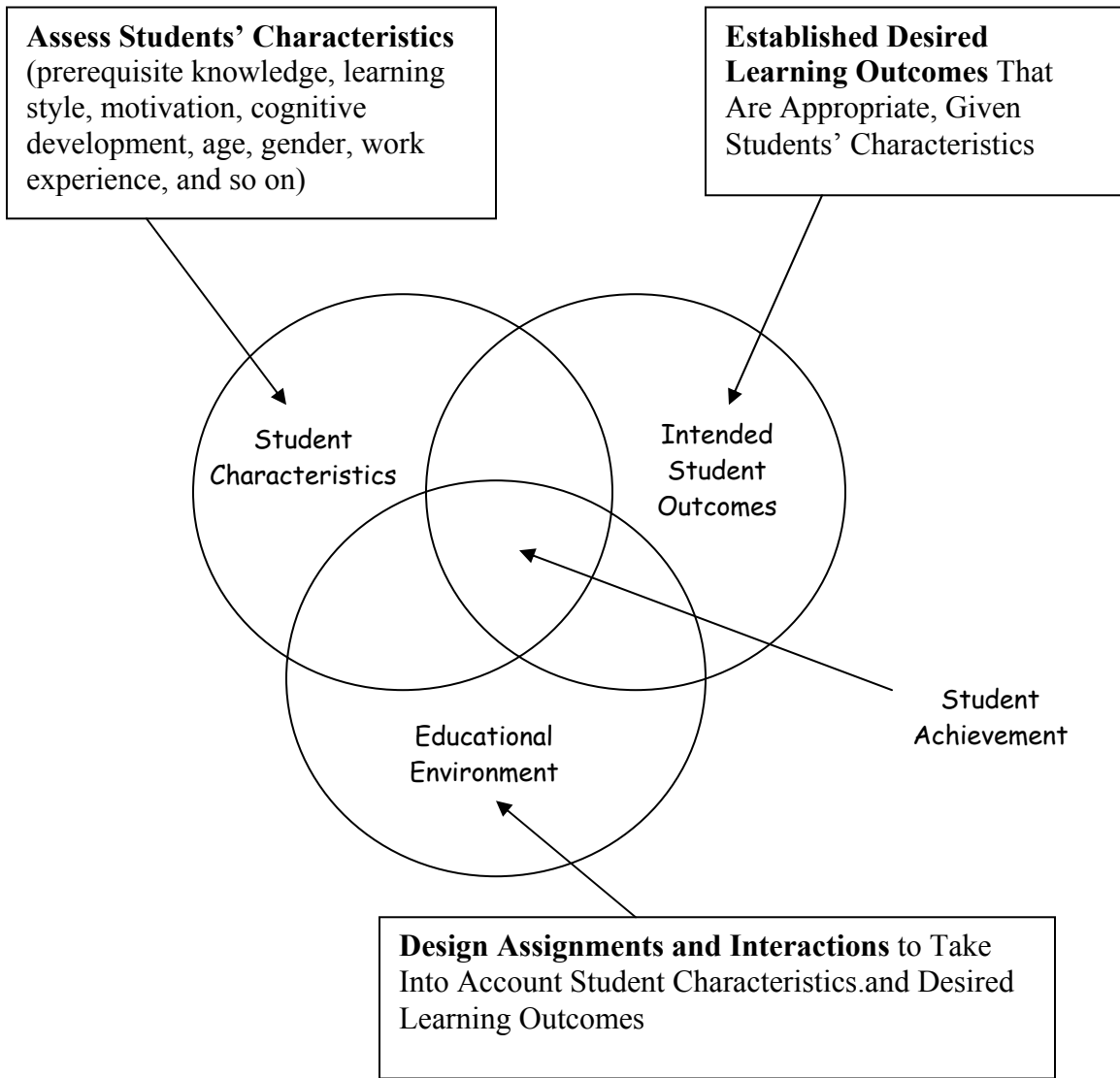
American Accounting Association
CPE Workshop, August 14, 2002

Presenters:

Tracey Sutherland
American Accounting Association
tracey@aaahq.org

Susan Wolcott
WolcottLynch Associates
swolcott@WolcottLynch.com

Education Model



Adapted from: Rama, D. V., S. P. Ravenscroft, S. K. Wolcott, and E. Zlotkowski. (2000). Service-learning outcomes: Guidelines for educators and researchers. *Issues in Accounting Education* 15(4), pp. 657-692.

A Few of the Things We Know About Today's College Students

- The percentage of HS graduates 16-24 enrolled in college rose from 46.6% in 1973 to 65% in 1996
- Total numbers of students enrolled in public 4-year colleges and public 2-year colleges are practically identical now
- Students spend only about half as much time preparing for class as teachers say is necessary, and 20% of all students frequently come to class unprepared
- The majority of seniors do internships (72%) and community service and volunteer work (67%)
- Incoming students are confident in their abilities – for example 41% of students in 1997 rated themselves “above average” writers (compared with 27% in 1966)
- Academic disengagement is on the rise -- 36% of freshmen (compared to 26% in 1985) reported being frequently “bored in class” during their senior year of HS
- 45% of all first-year students "never" discussed ideas from their classes or readings with a faculty member outside of class.
- Women students are half as likely as men to rate their computer skills as “above average” or “top 10%”
- Political engagement of students is at an all time low. Only 28% of 2000's entering freshmen are interested in keeping up to date with political affairs

*Data drawn from resources listed in the
Listening to Student Voices section of this handout.*

Listening to Students' Voices

Listening to Student Voices

Sources of information on what students tell us about their experiences in college:

- How College Affects Students (Pascarella and Terenzini)
- Cooperative Institutional Research Project (CIRP)
(<http://www.gseis.ucla.edu/heri/cirp.htm>)
- National Survey of Student Engagement
(<http://www.iub.edu/~nsse/>)
- Essential Demographics of Today's College Students (AAHE, 1998)
- Seven Principles for Excellence in Undergraduate Education (Chickering and Gamson)
- The Harvard Assessment Project (Richard Light)

Today's goals:

In 1986, Richard Light was asked a question that changed his life. Since then he has conducted more than 400 interviews and traveled to 90 college campuses seeking to answer it. The question was "How can we assess the effectiveness of undergraduate teaching, advising, and quality of life?" Derek Bok, then Harvard's president, asked the question, sending Light and his comrades on a 15-year mission of discovery that resulted in the "Harvard Assessment Seminars" and their reports. In 1991, as Harvard's new president Neil Rudenstine expanded the project's agenda, inviting Light to expand the project to add exploration of educational outcomes of racial and ethnic diversity on campus.

Light, a professor of statistics in the Graduate School of Education and at the Kennedy School of Government at Harvard, now has answers - answers he expects will improve teaching and learning not just at Harvard, but at colleges across the country. His book, *Making the Most of College: Students Speak Their Minds*, shares perspectives of students and recommendations for how institutions and students can make the most of their college learning experiences. Today we are going to take a look at some of the recommendations students have made in the extensive interviews for this project, exploring their benefits, and potential solutions to any barriers there may be to their implementation.

To learn more about Richard Light's most recent findings:

Light, R.J. (2001). *Making the most of college: Students speak their minds*. Cambridge, MA: Harvard University Press.

Listening to Students' Voices About Their Learning Experiences

Below are just a few findings from Richard Light's *Making the Most of College: Students Speak Their Minds*. As you read through them, take few minutes to respond to the questions on the next page.

As faculty we spend 90% of our discussions about teaching talking about content and curriculum; rarely do we touch on the topic of homework. Students spend 12-18 of the 168 hours available in a week in class, leaving significant time shaped by the nature of homework assignments and other activities. Results of the study were eye-opening – how students study and do their homework outside of class turned out to be a far stronger predictor of engagement and learning than particular details of their instructors' teaching styles in class. The design of homework really matters. Specifically, students who study outside of class in small groups of 4 to 6, even just once a week, are more successful.

The relationship between the amount of writing for a course and students' level of engagement – whether measured by time spent on the course, the intellectual challenge it presents, or students' interest in the class – is stronger than the relationship between students' engagement and any other course characteristic. Courses requiring more than 20 pages of final-draft writing per semester draw nearly twice as much of students' time as courses with no formal requirement (avg. of 11 hrs/week versus 6 hrs/week). Holding the volume constant, courses that require more, shorter papers demand more time from students. The pattern is strong – students spend about 40% more time on average when asked to do four five-page papers than when asked to write one 20-page paper.

Students say they work harder and think more critically when their papers are written for an audience of fellow students or will in some way be reviewed or evaluated by fellow students.

Students are overwhelmingly positive about the value of racial and ethnic diversity, with white students being the most positive. The crux of students' observations about learning from people with different backgrounds is that college offers a fundamentally different opportunity from most other environments – because incoming students share some key assumptions and values related to the importance of education. Schools that manage that environment are successful; those that undercut or ignore the environment stifle the benefits of a diverse campus.

Dick Light reports that he expected students to prefer courses in which they could work at their own pace, courses with relatively few quizzes, exams, and papers until the end of the term. But he was wrong. A large majority of students say they learn significantly more in courses that are highly structured, with relatively many quizzes and short assignments. Crucial to this preference is getting quick feedback from the professor – ideally with an opportunity to revise and make changes before receiving a final grade. In contrast, students are frustrated and disappointed with classes that require only a final paper. How can we ever improve our work, they ask, when the only feedback comes after a course is over?

Please make notes and answer the questions on the worksheet that follows.

Discussion Questions: Student Voices

1. Which one of the findings from the *Making the Most of College* studies on the previous page do you find most surprising or interesting?
2. Are there barriers to addressing the implications inherent in that finding for how classes are developed and taught? If so, what kinds?
3. Can you think of possible ways those barriers could be addressed?

Learning Styles

Learning Styles

Examples of Learning Style Frameworks

- VARK – Visual, Aural, Read/Write, Kinesthetic
- Field-dependence/Field independence theory
- Type theory using the Myers-Briggs Type Indicator
- David Kolb’s learning style dimensions

Background:

Extensive information about learning styles can be found throughout the literature in education, psychology and the neurosciences. Some theories and studies focus on cultural issues and how they relate to differences in approaches to learning; others address physiological aspects of learning, and some are personality-based frameworks for learning.

Today’s goals:

For the purposes of this workshop we will discuss the four modes of learning defined by David Kolb in his learning styles framework. Our objective is to explore the varied mechanisms students use to connect with new information, and hopefully make it part of what they know and understand. Thus the desired outcome of this part of the workshop is not so much mastering all the details of Kolb’s theoretical framework, but rather that we think about how differently our students approach the tasks we give them, and the implications of those differences for the ways we design learning environments and experiences.

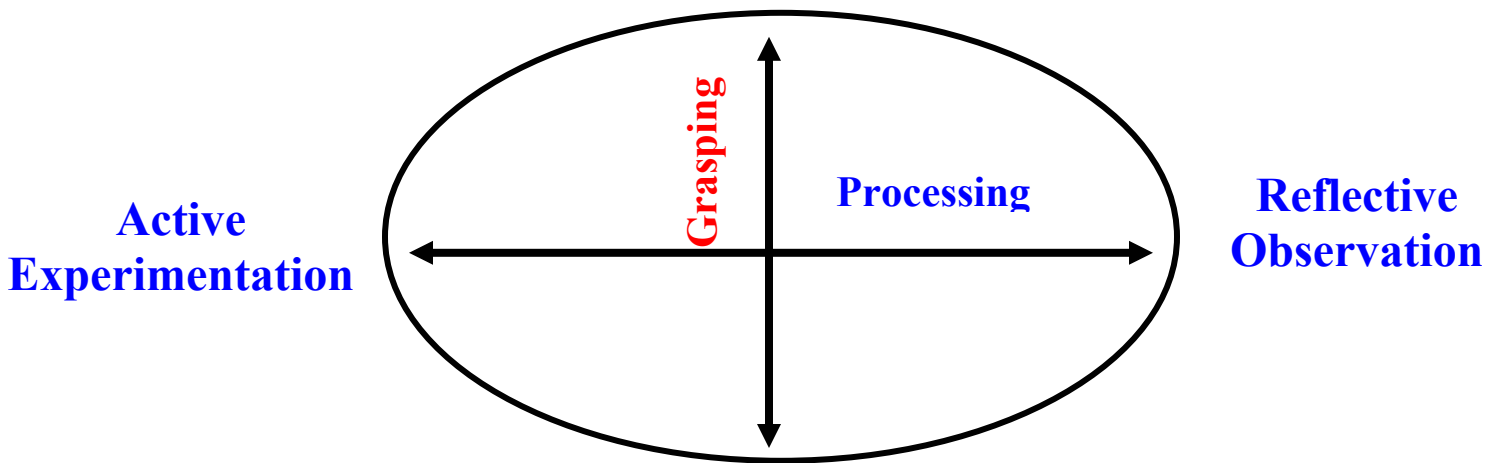
To learn more about David Kolb’s theory:

Kolb, D.A. (1984). *Experiential Learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Learning Styles

Kolb's Experiential Learning Model

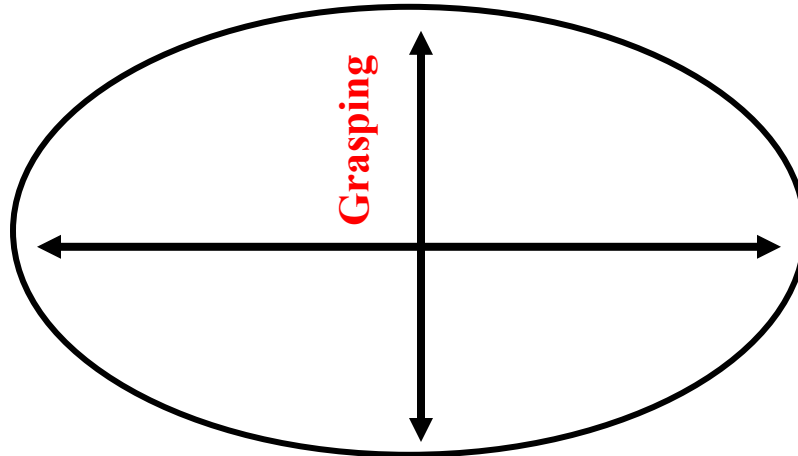
Concrete Experience



Abstract Conceptualism

Kolb's Experiential Learning Model

Concrete Experience



Abstract Conceptualism

Concrete Experience (CE)

Fully involved, without bias in new experiences

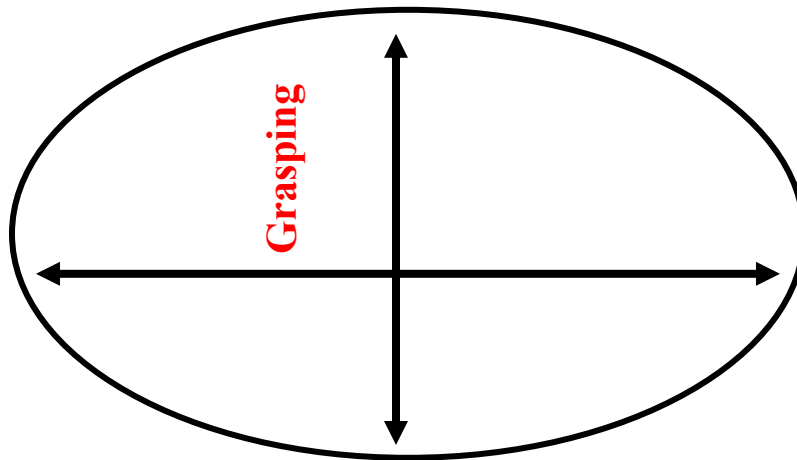
Focus on involvement in experiences -- addressing human situations in a personal way

Concern with the uniqueness and complexity of present reality -- not theories and generalizations

Strong in unstructured situations relating to people, and involvement in real situations

Kolb's Experiential Learning Model

Concrete Experience



Abstract Conceptualism

Abstract Conceptualization (AC)

Create concepts to integrate observations
into sound theories

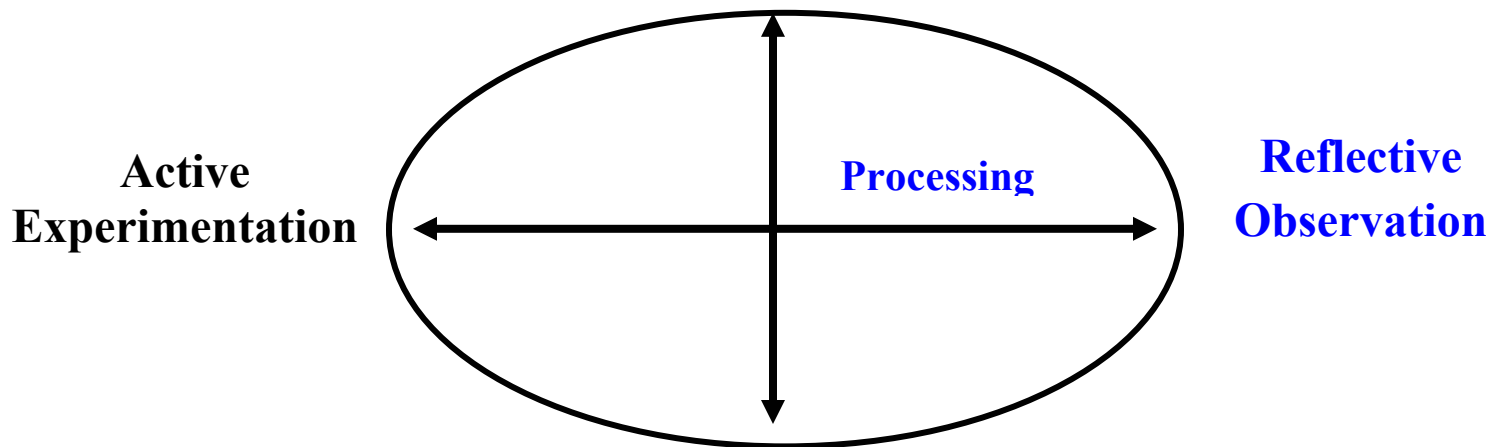
Focus on using logic, ideas and concepts

Build general theories as opposed to intuitively
understanding unique, specific situations

Strong in systematic planning, manipulation of
abstract symbols and quantitative analysis

Skilled at analyzing ideas

Kolb's Experiential Learning Model



Reflective Observation (RO)

Observe and reflect on experiences from many perspectives

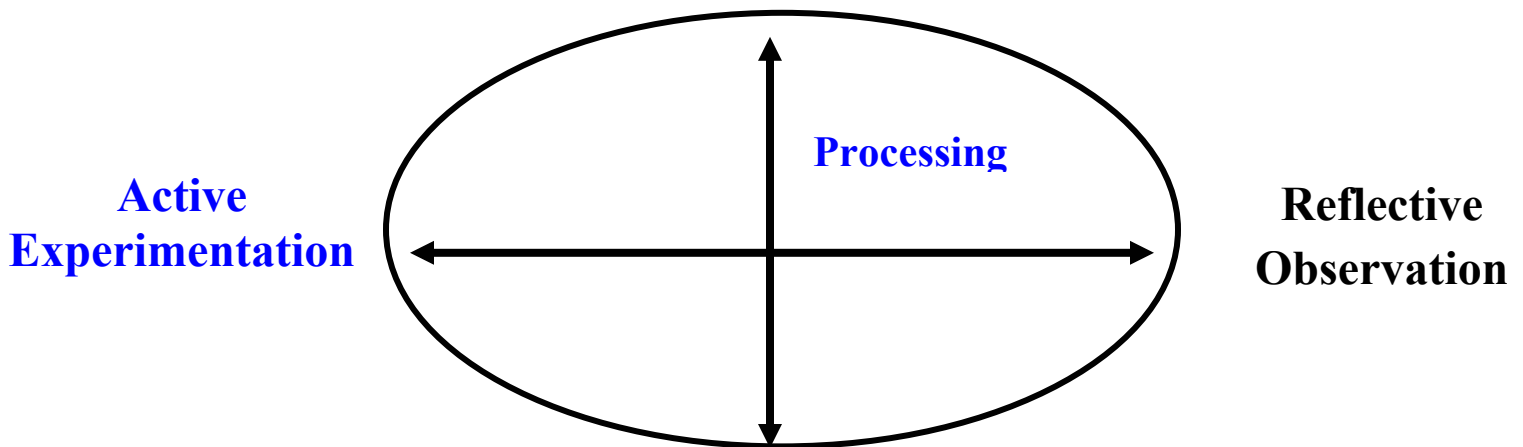
Understand ideas and situations by observation/impartial description

Emphasize understanding as opposed to practical application

Emphasize reflection as opposed to action to look for absolute truth

Skilled at seeing meaning, implications and different perspectives

Kolb's Experiential Learning Model



Active Experimentation (AE)

Use theories to make decisions and solve problems

Focus on actively influencing people and changing situations.

Emphasize practical applications as opposed to reflective understanding

Pragmatic concern with what works as opposed to absolute truth

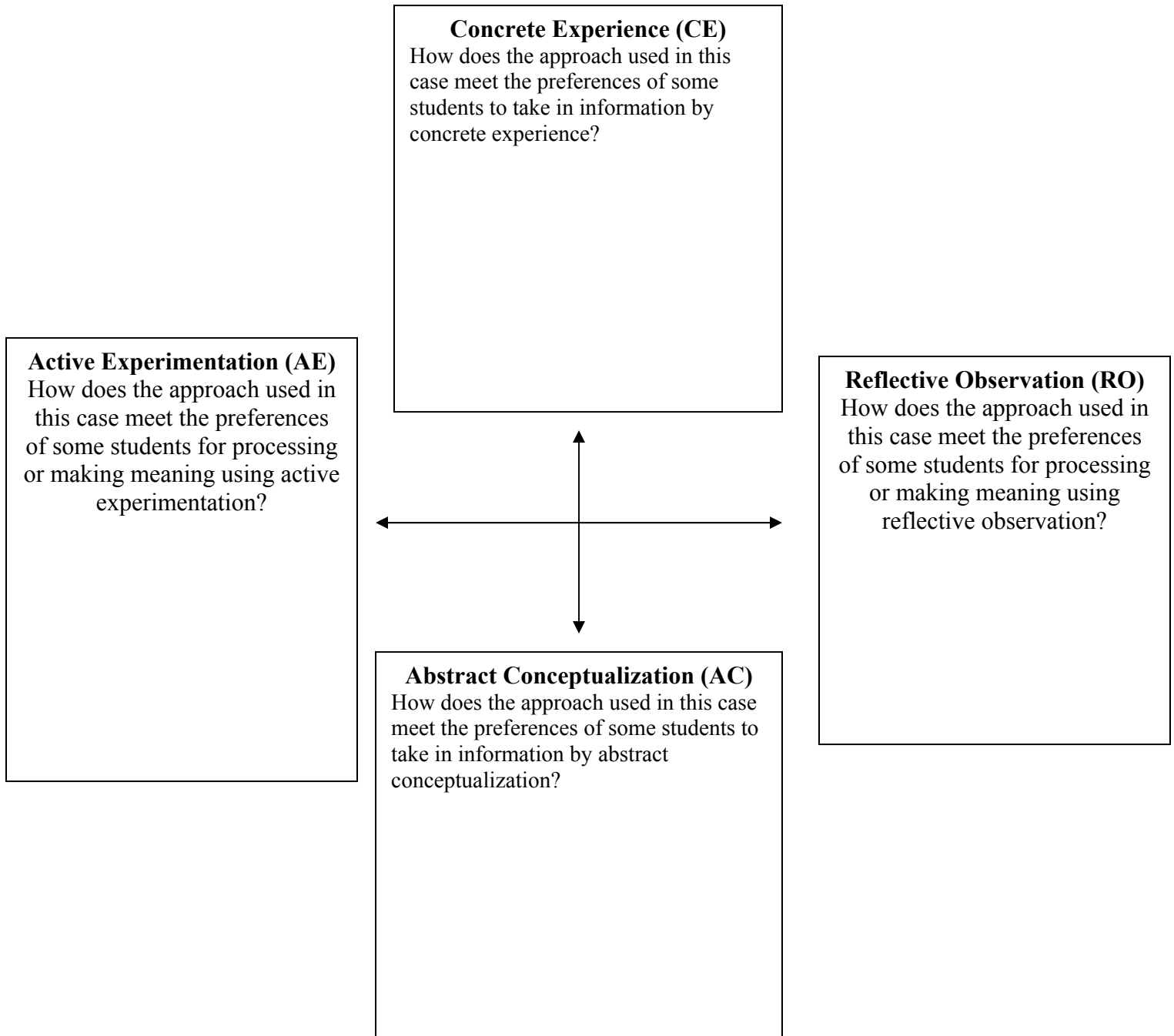
Emphasis on doing rather than observing

Skilled at getting things accomplished

Learning Styles Activity Sheet

Teaching Case: One History Professor's Approach

1. While reading the case, consider how the approach being used in the class might address Kolb's learning styles modes. Note examples in the appropriate positions below.

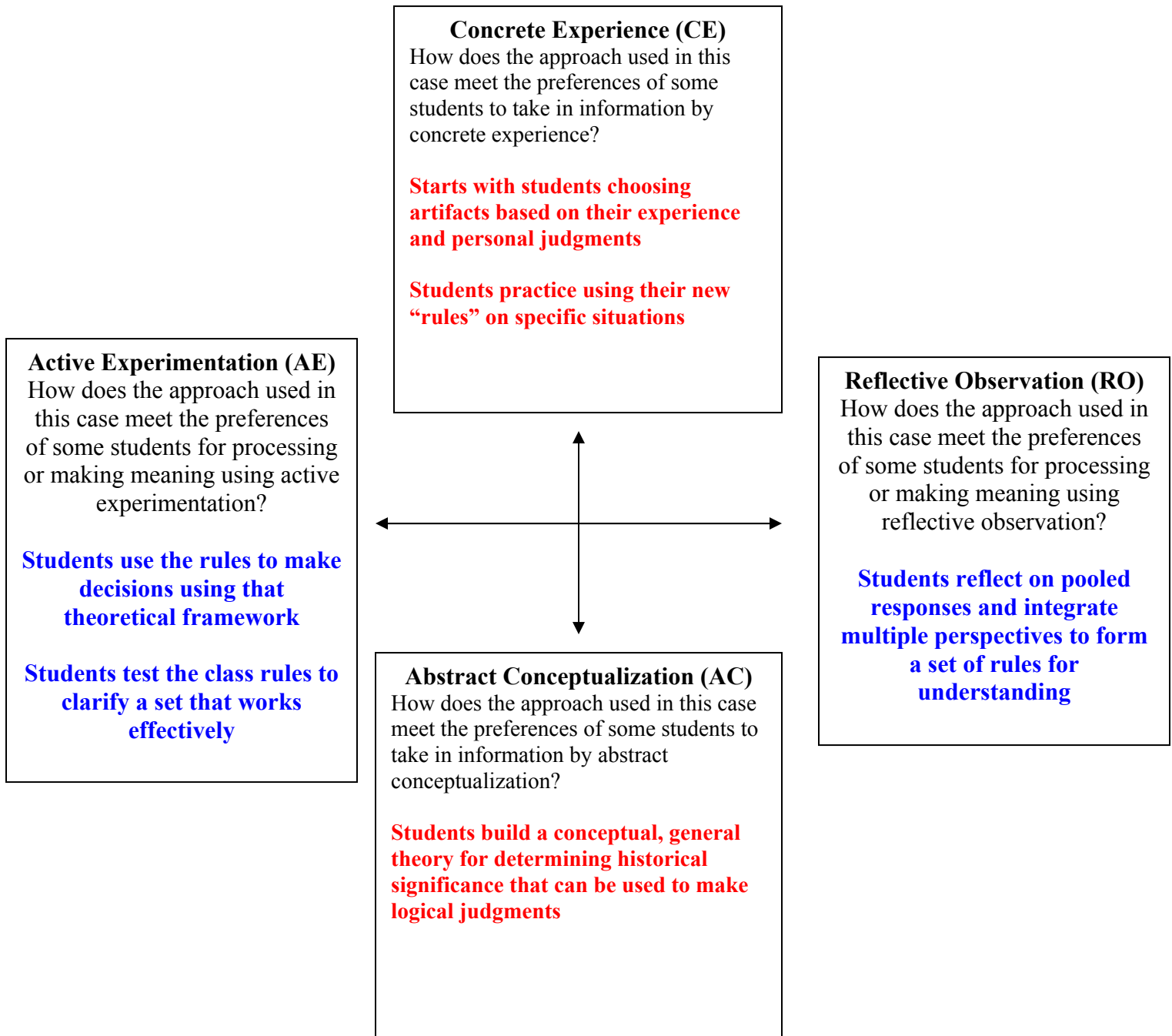


2. How could the instructor consider changing the class to better meet students' learning style preferences?

Learning Styles Activity Sheet - Solution

Teaching Case: One History Professor's Approach

1. While reading the case, consider how the approach being used in the class might address Kolb's learning styles modes. Note examples in the appropriate positions below.

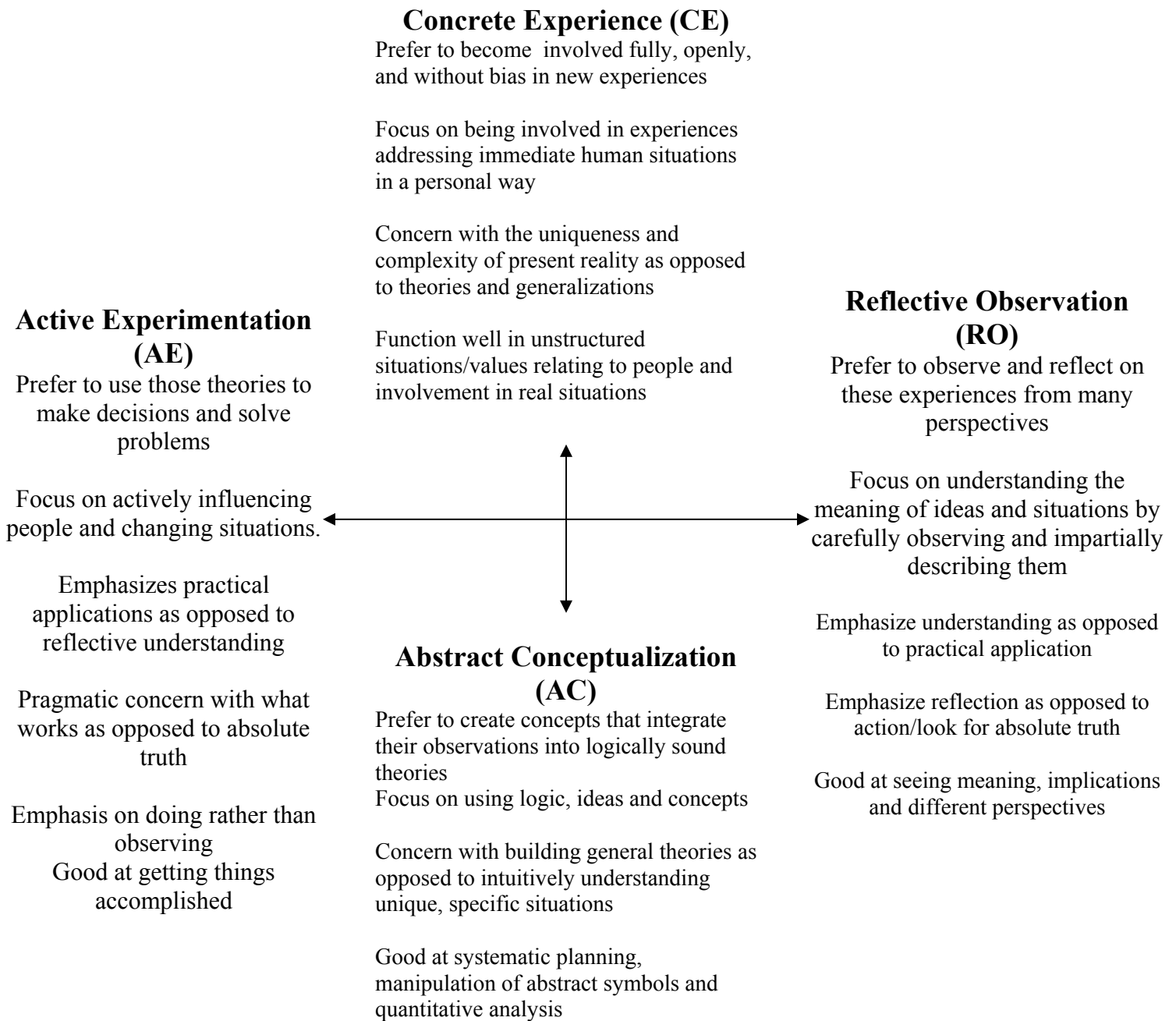


2. How could the instructor consider changing the class to better meet students' learning style preferences?

Learning Styles

Kolb's Experiential Learning Model

Characteristics of each learning style



Teaching Case: Evidence and Education Policy

In a class on education policy Lu, a first-year student, repeatedly castigated the political leadership in her city and her state for not spending more money on public education. She brought this up several times. She had been a tutor in the middle school back at home and she had been frustrated by the lack of support for the school's needs. Once she brought this opinion up in a discussion of declining measures of student performance. She held the reduced spending responsible. Most other members of that seminar agreed with her. Everyone spoke up. Everyone had an opinion.

Lu was sure her professor had an opinion too, but he started out by inviting all the students to reserve judgment on this question until they had some concrete evidence. "What evidence," he asked, "could you gather in the real world that would get you to change your minds?" Lu couldn't really think of a good answer. Then Dr. Ebbers asked a more specific question: "Would you find the results of a simple correlational study compelling, if you learned school districts that spend more have students who perform better on most academic measures?"

That question split the class in half. Half agreed they would find such results compelling. The other half demurred, pointing out that correlation does not necessarily imply causation. Maybe the reason students in richer districts do better in school is that they grow up in richer families, or have better-educated parents, or have more books at home and in their better-stocked school. This class then engaged in a vigorous debate about the merits of observational, cross-sectional data for policy decisions, versus experimental data.

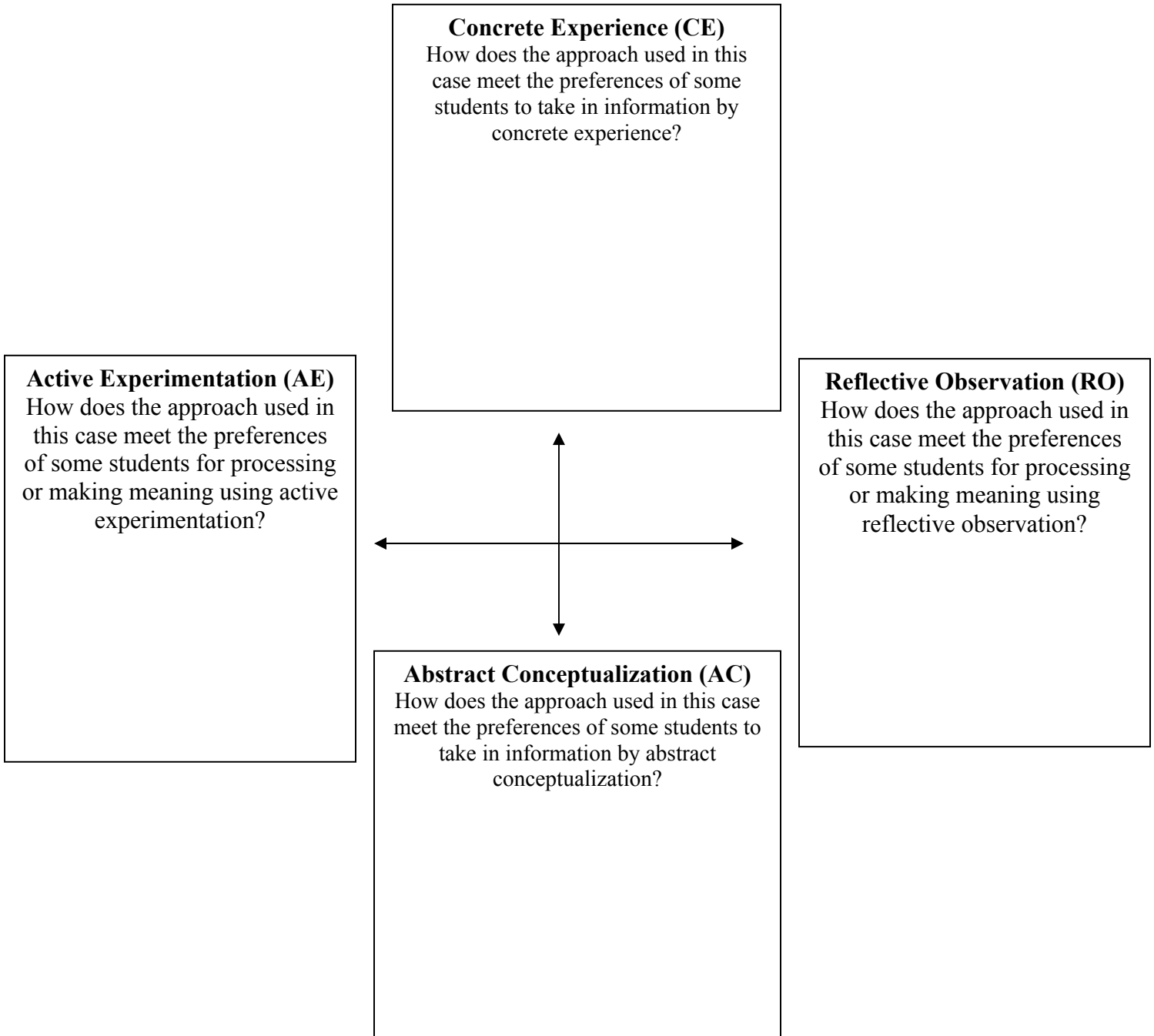
For Lu the discussion opened a whole new way of thinking. As a result, she went on to take four courses in statistics and research design and began planning to go to graduate school. About the effect of Dr. Ebbers class on her plans, she said:

Whether or not he intended it, that professor taught me during my freshman year that my ideas about spending money on schools are very nice, but do not make for compelling public policy. Dr. Ebbers' big message is that good intentions based on your experience and values are a wonderful place to begin, but that when crunch time comes in the real world, evidence will trump good intentions every time. I had never thought of all my work in that way before – until he pressed me – and everyone else in our seminar to think in those terms.

Learning Styles Activity Sheet

Teaching Case: Evidence and Education Policy

1. While reading the case, consider how the approach being used in the class might address Kolb's learning styles modes. Note examples in the appropriate positions below.



2. How could the instructor consider changing the class to better meet students' learning style preferences?

Teaching Case: Considering Diversity

Janine, an African American junior, stresses the importance of atmosphere or tone in the classroom:

I can't say enough about the importance of setting a tone of good will – assumptions of good will in terms of diversity issues. And this is where my first year Lit. professor, Chris Robins, was a big-time success from the very beginning

In my case, the professor was getting us to introduce ourselves during the first class. There were about 25 of us, of varying backgrounds and races. I remember it so well because after some friendly introductions she looked right at me and asked with a smile, "Do you prefer to be called African American or black?" I certainly did not anticipate such a question, but responsible by simply saying "African American." Then the teacher asked, "Would you feel offended if another student, not knowing your preference, referred to you as black?" Of course I told her I wouldn't be offended at all. How could a stranger possibly know my preference ?

Then the teacher turned to a Latina woman and asked about being called Latina as opposed to Hispanic. She moved on to ask a Chinese American, born here in the states, how he would feel if another student referred to him simply as an "Asian." She even asked a white guy whether he preferred white or Caucasian. And each time after she got an answer, she followed up by asking whether we would be offended if someone used the other, less preferred word. Would we assume that new person was a racist, or thoughtless, because of how they referred to us?

It took us a while to catch on, but soon it became obvious that Dr. Robins was just conveying a simple idea. She was demonstrating by her own behavior that she didn't know what each of us prefers to be called, but that she hopes we will assume she means well. And that it follows we will also assume other students on campus mean well when they do the same thing.

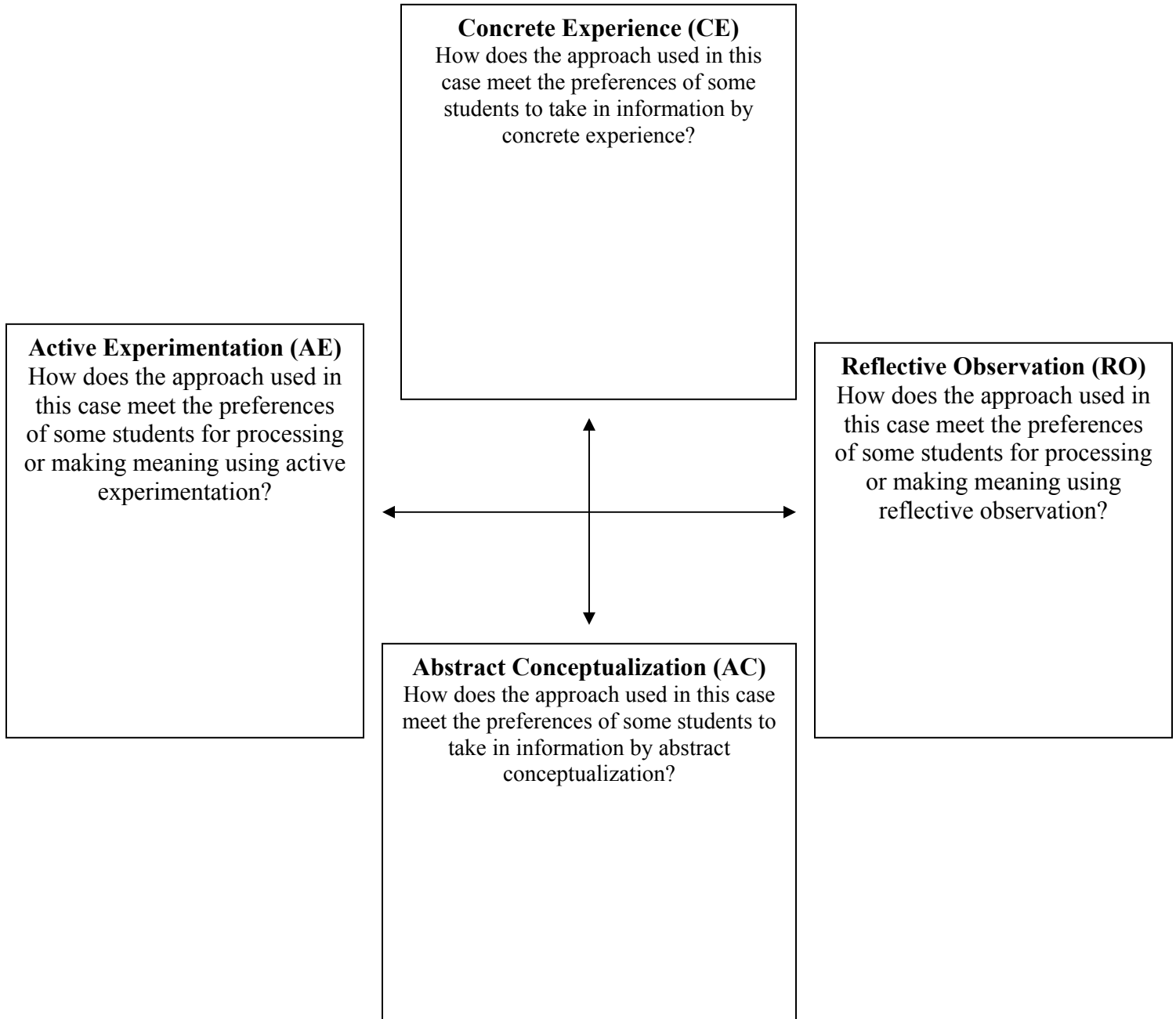
I think she did something very important. She got us all to think how we would react to different ethnic or racial descriptors. Her point is that each of us must choose. And much of our next four years would depend on the choice we make. We can each choose to assume good will from all other students, or we can bring in all the hostilities and awkwardnesses from the outside world.

I am really glad this happened during the first week. It reminded me about assuming good will among my fellow students, and I think others felt the same way. In fact, I am certain they did, since eight of us still get together for meals when we can.

Learning Styles Activity Sheet

Teaching Case: Considering Diversity

1. While reading the case, consider how the approach being used in the class might address Kolb's learning styles modes. Note examples in the appropriate positions below.



2. How could the instructor consider changing the class to better meet students' learning style preferences?

Instructional Activities That May Support Different Learning Styles

CONCRETE EXPERIENCE

Laboratories

Observations

Primary text reading

Simulations/games

Field work

Trigger films

Readings

Problem sets

Examples

REFLECTIVE OBSERVATION

Logs

Journals

Discussion

Brainstorming

Thought questions

Rhetorical Questions

ACTIVE EXPERIMENTATION

Simulations

Case Studies

Laboratory

Field Work

**Hands-on/ practical
projects**

Homework

ABSTRACT CONCEPTUALIZATION

Lecture

Papers

Model building

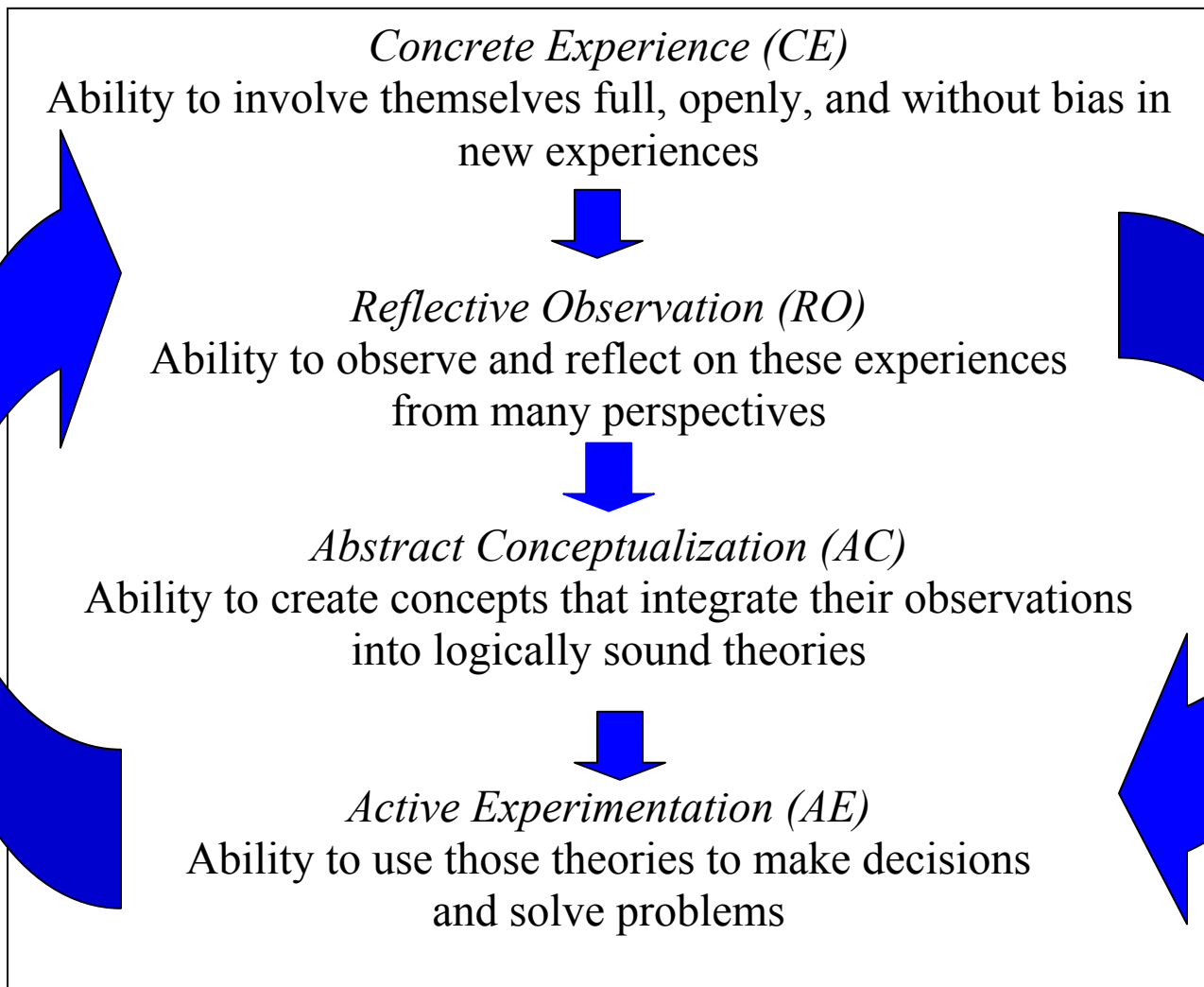
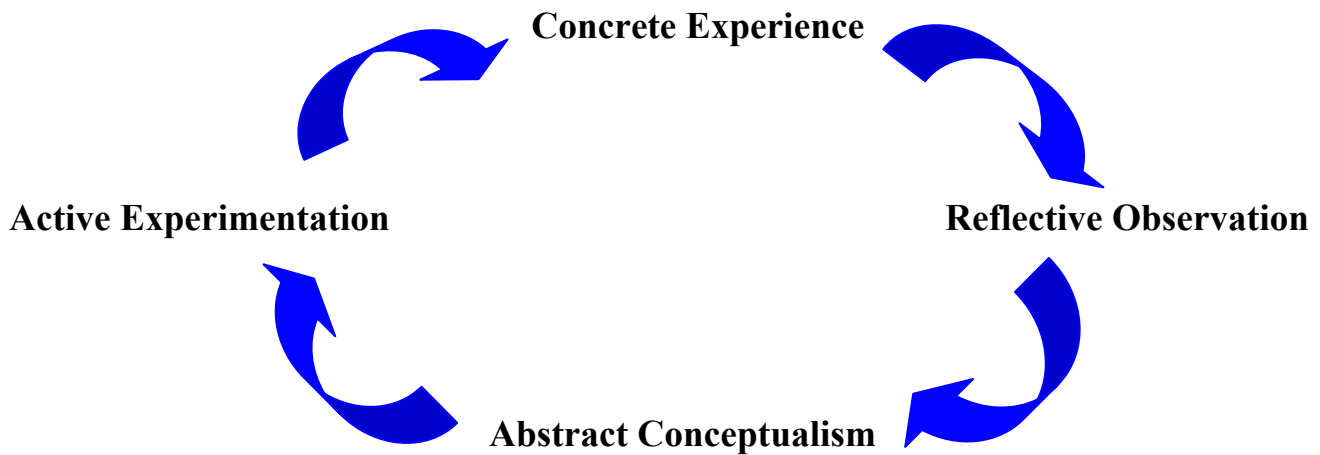
Projects

Analogies

Theory exploration/development

The Learning Cycle

Four-Stage Model



The Experiential Learning Model

The experiential learning model represents an integration of many of the intensive lines of research on cognitive development and cognitive style. The result is a model of the learning process consistent with the structure of human cognition and the stages of human growth and development. It conceptualizes the learning process in such a way that differences in individual learning styles and corresponding learning environments can be identified.

The theory is called *experiential learning* for two reasons. First, this term ties the theory historically to its intellectual origins in the social psychology of Kurt Lewin. Second, it emphasizes the important role that experience plays in the learning process. The core of the model is a simple description of the learning cycle – of how experience is translated into concepts, which in turn are used as guides in the choice of new experiences. Modes used to take in information and to transform it into knowledge or learning are also part of the model.

The Learning Cycle

Kolb conceives of learning as a four-stage cycle. Each step of which must be present for learning to occur most completely. The cycle begins with the learner's personal involvement in a specific experience (Concrete Experience). The learner reflects on this experience from many viewpoints, seeking to find its meaning (Reflective Observation). Out of this reflection the learner draws logical conclusions (Abstract Conceptualization), and may add to his or her own conclusions the theoretical constructs of others. These conclusions and constructs guide decisions and actions (Active Experimentation) that lead to new concrete experiences and the cycle is repeated (Svinicki, 1994, p. 308).

Immediate concrete experience is the basis for observation and reflection. A student uses these observations to build an idea, generalization, or "theory" from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences.

Learning Styles

Learners would ideally have four different kinds of abilities:

- Concrete Experience (CE)
The ability to involve themselves fully, openly, and without bias in new experiences
- Reflective Observation (RO)
The ability to observe and reflect on these experiences from many perspectives
- Abstract Conceptualization (AC)
The ability to create concepts that integrate their observations into logically sound theories
- Active Experimentation (AE)
And the ability to use those theories to make decisions and solve problems.

A closer examination of the four-stage model shows that learning requires abilities that are polar opposites, and that the learner, as a result must continually choose which set of learning abilities

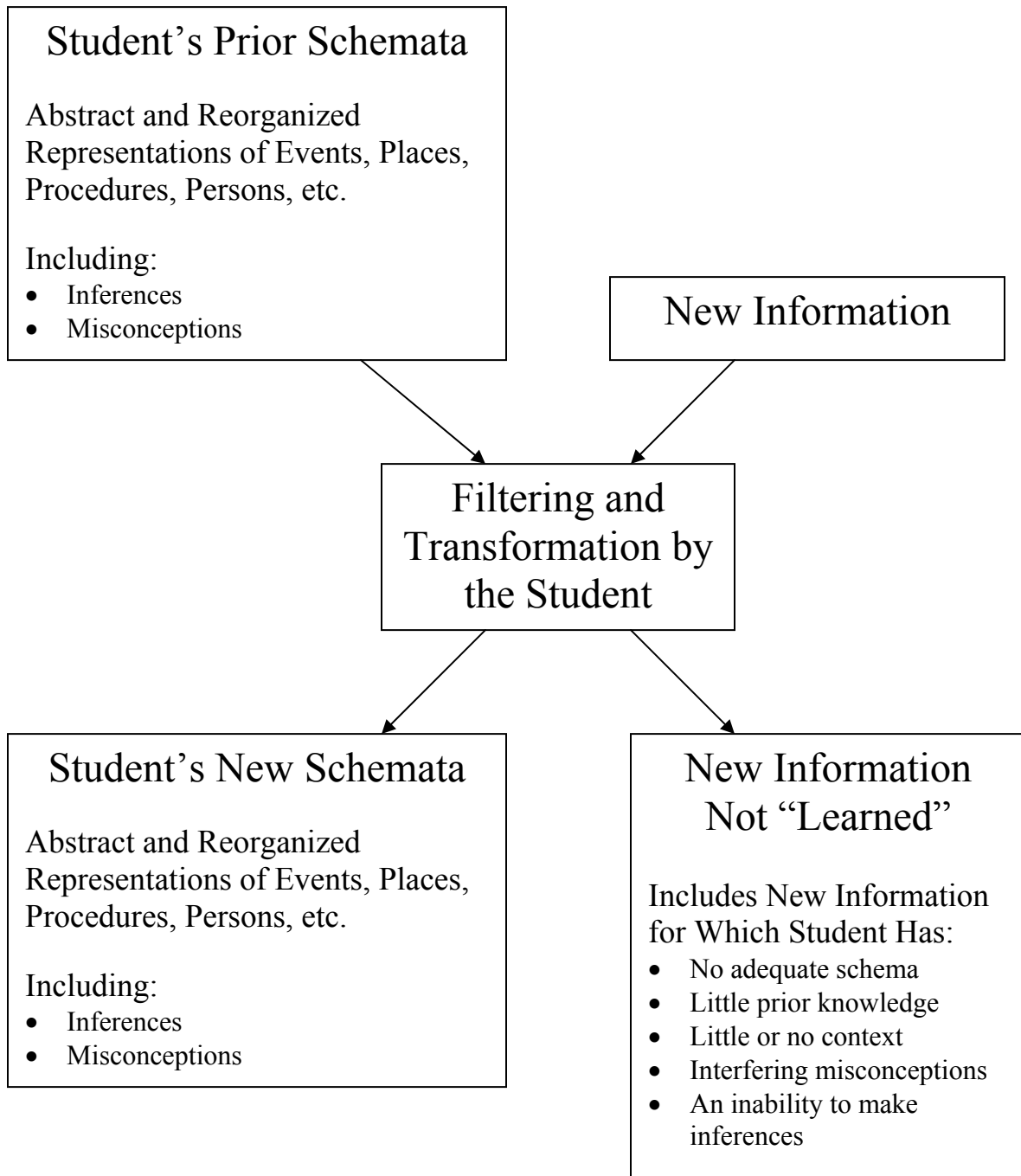
to bring to bear on various learning tasks. More specifically, there are two primary dimensions to the learning process. The first dimension (vertical axis) represents the concrete experiencing of events, at one end, and abstract conceptualization at the other. The second dimension (horizontal axis) has active experimentation at one extreme and reflective observation at the other.

It is important to stress that these types should not become stereotypes. Perhaps the greatest contribution of research on cognitive style has been the documentation of the diversity and complexity of cognitive processes and their manifestation in behavior.

From David Kolb (1994). *Learning Styles and Disciplinary Differences*. In Feldman, K. and Paulson, M. B. (Eds.) *Teaching and Learning in the College Classroom*, Needham Heights, MA: Simon & Schuster, 151-164.

Schema Theory

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, 36-56.

Cognitive Development

Cognitive Development

Examples of Cognitive Development-Based Frameworks:

- Perry Scheme
- Bloom's Taxonomy (Based on Piaget)
- Women's Ways of Knowing (Belenky, Clinchy, Goldberger & Tarule)
- Steps for Better Thinking (Based on King & Kitchener's Reflective Judgment Model)

Useful Definitions: (from Wolcott and Lynch, 2002)

Cognitive development: orderly changes in the complexity of mental skills humans can exhibit as they mature; without a supportive environment, the most complex skills observed in adults do not automatically develop

Cognitive complexity: the degree to which mental processes are composed of multiple, integrated parts and encompass information that is increasingly abstract or removed from physical objects

Cognitive social-learning theory: "a synthesis of cognitive-developmental and social-learning theories, focusing on both the influence of the environment on behaviors and the cognitive processes that people use in understanding and interpreting those influences" Fischer & Lazerson, 1984, p. 673

Dynamic skill theory: as described by Fischer and Bidell (1998), orderly patterns of how skills become increasingly complex and are exhibited; dynamic skill theory takes into account variations associated with "changes in key dimensions of person, body, task, context, and culture" p. 468

Emotional development: orderly changes in a human's awareness and understanding of feelings; this implies a cognitive component; without a supportive environment, the most complex skills observed in adults do not automatically develop

Skill Pattern: A set of skills used by an individual in addressing an open-ended problem. Based on reflective judgment research (King & Kitchener, 1994), individuals operating under different levels of cognitive complexity exhibit the skill patterns described on the next page

Skill Patterns and Vignettes

Source of Vignettes: Wolcott and Lynch, 2002

Skill Level 0: Confused Fact-Finder

- Looks for the “only” answer
- Doesn’t seem to “get it”
- Quotes inappropriately from textbooks
- Provides illogical/contradictory arguments
- Appears unable to read carefully
- Insists professors, the textbook, or other experts provide the “correct” answer, even to open-ended problems

Approximately 50% of First-Year College Students

Classroom Vignettes

Professor Eldenburg was reflecting on her last cost accounting class session. Part of the session involved identifying and discussing possible reasons for cost variances. Several of the students seemed to be completely off the mark—they kept referring to “good” or “bad” managers instead of identifying possible reasons, such as unanticipated cost increases or decreases, that might have caused cost variances.

Professor Ramakrishnan was grading his auditing midterm examination. One question required students to describe the pros and cons of accounts receivable confirmations as a form of audit evidence. Instead of describing pros and cons, several students simply provided definitions for accounts receivable confirmations.

Transition →		
Skill Pattern 0 Confused Fact-Finder	Major Improvements: <ul style="list-style-type: none">• Acknowledges existence of continuing uncertainty• Recognizes viability of multiple perspectives• Begins to use evidence logically to support conclusions	Skill Pattern 1 Biased Jumper

Skill Level 1: Biased Jumper

- Jumps to conclusions
- Doesn't recognize own biases; Accuses others of being biased
- Stacks up evidence for own position; Ignores contradictory evidence
 - Uses arguments for own position
 - Uses arguments against other positions
- Equates unsupported personal opinion with other forms of evidence

Majority of College Seniors

Classroom Vignettes

Professor Tatt was grading her auditing midterm examination. One problem on the examination posed an auditing scenario for accounts receivable and asked students to describe the pros and cons of positive versus negative confirmations for that scenario. Instead of describing pros and cons, several students provided only the pros of negative confirmations and the cons of positive confirmations, or vice versa.

Two of Professor McDonald's students were very angry about the grades on their systems project. One argued, "I don't understand how I could get a C—I did the work!" The other angry student complained on the teaching evaluation, "The professor was very biased in her grading."

(continued)

Transition →		
Skill Pattern 1 Biased Jumper	Major Improvements: <ul style="list-style-type: none">• Attempts to control own biases• Identifies issues, assumptions, and biases associated with multiple perspectives• Logically and qualitatively evaluates evidence from different viewpoints• Organizes information meaningfully	Skill Pattern 2 Perpetual Analyzer

Skill Level 2: Perpetual Analyzer

- Doesn't reach or adequately defend a solution
- Exhibits strong analysis skills, but appears to be "wishy-washy"
- Writes papers that are too long and seem to ramble
- Doesn't want to stop analyzing:
 - "I can look at it this way, and I can look at it that way, and..."
 - "Wait! What about _____?"

Classroom Vignette

Professor Vaughn was very excited as she read a student's case analysis. "At last," she thought, "I'm reading a paper by a student who knows how to perform good analyses." By the end of the paper, however, she had become disappointed. The student's recommendation, required in the case assignment, was very weak. The paper just seemed to "fizzle."

(continued)

Transition →		
Skill Pattern 2 Perpetual Analyzer	Major Improvements: <ul style="list-style-type: none">• Avoids getting “hung up” by consciously prioritizing issues and information• Maintains objectivity, but articulates well-founded support for choosing one solution	Skill Pattern 3 Pragmatic Performer

Skill Level 3: Pragmatic Performer

- Objectively considers alternatives before reaching conclusions
- Focuses on pragmatic solutions
- Incorporates others in the decision process and/or implementation
- Views task as finished when a solution/decision is reached
- Gives insufficient attention to limitations, changing conditions, and strategic issues

Classroom Vignette: The Pragmatic Performer (Skill Pattern 3)

Professors Wu and Kessler were sharing some of their recent classroom experiences. “I’m sure that some of these students can think more strategically than they demonstrate in the case papers they write for my class!” Professor Wu exclaimed. “But they just don’t seem to take the time to think past making the most obvious accountant’s recommendation. Maybe they’re too busy interviewing for jobs this semester.”

(continued)

Transition →		
Skill Pattern 3 Pragmatic Performer	Major Improvements: <ul style="list-style-type: none">• Prioritizes and addresses limitations effectively• Interprets and re-interprets bodies of information systematically over time• Exhibits a strategic, long-term vision• Spontaneously considers possible ways to generate new information	Skill Pattern 4 Strategic Re-Visioner

Skill Level 4: Strategic Re-Visioner

- Seeks continuous improvement/lifelong learning
- More likely than others to think “out of the box”
- Anticipates change
- Works toward constructing knowledge over time

Classroom Vignette: The Strategic Re-Visioner (Skill Pattern 4)

Professor Schuler had no reservation about writing a glowing letter of recommendation for this particular student. “Sandy is the rare student who not only understands accounting technical knowledge, but also performs superior analyses, recognizes and incorporates strategic business issues, works well in groups with other students, and always seeks to learn more,” he wrote.

Exercise: Recognizing Skill Patterns Exhibited in Student Papers

Consider the Following Assignment:

Wake-Up Coffee: Are Hourly Labor Costs Fixed or Variable?

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 over time for sales volumes. In addition, the store manager can send workers home early if sales on a particular day are lower than expected. Hourly labor was treated as a variable cost in previous budgets. 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:

Write a paragraph providing your recommendation for the treatment of hourly labor costs in next year's budget. Be sure to explain the reasons for your recommendation.

This assignment was written by Leslie Eldenburg and Susan Wolcott for a cost accounting textbook to be published by John Wiley & Sons, Inc. Copyright permission is granted for use of the case and related materials in this document.

Read the student responses on the following page. In small groups, discuss the following questions:

1. Does each student seem to recognize uncertainties?
2. Does each student adequately explore the problem?
3. Which skill pattern best describes each student's response?

Responses to the Wake-Up Coffee Assignment

Student A (Junior-level course; take-home assignment; not graded)

My idea would be to make it a variable cost and not change it. Since there is no set amount of time someone could be there they cannot be certain it would be a fixed cost. For this reason it would have to stay as a variable. No matter how much they can try to make certain set hours, it would be divided among several people instead of one. For this reason it would be hard to make it a fixed because it would involve several accounts as opposed to one set account.

Student B (Junior-level course; take-home assignment; not graded)

My recommendation for next year's budget is that hourly labor costs should be fixed, rather than the past variable. If there needs to be a certain number of workers to run the store at all times, then schedule as many workers as needed and do send them home early if sales start to slow down for the day. This might make some good employees that are needed angry and quit. To avoid this, schedule less workers in the already known slow periods of the day, rather than just sending someone home. Also, if next year's budget is changed to fixed costs, the boss won't have to keep figuring out different totals—but instead have the same numbers to work with every time. This would allow more time for improving the store and insuring good customer service.

Student C (MBA course; in-class exercise; not graded)

There are many uncertainties such as: How to treat overtime, which employees are benefited, are employees salaried or hourly, and how are benefit costs incurred and handled? 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.

Student D (MBA course; in-class exercise; not graded)

The costs of the labor should be both fixed and variable. The trick is determining minimal staffing levels. The managers, through experience and data, should decide on a minimum hours all employees should work or the manager could set a minimum number of employees needed regardless of sales volume. These costs for labor are fixed the rest are variable. It would be nice to have information about staffing levels over time (#people/hours worked) to establish fixed staff level.

Scaffolding: Helping Students Develop More Complex Cognitive Skills

Have students address open-ended problems (i.e., ones having more than one reasonable solution)

Provide reasonable challenges

Remember: Development is sequential

In general: Target one level higher than students' existing skill pattern

For most students, it is critical to focus on uncertainties—i.e., reasons why problems are open-ended

Most professors expect too much too soon; Keep in mind that development takes much time and practice

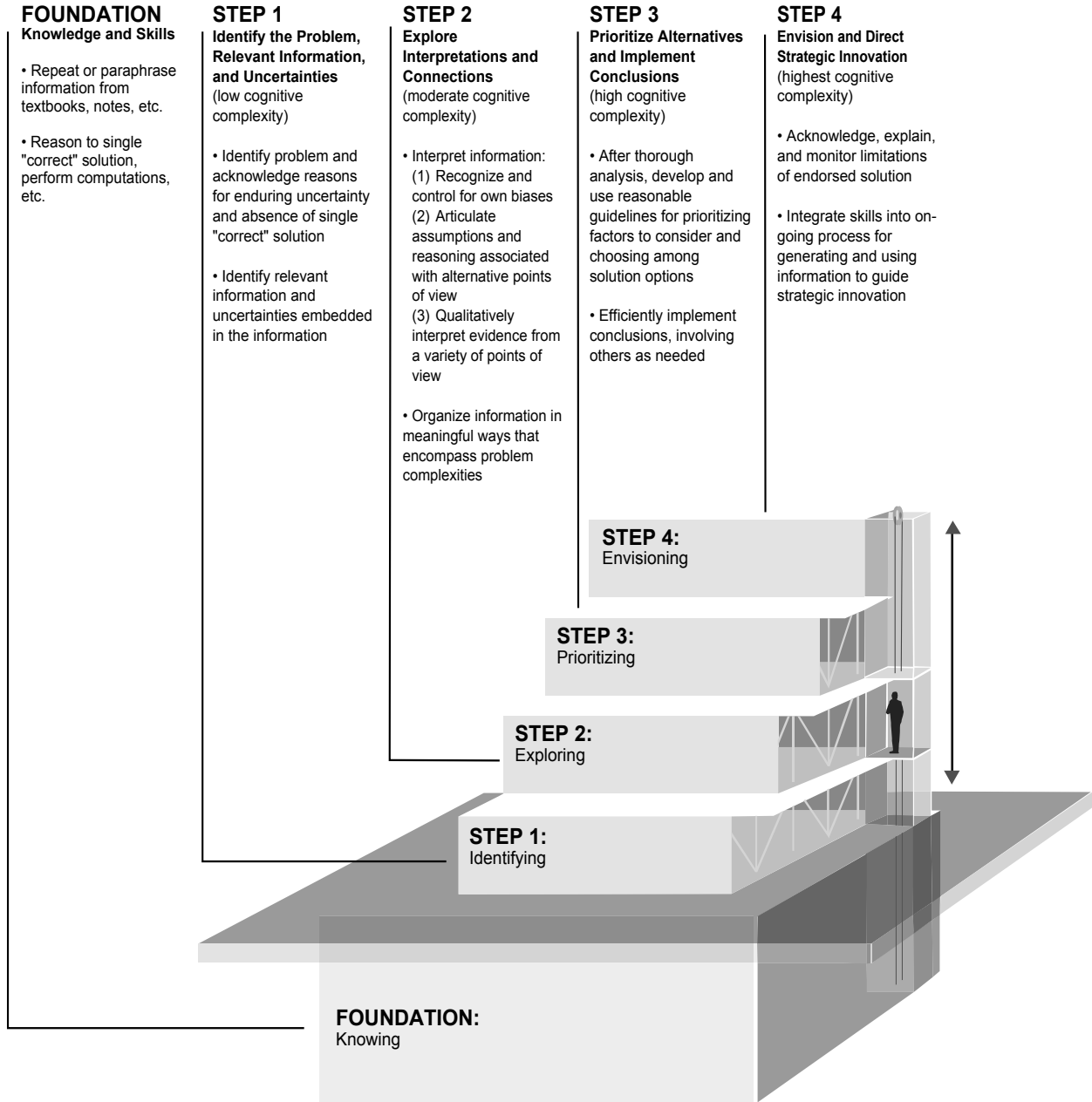
Performance of new skills is unstable

Provide explicit guidance and support to help students develop and practice new skills



STEPS FOR BETTER THINKING

A Developmental Problem Solving Process



© 2002, Cindy L. Lynch, Susan K. Wolcott, and Gregory E Huber. Permission is granted to reproduce this information for noncommercial purposes. Please cite this source: Lynch, C. L., Wolcott, S. K., & Huber, G. E. (August 5, 2002). Steps for Better Thinking: A Developmental Problem Solving Process [On-line]. Available: <http://www.WolcottLynch.com>. Model evolved from ideas presented in King and Kitchener's (1994) reflective judgment model of cognitive development and Fischer's (Fischer & Bidell, 1998) dynamic skill theory.

Task Prompts for Different Competency Levels

Source: WolcottLynch Associates (2002), Copyright 2002 by the American Institute of Certified Public Accountants, Inc. Copied with permission.

You can use the following task prompts for designing student assignments to address specific levels of the AICPA Core Competencies.

←Less Complex Elements		More Complex Elements→	
Level 1—Identifying	Level 2—Exploring	Level 3—Prioritizing	Level 4—Integrating
<p>Identify 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, authoritative literature, etc.) * Identify relevant standards or rules for _____ * Identify factors related to _____ * Identify various potential solutions to _____ * Describe arguments in favor of _____ <p>Identify Uncertainties:</p> <ul style="list-style-type: none"> * Explain why _____ cannot completely eliminate risk of _____ * Describe uncertainties concerning _____ * Identify and describes 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>Interpret Information From Multiple Viewpoints:</p> <ul style="list-style-type: none"> * Describe the pros and cons of _____ * Analyze the costs and benefits of _____ * Explore the implications of ambiguities when analyzing _____ * Articulate assumptions and reasoning associated with _____ * Qualitatively interpret _____ from a variety of viewpoints * Appropriately use (a technique) to analyze _____ * Objectively evaluate _____ information * Consider the impact of alternative solutions on various stakeholders in _____ * Analyze the quality of information and evidence related to _____ * Recognize and control for own biases when _____ * Identify the effects of _____ on _____ <p>Organize 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>Prioritize and Conclude:</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 decisions * Prioritize _____ in reaching conclusions * Develop reasonable recommendations for _____ * Address the costs and benefits of _____ in reaching conclusions about _____ * Develop reasonable policies for _____ * Develop an effective plan for addressing _____ <p>Effectively Involve Others in Implementation:</p> <ul style="list-style-type: none"> * Take actions to implement the best solution to _____ * Organize _____ so that it is meaningful to the receiving party * Communicate _____ effectively for given setting and audience 	<p>Acknowledge Limitations:</p> <ul style="list-style-type: none"> * Acknowledge potential future developments in _____ * Describe limitations to a recommendation about _____ * Strategically consider contingencies and future developments related to _____ <p>Create and Monitor 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 _____ as appropriate * Continuously monitor and update _____, as needed * Develop strategic uses of _____ * Manage _____ under changing or unusual demands * Apply continuous improvement principles to _____

Adapted from Wolcott, S. K., & Lynch, C. L. (January 28, 2002). *Task Prompts for Different Levels in Steps for Better Thinking* [On-line]. Available: <http://www.WolcottLynch.com>.

Examples of Open-Ended Accounting Assignments

Following are several accounting assignment examples with possible questions aimed at Step 1, 2, 3, and 4 skills.

Source: Wolcott and Lynch (2002, Appendix B)

Topic (Subject) and Potential Scenario Given to Students	Examples of Open-Ended Problems Addressing Different Aspects of Steps for Better Thinking			
	Step 1	Step 2	Step 3	Step 4
Bad Debts (Management or Financial): Give students a scenario in which a company uses credit reports and other information to make credit decisions. In the scenario, the company has experienced an unexpected increase in bad debts.	<ul style="list-style-type: none"> Identify and explain possible reasons why management might not foresee an increase in bad debts. Explain why credit reports can't be used to know for sure which customers will pay and which will become bad debts. 	<ul style="list-style-type: none"> Discuss the strengths and weaknesses of using credit reports to make credit decisions. Given bad debt problems, discuss the pros and cons of extending credit to customers. 	<ul style="list-style-type: none"> Analyze the company's credit policies and practices and recommend improvements to management. 	<ul style="list-style-type: none"> Develop a plan for monitoring the performance of the company's credit policies and practices.
Cost Variance (Management or Cost): Give students a scenario in which a company has experienced a significant cost variance. Cost variance information is used to help develop next year's budget.	<ul style="list-style-type: none"> Identify and explain possible reasons why managers might not foresee a significant cost variance. Describe methods that can be used to learn about the reason(s) for a significant cost variance. 	<ul style="list-style-type: none"> Explain how different assumptions about the cost variance affect how it might be used in developing next year's budget. Discuss the pros and cons of using cost variance information to develop next year's budget. 	<ul style="list-style-type: none"> Develop next year's budget, taking into account this year's cost variance information. 	<ul style="list-style-type: none"> Describe a process for continuous improvement in the company's system for measuring and utilizing cost variance information.

(continued)

Topic (Subject) and Potential Scenario Given to Students	Examples of Open-Ended Problems Addressing Different Aspects of Steps for Better Thinking			
	Step 1	Step 2	Step 3	Step 4
<p>Tax Deduction (Income Taxes): Give students a scenario where an individual is trying to decide whether to take an income tax deduction. If audited or in court, the deduction might or might not be allowed.</p>	<ul style="list-style-type: none"> • Explain why there are uncertainties about whether this deduction would be allowed. • Explain why Congress doesn't write income tax laws that clearly define when a deduction can and can't be taken. 	<ul style="list-style-type: none"> • Discuss the arguments for and against taking this income tax deduction. • Compare and contrast the points of view for this deduction for an individual who is willing to assume risk with an individual who wishes to avoid risk. • Explain why there might be differences between whether this deduction would be allowed in an audit versus tax court. 	<ul style="list-style-type: none"> • Provide a recommendation about whether the individual should take the income tax deduction. 	<ul style="list-style-type: none"> • Describe the limitations of a decision to take the income tax deduction and describe the implications of those limitations for the individual's tax planning strategies.
<p>Contingent Liabilities (Financial Accounting or Auditing): Give students copies of the financial statements and contingent liability footnotes for two companies in the same industry. The footnotes are qualitatively different.</p>	<ul style="list-style-type: none"> • Identify and describe the contingent liabilities for each company. • Explain why there are uncertainties about how the contingent liabilities for each company will be resolved. • Explain why there are uncertainties about the classification of contingent liabilities under SFAS No. 5. 	<ul style="list-style-type: none"> • Discuss the possible incentives of managers to increase or decrease the amount of accrual and/or disclosure provided for contingent liabilities. • Compare and contrast the evidence of significant unrecognized contingent liabilities for the two companies. 	<ul style="list-style-type: none"> • Evaluate the contingent liability information for the two companies and determine which company has the greater contingent liability risk. 	<ul style="list-style-type: none"> • Develop a process for a financial analyst to monitor and consider contingent liability risk in evaluating the value of a company over time.

(continued)

Topic (Subject) and Potential Scenario Given to Students	Examples of Open-Ended Problems Addressing Different Aspects of Steps for Better Thinking			
	Step 1	Step 2	Step 3	Step 4
<p>Internal Controls (Auditing or Systems): Give students a description of the internal controls for one cycle of a company's business.</p>	<ul style="list-style-type: none"> • Prepare a list of internal controls that might be appropriate for this business cycle. • Prepare a list of errors or irregularities that might be prevented or detected by a particular internal control. • Explain why companies cannot adopt "perfect" internal controls. • Explain why there are uncertainties about the effectiveness of a particular internal control. 	<ul style="list-style-type: none"> • Describe the costs and benefits of a particular internal control. • Explain the implications to the company for a particular internal control that the company does not employ. • Identify ways in which errors or irregularities that might occur in the absence of a particular internal control might become evident. • Describe the incentives of managers related to a particular internal control. 	<ul style="list-style-type: none"> • After considering both costs and benefits, prepare a recommendation to management for improvements in internal controls. • Draw a conclusion about the risk of a negative outcome from the absence of a particular internal control. 	<ul style="list-style-type: none"> • Prepare a strategy for redesigning internal controls given potential changes in the way technology is used in the company's business.
<p>Capital Budgeting (Management or Cost): Give students information for a capital budgeting project where the investment decision is open-ended.</p>	<ul style="list-style-type: none"> • List information that is relevant to the company's investment decision. • Identify aspects of the information that are subject to uncertainties. 	<ul style="list-style-type: none"> • Describe the pros and cons of the investment decision. 	<ul style="list-style-type: none"> • Provide a recommendation about whether the company should invest in the project. 	<ul style="list-style-type: none"> • Develop a plan to monitor performance of the project after the investment is made.

(continued)

Topic (Subject) and Potential Scenario Given to Students	Examples of Open-Ended Problems Addressing Different Aspects of Steps for Better Thinking			
	Step 1	Step 2	Step 3	Step 4
<p>Ethics (Any Course Fitting the Scenario Topic): Give students a scenario involving an ethical dilemma.</p>	<ul style="list-style-type: none"> Identify and describe possible alternative responses to the ethical dilemma. Explain why there are uncertainties about the best response to the ethical dilemma. 	<ul style="list-style-type: none"> Identify the stakeholders involved in this ethical dilemma and explain how each alternative response would affect the stakeholders. Discuss the pros and cons of each response to the ethical dilemma. 	<ul style="list-style-type: none"> Create a recommendation for the best response to this ethical dilemma. Identify and explain the most important factors for the decision maker to consider in this scenario. 	<ul style="list-style-type: none"> Develop a personal code of ethics, including ways that you will monitor the plan and your performance over time.
<p>Communication (Any Course Fitting the Scenario Topic): Give students a scenario in which they need to prepare a written communication for a specific audience.</p>	<ul style="list-style-type: none"> Prepare a list of information that might be appropriate to include in the communication. Explain why there are uncertainties about the best way to communicate to the audience. 	<ul style="list-style-type: none"> Describe the information needs of the audience. Describe the pros and cons of including one or more pieces of information in the written communication for this audience. 	<ul style="list-style-type: none"> Create a written communication for the audience that provides appropriate information prioritized for the setting and audience. 	<ul style="list-style-type: none"> Create a written communication for the audience that provides appropriate information for the setting and audience, including recommendations for strategies the audience member(s) might employ to monitor performance or processes in the future.

Improving an Assignment to Scaffold Cognitive Skills

Refer to:

- * Wake-Up Coffee assignment on page 36
- * Task Prompts on page 40
- * Task Prompts in IDEA Paper, Figure 3
- * Examples of Accounting Open-Ended Problems on pages 41-44

Exercise: Write requirements that could be added to the Wake-Up Coffee assignment to encourage students to address each cognitive level:

Step 1	Step 2	Step 3	Step 4

Implications of Steps for Better Thinking Skill Patterns for Student LEARNING ATTITUDES AND APPROACHES

←Less Complex Skill Patterns		More Complex Skill Patterns→		
“Confused Fact-Finder” Skill Pattern 0	“Biased Jumper” Skill Pattern 1	“Perpetual Analyzer” Skill Pattern 2	“Pragmatic Performer” Skill Pattern 3	“Strategic Re-Visioneer” Skill Pattern 4
<p>Common Learning Attitudes and Approaches:</p> <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) 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 	<p>Common Learning Attitudes and Approaches:</p> <ul style="list-style-type: none"> • Studies in a way that “seems right” or “logical” to him /her • 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>Common Learning Attitudes and Approaches:</p> <p>Same as Skill Patterns 3 and 4:</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 Skill Pattern 2:</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>Common Learning Attitudes and Approaches:</p> <p>Same as Skill Patterns 2 and 4:</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 Skill Pattern 3:</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>Common Learning Attitudes and Approaches:</p> <p>Same as Skill Patterns 2 and 3:</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 Skill Pattern 4:</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

Adapted from Lynch, C. L. & Wolcott, S. K. (November 24, 2001). *Steps for Better Thinking Skill Patterns* [On-line]. Available: <http://www.WolcottLynch.com>. Based in part on information from *Reflective Judgment Scoring Manual With Examples* (1985/1996) by K. S. Kitchener & P. M. King. Grounded in dynamic skill theory (Fischer & Bidell, 1998).

Recognizing Skills Required in an Assignment

Refer to:

- Teaching Case: Evidence and Educational Policy on page 19
- Task Prompts on page 40
- Task Prompts in IDEA Paper, Figure 3

Discussion Question:

What level of cognitive skills (1, 2, 3, or 4) is the focus of the learning technique used by the professor in this case?

Students' Levels of Cognitive Development Influence:

Students' Voices

- Cognitive levels affect how students perceive and respond to their learning environment
- College educational environments are often designed for students operating at higher cognitive levels than most students exhibit. This leads to frustration for both professors and students.
- Professors can help students achieve more complex cognitive skills by listening more closely to students' voices and by designing more appropriate challenges and support.

Impact of Learning Styles

- Cognitive levels affect how "deeply" students are able to engage in all phases of Kolb's model
- Students having more complex cognitive skills are better able to understand and adopt effective learning for utilizing less-preferred styles and for working with others having diverse learning styles