Designing A Learning Process – Not Just a Course

Linda Nilson

Clemson University

Lisa Berry

Wiley Learning Institute

Tips for Participating in Adobe Connect

Technical Tips

Audio:

•Your computer speakers (or headphones) provide the audio. | Closing other programs can improve your audio. | We recommend using an updated version of Flash.

Full Screen Option:

•During the presentation, the “Full Screen” button at the upper right will allow you to switch back and forth between full screen and normal view.

Troubleshooting:

•Closing browser and rejoining event often corrects technical issues.

Participation Tips

Use the Chat window to:

•Introduce yourself;

•Share questions or comments; or

•Communicate a technical issue.

Activities:

•We will use polls and additional chats throughout the event for interaction.

•Participation is required when Continuing Education credits are available.

Linda Nilson

Designing A Learning Process – Not Just a Course

Participant Learning Outcomes I

After this online workshop, you will be able to structure a course that is built solidly on student learning outcomes, appropriate assessments, and a logical, cohesive learning process (*ultimate* outcome).

Participant Learning Outcomes II

To meet this ultimate outcome, you will also be able to do the following along the way (*foundational* and *mediating* outcomes):

1. To formulate assessable student learning outcomes.
2. To distinguish among your *ultimate, mediating,* and *foundational* outcomes.

Participant Learning Outcomes II

3. To identify and address misconceptions students bring into your class about the subject matter.
4. To organize/sequence your outcomes chronologically, from *foundational* to *mediating* to *ultimate,* thereby describing the learning process through which students need to progress to meet all your learning outcomes for them.

Participant Learning Outcomes II

5. To develop fair assessments of how well students are achieving your learning outcomes.
6. To select the most effective “tools”—formats, teaching methods, and teaching “moves”—to help students achieve your learning outcomes.

The Model of the "Perfect Fit" in Course (and Curriculum) Design

Appropriate Assessment of Students' Performance on Outcomes

(the measurement of progress to the ends)

↑

Teaching Methods/Learning Experiences to Help Students Achieve Outcomes

(the means to the ends)

↑

Student Learning Outcomes

(the course foundation, the ends)

What Are Good Student Learning Outcomes?

- Statements of what your students should ***be able to do*** by end of unit or course.
- "Performances" that you can ***observe*** and ***set standards for*** so you can ***assess*** them—***active verbs***
- ***Not*** internal states of mind: "know," "learn," "feel," "understand," "appreciate"

Good Learning Outcomes…continued

- Achievable by the students at issue
- Meaningful and relevant to them
- Span a range of competencies—from lower-level/basic to higher-level/more advanced

General Categories of Learning Outcomes (p. 2, handout packet)

- Psychomotor
- Affective
- Social
- Ethical
- Cognitive *

Poll 1

Which statement is *not* an assessable outcome?

a) Identify which variables must be controlled in a given experiment to get valid results.

b) Explain “mass,” “force,” and other key physics concepts to a 12-year-old.

c) Calculate the volume of an irregularly shaped object.

d) Learn the difference between the pluperfect and the past tense in French.

e) Discuss three different ways to interpret a given case.

Three Frameworks for Setting and Sequencing Cognitive Outcomes

1. Bloom's hierarchy/taxonomy of cognitive operations (and its revision)
2. Perry's stages of the cognitive development of undergraduates
3. Constructivist theory: the importance of students' mental models/paradigms and need to challenge faulty ones before new learning

Bloom's Hierarchy/Taxonomy of Cognitive Operations

- **Knowledge**: memorize or recognize facts, terms
- **Comprehension**: restate in one's own words
- **(Novel) Application**: utilize, make useful
- **Analysis**: compare/contrast; identify assumptions; deduce implications
- **Synthesis**: identify relationships, connections
- **Evaluation**: assess validity; select and defend

Design course to move students from lower-level to higher-level cognitive outcomes.

Anderson & Krathwohl's (2000) Revised Taxonomy

- **Remembering** = Knowledge
- **Understanding** = Comprehension
- **Applying** = Application
- **Analyzing** = Analysis
- **Evaluating** = Evaluation
- **Creating** ≈ Synthesis (highest)

(See p. 3 for verbs by cognitive operation.)

Perry's Stages of Undergraduate Cognitive Development

1. **Duality:** black-and-white thinking; authorities rule
   - *Uncertainty*
2. **Multiplicity:** poor authorities or temporary state
   - *Uncertainty as legitimate, inherent*
3. **Relativism:** all opinions equal
   - *Standards of comparison*
4. **Commitment** (tentative) to best theory available

Challenging Students' Faulty Mental Models/Paradigms

1. What **faulty** paradigm/mental model are students using that you want to challenge?
2. What **new** paradigm do you want students to acquire? **(student learning outcome)**
3. How can you creatively challenge their paradigm in a way compelling to *them*? **(learning experiences)**
4. How will you determine if the students have acquired the new paradigm? **(assessment)**

Poll 2

- What faulty paradigm or mental model do you think your students are bringing into your introductory course?

Design Step 1: Set and Sequence Your Ends (Student Learning Outcomes)

- Choose best framework or hybrid for you.
- Start by setting ultimate outcomes.
- **Work backwards** through mediating outcomes.
- Identify **basic** background abilities (foundational outcomes) to develop at beginning or course or module.

- See Template for Outcomes Map, p. 4.
- Commercial and free software listed pp. 5-6
- Now…examples of real outcomes maps

Outcomes Map for Freshman Seminar, Free Will and Determinism

Linda B. Nilson, Fall 1996

Ultimate Learning Objective

To develop and explain in writing a well-reasoned personal position on the role of free will, determinism, compatibilism, and fatalism (including spiritual destiny) in your own and others' lives, and to defend it while acknowledging its weaknesses and limitations (capstone paper, #3)

Mediating Learning Objectives

To assess how research and research-based writings support or refute each position (readings & in-class discussions weeks 6-12, paper #2 due week 12)

To assess how one's own life experiences support or refute each position (journaling & in-class discussions weeks 6-14)

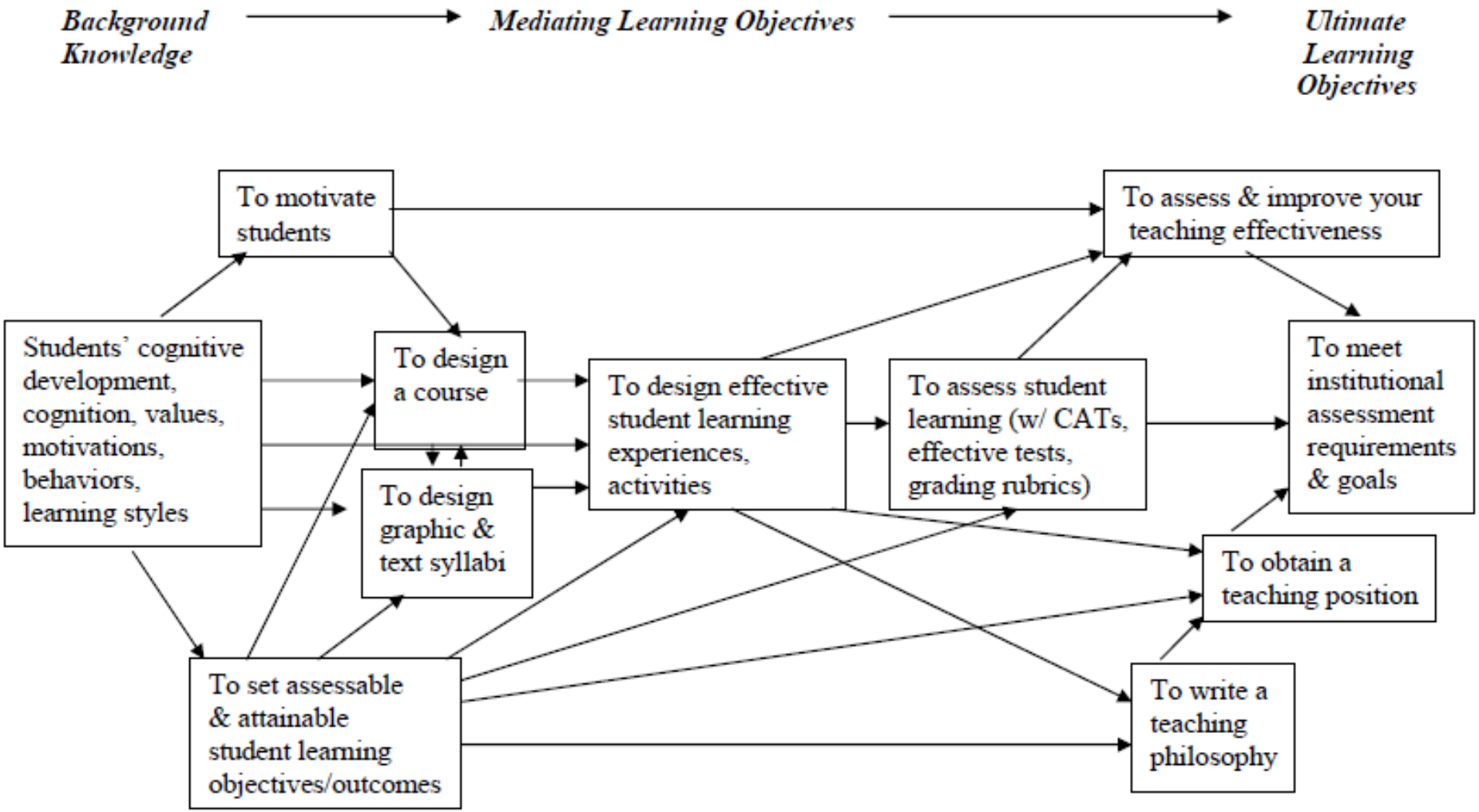
To refute positions from the viewpoints of other positions (simulation/mock trial week 6, based on paper #1)

To apply the positions to interpret and assess a situation (paper #1 on criminal case due week 6)

Foundational Learning Objectives

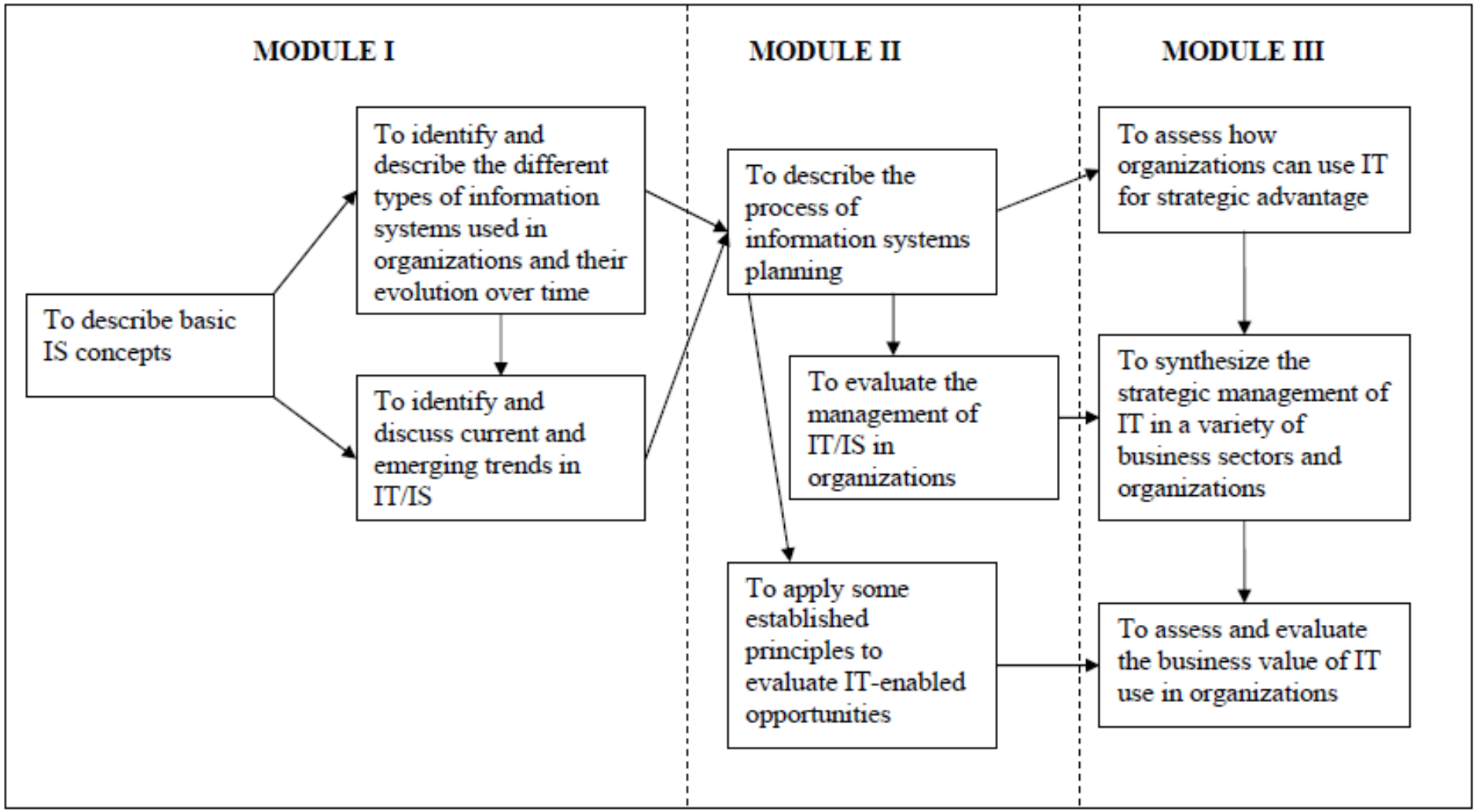
To express accurately, both orally and in writing, the free willist, determinist, compatibilist, and fatalist positions, along with their assumptions and justifications (readings, study questions, in-class writing exercises, in-class discussions weeks 1-5)

OUTCOMES MAP for VT ED 876: COLLEGE TEACHING, Dr. Linda B. Nilson, Fall 2006



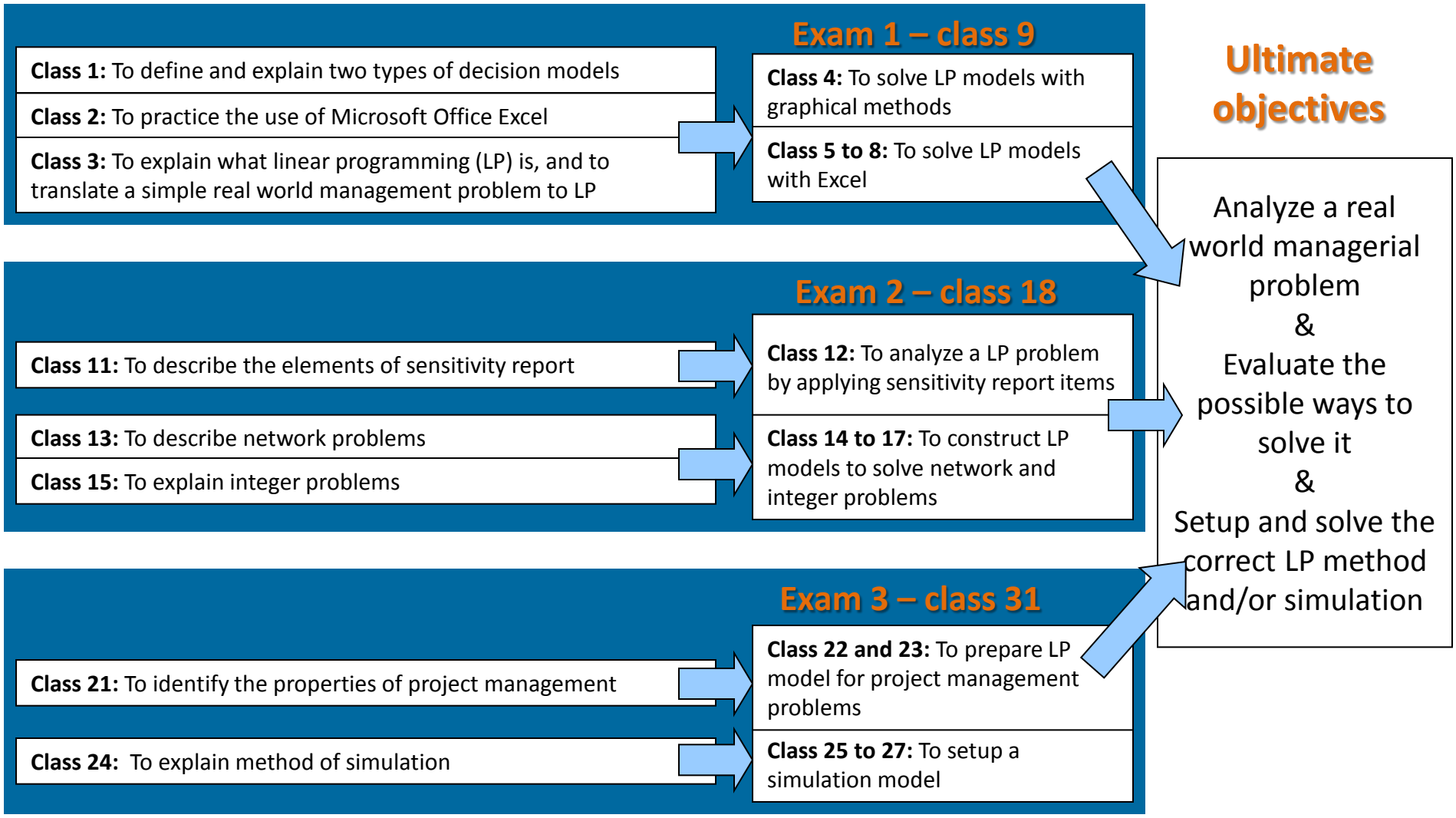
Samuel Otim
Clemson University
Department of Management

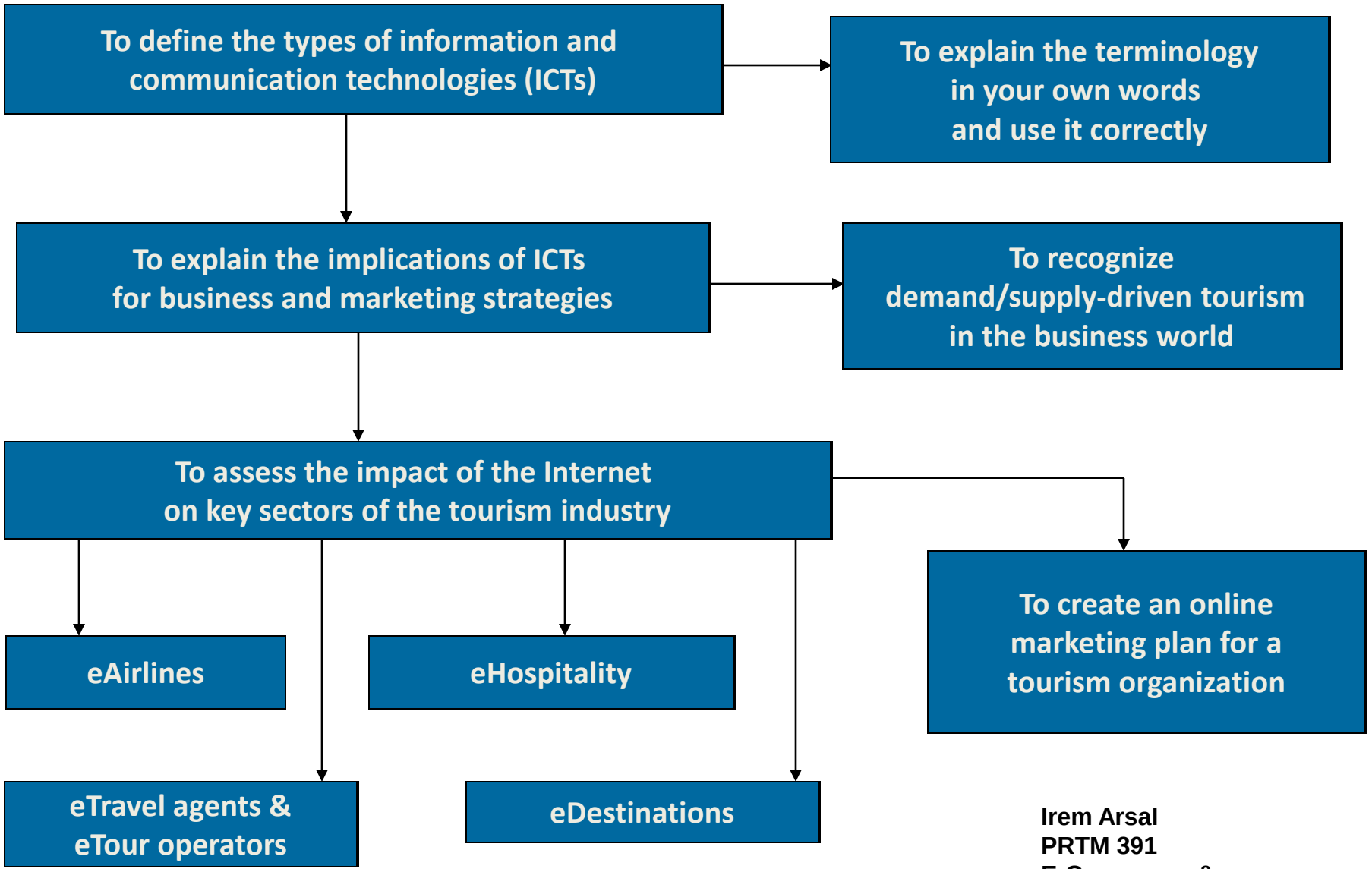
MGT 490: Strategic Management of Information Technology, Spring 2007
Outcomes Map



MGT 312 Decision Models for Management

Uzay Damali, 2007 – Outcomes Map





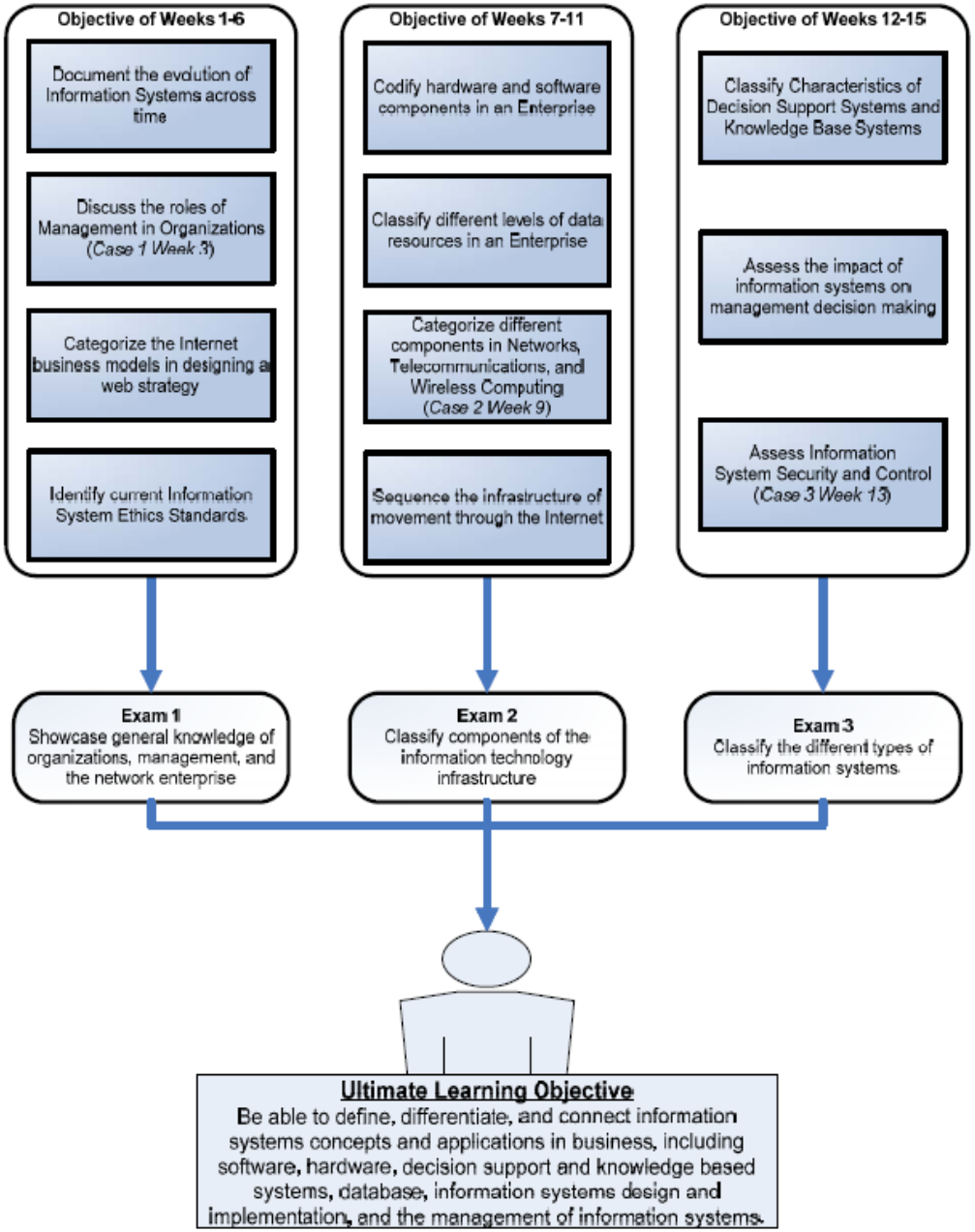
Irem Arsal
PRTM 391
E-Commerce &
Tourism
Marketing
Fall 2006

Valid During Semester: Fall 2007

Flowchart of Learning Objectives For Management Information Systems

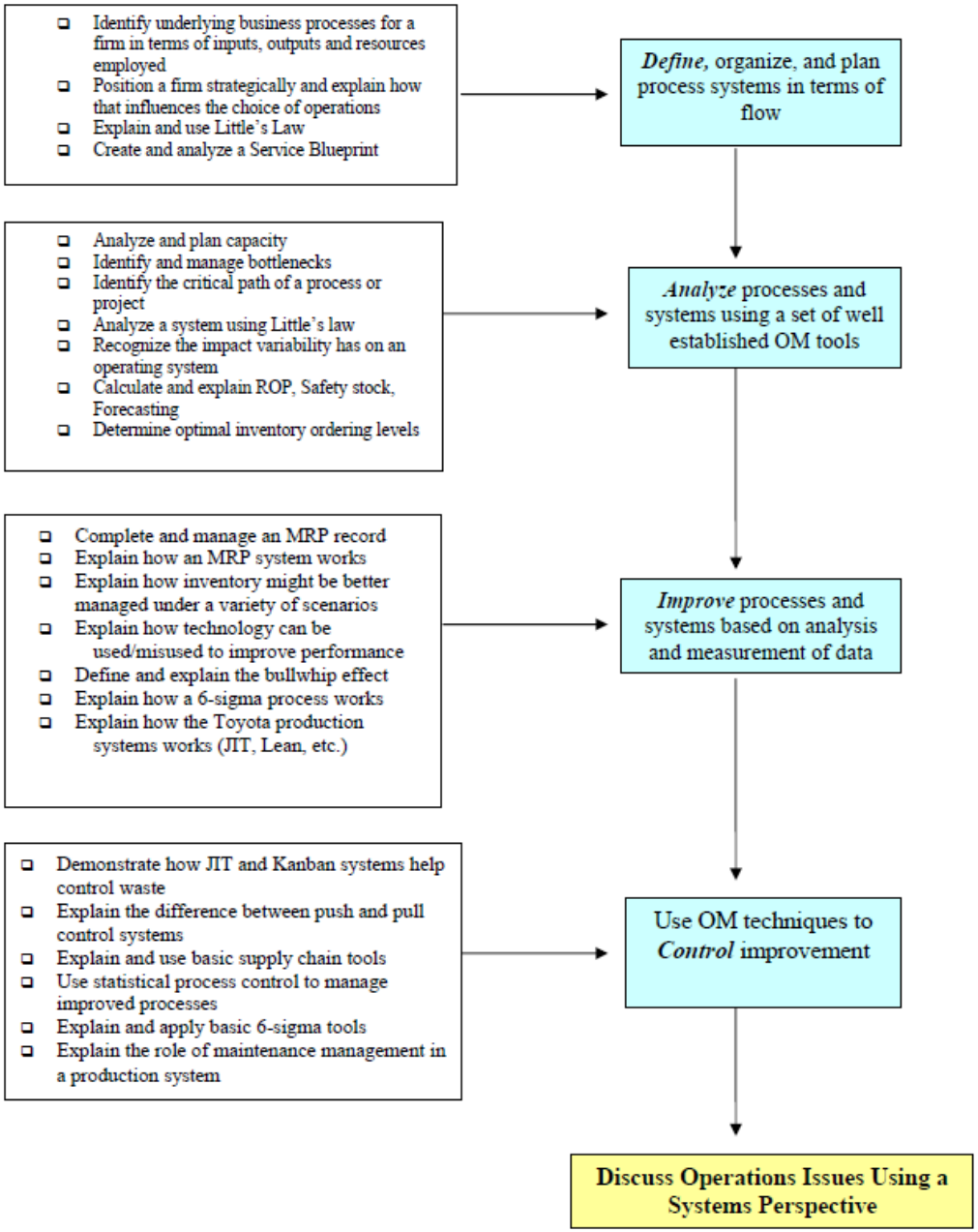
Class Designation: MGT 318

Author: Pamela S. Galluch



MGT 390 – Introduction to Operations Management, Fall 2006
Shockley – Outcomes Map

As students progress through the course, they will be able to…



Design Step 2: Add Your Assessments

- Should mirror your student learning outcomes since you're measuring students' progress towards achieving them.
- Each ultimate and mediating outcome → formal, graded or informal assessment.
- Assess **authentically**—on real-life knowledge and skills.
- Set grade/point standards.

Before You Formally Assess, *In*formally Assess

Use low-stakes or ungraded activities and assignments to:

- Give students **practice** with feedback.
- Get frequent **feedback** for **yourself** on students' progress.

Informal Assessments Can Be In-Class Activities and Exercises

- Use the start of class, student-active lecture breaks, and the end of class for informal assessment activities (2-10 minutes) on students' understanding of the readings, your mini-lectures, and class time activities, graded or not.

Which bring us to…

Design Step 3: Choose Your Means

- How do you help students achieve your outcomes?

  Activities and Assignments
  = *Their* Learning Experiences
  = *Your* Teaching Methods

- Choose the best tools (means) for the job (ends).

Types of “Tools”

- “Formats” = type of course/setting
  - E.g.: lecture, lecture and discussion, lecture and science or skill lab, discussion, seminar
- “Major Methods”
  - E.g.: lecture, interactive lecture, discussion, case method, PBL, group work, simulation
- “Teaching Moves” (mini-methods)
  - Ways you explain material, short in-class student activities and exercises, lecture breaks

Poll 3

Which formats do you think are the most effective for most learning outcomes? (Pick 2)

- Lecture
- Lecture with discussion
- Lecture with science lab
- Lecture with skill lab/activity
- Skill lab/activity
- Discussion with skill activity
- Seminar
- Science lab

Formats – May not be under your control, but could they be? Could you ask?

Teaching Moves vs. **Major Methods**

— Less More +

Time & Commitment Continuum

Rule for Choosing a Tool

- To give students **practice** in the **performance(s)** specified in one or more of your learning outcomes—practice as close as possible to the ways you plan to formally **assess** student performance(s) (that is, grade them).

Matching Tools to Outcomes

- Formats
  - Faculty believe that high-order competencies are best achieved in small, student-active classes.
- Major Methods
  - “Matching Methods to Outcomes?” pp. 7-9
- “Teaching Moves”
  - “Effective Teaching Moves for Six Learning Outcomes” pp. 10-13

Linda B. Nilson, Ph.D.

Director, Office of Teaching Effectiveness and Innovation

445 Brackett Hall, Clemson University

Clemson, SC 29634 USA

864.656.4542

nilson@clemson.edu

www.clemson.edu/OTEI

Questions?

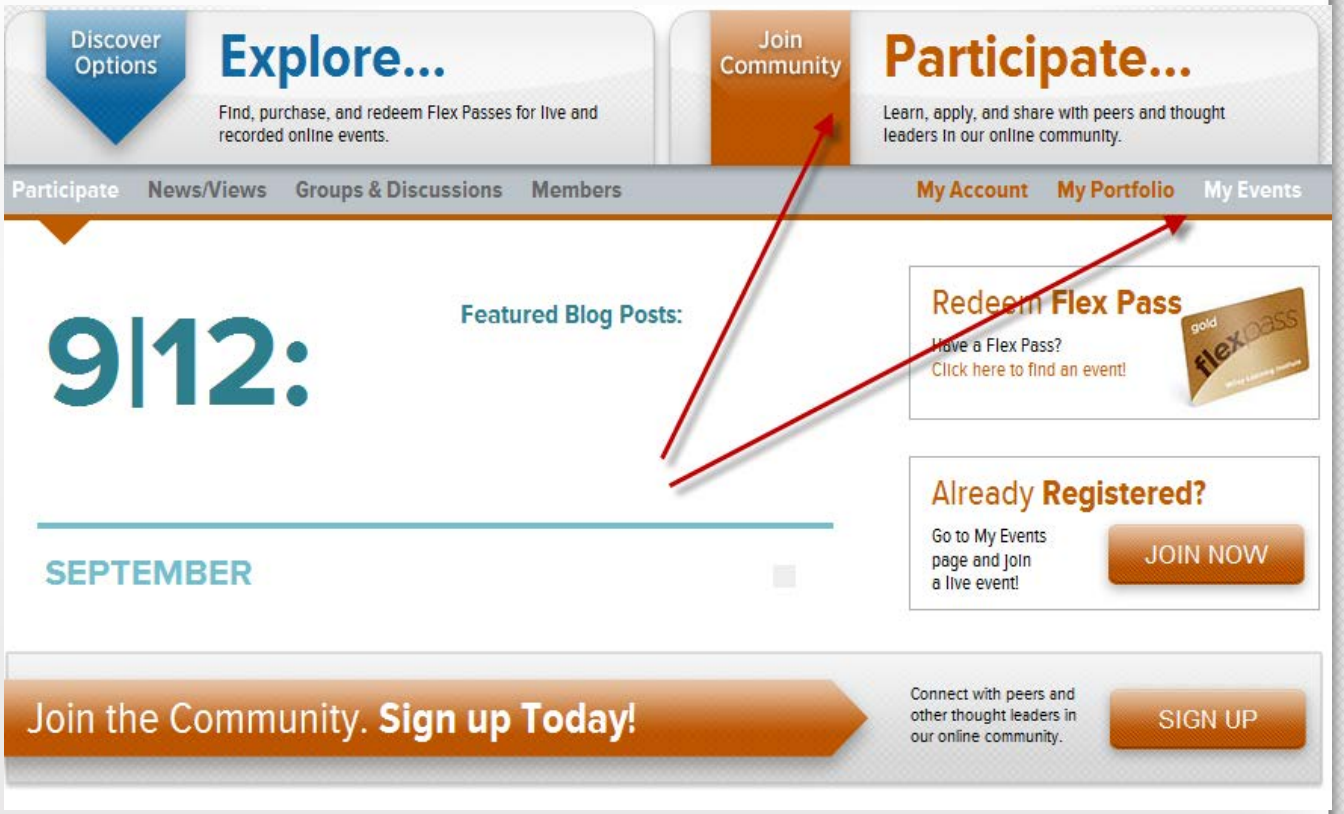
Upcoming Events – Winter 2013

- Winter Intensives
- Mentoring Short-Course – Lois Zachary

www.WileyLearningInstitute.com

Final Thoughts

- Evaluations
- Certificates of Participation



WileyLearningInstitute@Wiley.com

Fall 2012 & Spring 2013 event information

www.WileyLearningInstitute.com