Using Concept Maps to Gauge Student Understanding

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Background

• Used to “diagnose misunderstanding, improve study methods, and glimpse how learners come to know” (McAleese, 1998).
• Help students reflect, organize thoughts, reveal new connections (Kinichin, Hay, & Adams, 2000).
• Reflect an individual author’s understanding (Kinichin, Hay, & Adams, 2000).
• Provide a point of communication for the student and instructor (Kinichin, Hay, & Adams, 2000).
Methodology

• Students in an experiential learning class
• List personal learning goals for the class
• Concept map around “What I know about how people learn” at beginning and end of semester
• Comparison of pre-course and post-course maps
Benefits from a Student’s Perspective

• Goals
  – Student-centered
  – Sense of ownership/personal responsibility

• Concept Map
  – Organization of thoughts and connections
  – Strengths and weaknesses
  – Ways to improve

• Comparison
  – Reflect and see progress
Benefits from an Instructor’s Perspective

- Assess current knowledge, misconceptions, depth of knowledge
- Understand individual schemas
- See growth in students, let them see personal growth
Example Beginning – Student A

What I know about how people learn

Kinesthetic
- Doing it
  - Hands on
  - Peaking interest via excitement

Visual
- Seeing it done

Auditory
- Hearing it

Making mistakes
- Learning from frustration (emotional)
Example End – Student A
Student A
What I know about how people learn

teacher

learning style

personality

strategies

styles

Interests

What is being taught

Emotions

Post experiences

reading

Background knowledge

Setting

Physical environment

enriching aspects (for learning)

Student B

Example Beginning – Student B
Example End – Student B
Student B
Recommendations

• Instructors
  – Use the beginning concept maps to tailor the class to the students
  – Learn which concepts in the course “stick”

• Students
  – Focus on improving weaknesses
  – Use strengths as an advantage
Questions?