CTLT 2010 Symposium

Reengineering a Graduate Online Course Using the Finest Blackboard Attributes

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Why Course Reengineering?

- When redundancy characteristics begin to show
- When CMS shows supported evolution
- Make course more responsive and efficient
- When hardware and software support show signs of being obsolete
- When tools to support restructuring are readily available
- Meeting dynamic technological changes

Target for Reengineering?

- Learners: organize their activities around outcomes, not tasks.
- Determine Blackboard online attributes to link processes, products and outcomes
- https://blackboard.ilstu.edu/webct/
- Incorporate information processing work into the work that produces best learning environment
- Treat ‘geographically’ dispersed resources as though they were centralized.

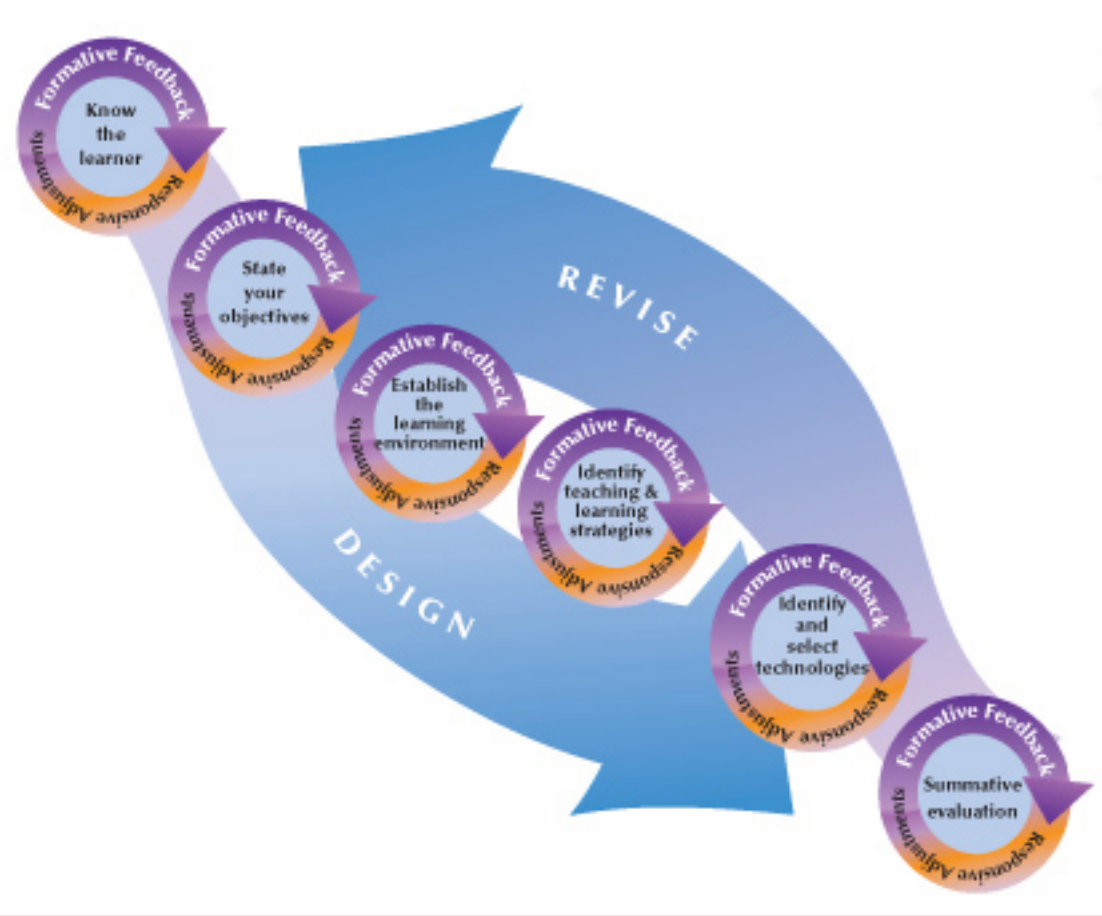
Reengineering methodology

- Plan, plan, and strategically PLAN
- Employ a holistic or systems approach to implementing a step-by-step process
- Link parallel activities instead of integrating their results
- Put the decision point where the work is performed and build control into the process.
- Build valid and reliable instruments to capture data
- Capture the data once, at its source, and monitor carefully

Reengineering w/ D-P-A System

Figure 2.1
The Design-Plan-Act! (D-P-A) System
D-P-A's three system components work together to create effective instructional events.

Reengineer w/ the Systems Model



The DID Model

STEP 1 - Know the Learner

- **Consider:**
  - **Physical and cognitive developmental stage**
  - **Cultural and language differences**
  - **Incoming skills and current knowledge base**
  - **Personal characteristics (learning styles, etc.)**
  - **Group characteristics and dynamics**

The DID Model

Know the Characteristics of the Learner

TABLE 2.2 UNDERSTANDING LEARNERS

Examine learner preferences in each of the following five critical areas in order to develop a complete learner profile.

Factors Affecting the Learner	*Areas of Learner Preferences*			
ENVIRONMENTAL	Sound	Light	Temperature	Design
EMOTIONAL	Motivation	Persistence	Responsibility	Structured learning environment
SOCIOLOGICAL	By oneself	Pairs, small or large teams	With an authoritative adult	Any combination of these components
PHYSIOLOGICAL	Visual, auditory, or kinesthetic	Food or drink intake while concentrating	Morning, noon, or night energy peaks	Peripatetic or static physical state
PSYCHOLOGICAL	Global or analytic learning preference	Right-brained or left-brained dominance	Impulsive or reflective	

SOURCE: "How Do We Teach Them If We Don't Know How They Learn?" in *Teaching K–8*, 29(7):50–52.

The DID Model

STEP 2 - Articulate your Objectives

- **Use Performance Objectives**
  - **State what the learner will do**
- **Focus of your objectives**
  - **The learner's performance once instruction is completed**

The DID Model

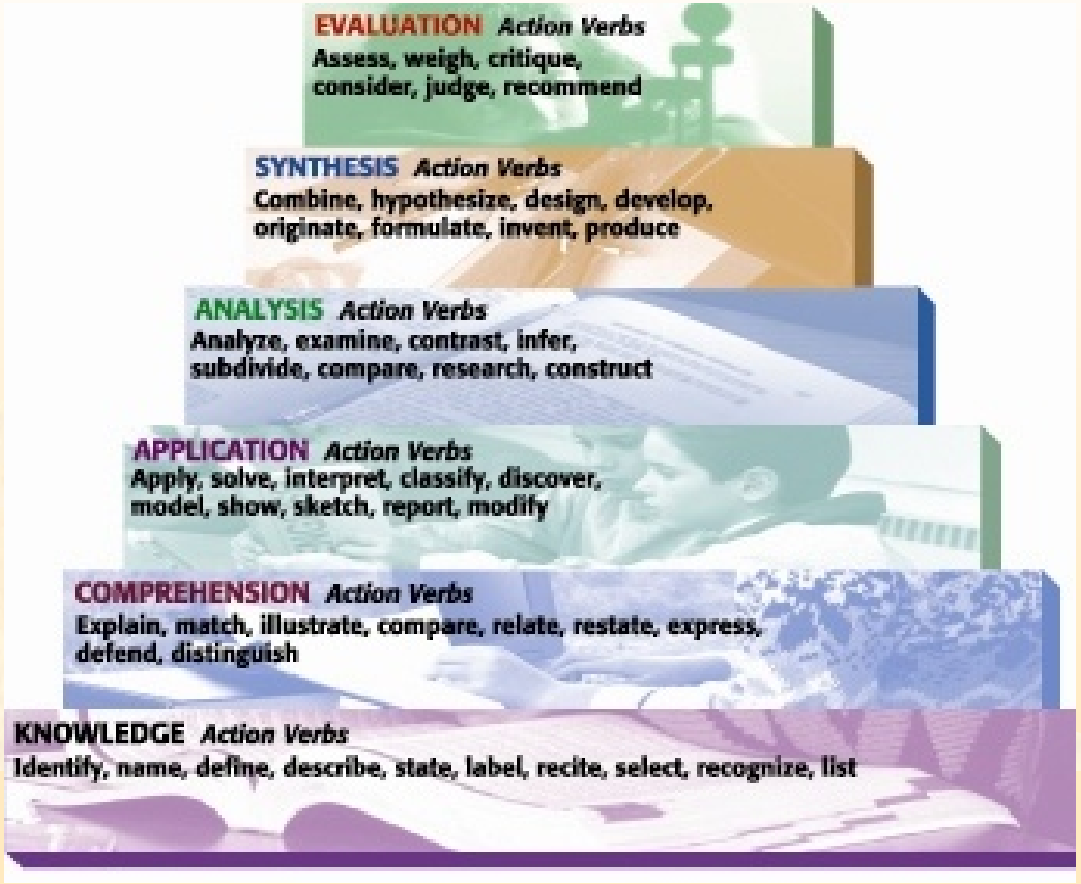
- **Performance Objectives** contain four components:
  - The Stem
  - The Target Performance
  - The Measurement Conditions
  - The Criterion for Success
- Example: The student will be able to identify the subject and verb in a sentence written on the board with 95% accuracy.

The DID Model

- Consider **Bloom's Taxonomy** when articulating objectives
- Bloom's Levels of Cognition
  - **Knowledge** – Recall of facts
  - **Comprehension** – Interpreting facts
  - **Application** – Apply information to new situations
  - **Analysis** – Recognizing components within data
  - **Synthesis** – Creating new ideas for the data provided
  - **Evaluation** – Making thoughtful value judgments

The DID Model

Objective Action Verbs Based on Bloom's Taxonomy



The DID Model

STEP 3 - Establish the Learning Environment

- **Adjust the physical space to support learners**
- **Encourage and support a positive climate**
- **Prepare to keep learners active and engaged**
- **Prepare well-organized and articulated lesson plans**

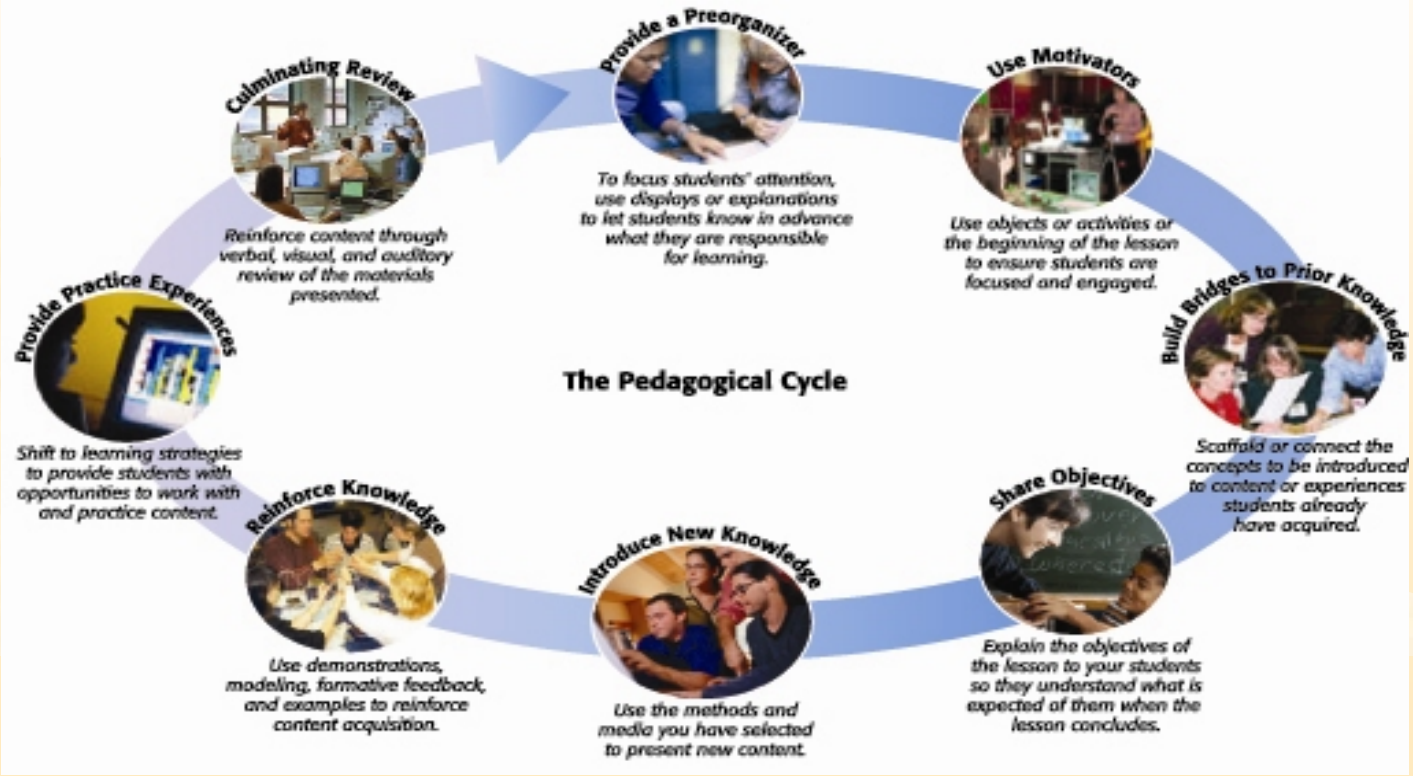
The DID Model

STEP 4 - Identify Teaching and Learning Strategies

- **Review all possible methods and media to help you teach and to help your students learn.**
- **Select those that will help students achieve stated objectives.**

The DID Model

Utilize the steps of the Pedagogical Cycle to help determine your teaching Strategies



The DID Model

The Pedagogical Cycle steps includes:

- Providing pre-organizers to focus attention
- Using motivators to engage learners
- Bridging to past knowledge
- Sharing objectives and expectations
- Introducing new knowledge via varied teaching methods
- Reinforcing knowledge
- Providing practice experiences
- Offering a culminating review

The DID Model

STEP 5 - Identify and Select Support Technologies

- **Select tools to build desired learning environment**
- **Examine technology options**
- **Evaluate appropriateness of the technologies under consideration**
- **Experiment with the technologies selected**

The DID Model

Available Support Technologies

TABLE 2.7 SAMPLER OF SUPPORT TECHNOLOGIES

Audio	*Visual*	*Digital*
Cassette tapes	Videotapes	Computer hardware
Radio	Video discs	Productivity software
Music CD-ROMs	Overhead projector	Educational software
Talking books	Slide projector	Presentation software
Multimedia CDs	Other projection devices	Streaming audio
Recordings: Rhymes and reading	Models, real objects	Streaming video
Recordings: Musical instruments	Boards (bulletin, white, chalk, etc.)	Webcasts
	Digital-analog converter	Internet resources
	Cartoons and drawings	Electronic whiteboards
	Document camera	

The DID Model

STEP 6 - Evaluate and Revise the Design

- **Formative feedback continues throughout all steps of the DID model**
- **Summative feedback is evaluation at the end of the design**
- **Using feedback from final evaluation, revise the design**

Lesson Planning

The PLAN Phase

- **Once design is completed, PLAN your daily lessons**
- **Lesson Plans provide day-to-day snapshots of what will happen**
- **Lesson plan components grow out of the design**

Lesson Planning

The PLAN Phase

The essential components of the Lesson Plan include

- **Ready the Learners**
- **Target specific daily objectives**
- **Prepare the lesson**
  - ✓**Prepare the classroom**
  - ✓**Detail the steps of the Pedagogical Cycle**
  - ✓**Identify technologies and materials**
  - ✓**Check for success**

Action Planning

The ACT Phase

- Review your lesson plan
- The Instructional Action Plan (IAP) is your lesson plan To-Do list
  - Your IAP details everything to be done
- Then you are ready to implement

Action Planning

The ACT Phase (Steps 1-4 of 7)

The Instructional Action Plan includes

1. **Identifying learner preparation activities**
2. **Getting the classroom ready**
3. **Preparing all teaching and learning materials**
4. **Creating your personal prompts**

Action Planning

The ACT Phase (Steps 5-7)

5. **Practicing with your support technologies**
6. **Preparing your formative and summative feedback tools**
7. **Preparing follow-up activities**

Planning for Technology in Teaching and Learning

Remember…

- Technology is a tool that *supports* your design and plans
- Technology should help you do something new or do it better
- Many technologies are available; choose wisely and well