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Engage, Elicit, Experience, Explore: Applying Discovery Learning to Library Instruction - LOEX

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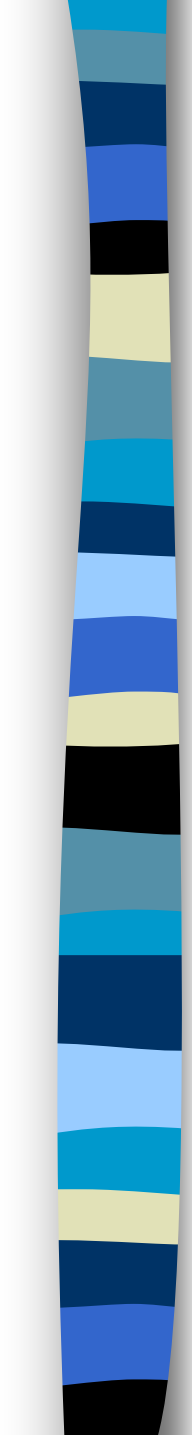


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to
Library Instruction*

LOEX of the West
June 9, 2000

Tracy Bicknell-Holmes
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and
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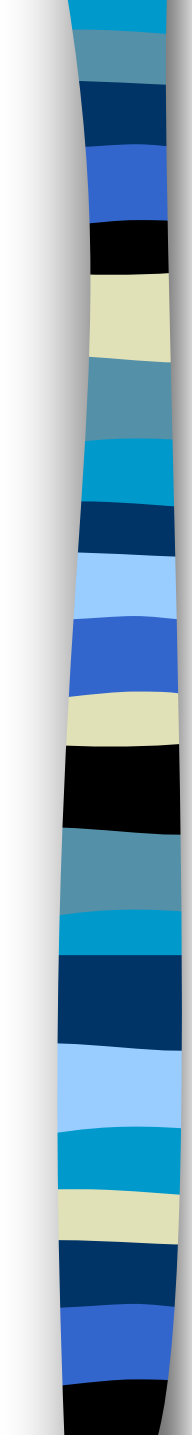
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*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Session Overview

- I. Discovery Learning--Overview
- II. First Group Exercise
- III. Discovery Learning Architectures
- IV. Second Group Exercise
- V. Barriers and Suitability to Multiple Environments
- VI. Summary and Questions



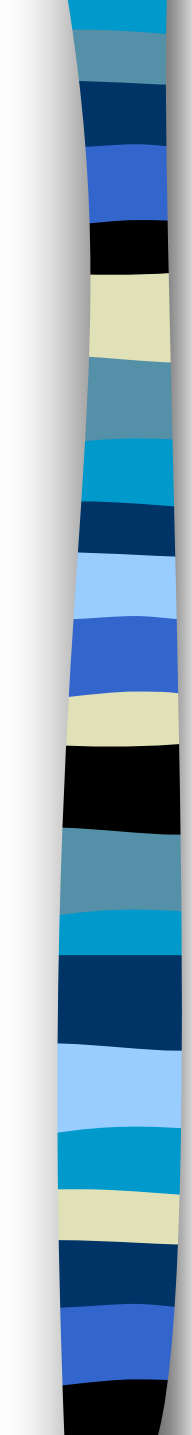
*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

"All genuine learning is active, not passive. It is the process of discovery in which the student is the main agent, not the teacher."

--Adler

"One must learn by doing the thing, for though you think you know it--you have no certainty until you try."

--Sophocles



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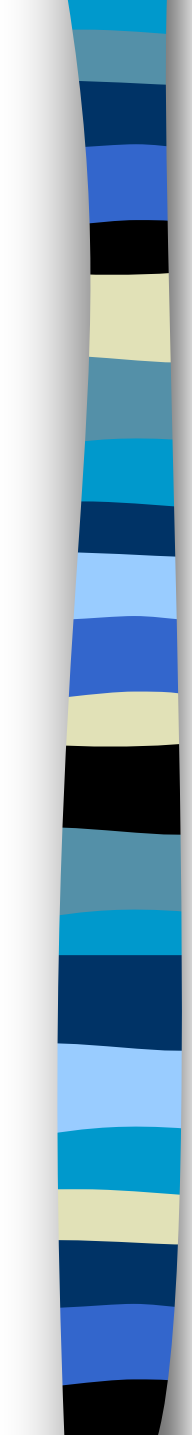
“Active Learning”

Instructional techniques in which learners are motivated to interact directly with curriculum content, not merely gain exposure to it through reading, listening, or observing.

Range from...

- the simple to the complex activities
- the low-risk to high-risk activities
- the spontaneous to scripted activities

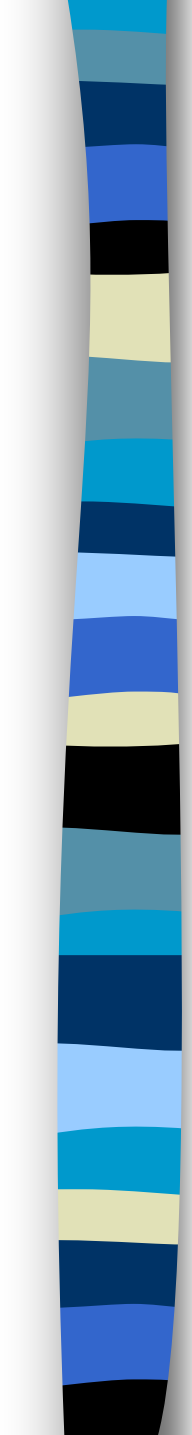
- May occur across learning environments



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“Discovery Learning” (aka “Constructivist Learning”)

- 1) The creation, integration and generalization of knowledge through exploration and problem solving.
- 2) A process of learning driven by interest-based activities in which the learner exercises some control over the sequence and frequency with which they occur.
- 3) An activity which strives to integrate new knowledge with the learner’s existing knowledge base, and can occur through the use of several instructional strategies.



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“Discovery vs. Mastery Learning”

Discovery Learning

Flexible sequence of learning

Knowledge acquisition through exploration and interest-based activities

non-linear

emphasis on learning over content

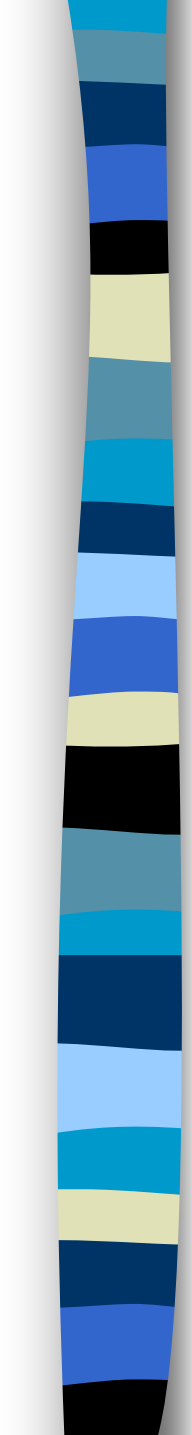
Mastery Learning

Structure sequence of learning

Knowledge acquisition through drills and practice

linear

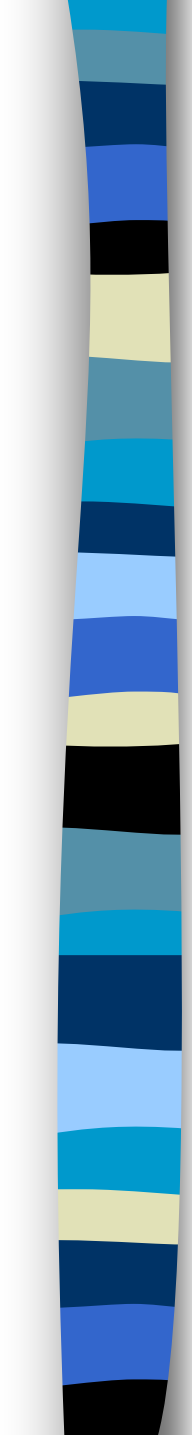
emphasis on specific curricular content



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Characteristics of Discovery Learning

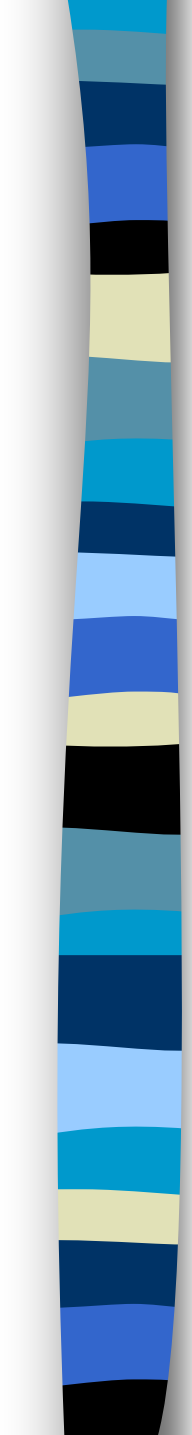
- Students are more than passive listeners--they are engaged in various activities. “Learning by doing.”
- Less emphasis on transmission of information--more emphasis on developing skills
- Students receive timely feedback from instructors or learning modules
- Failure brings on the “teachable moment”



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Characteristics of Discovery Learning--continued

- “Intellectual engagement”--students go beyond learning for the sake of comprehension
- Emphasis on establishing goals, generating questions, problem solving, and seeking answers
- Learning activities are anchored in real-life scenarios and are interest-based
- Learning activities are motivating to ensure engagement



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Why Discovery Learning?

- Has potential for improving the content and delivery of instruction across broad range of topics.
- It permits instructors to select from a variety of tools in order to present knowledge and skills in a manner that makes content adaptable, challenging, and stimulating to students.
- It is a flexible and effective set of teaching tools designed to help instructors keep pace with a constantly changing landscape of instructional technology.



First Hands-On Exercise

15 minutes

Instructions:

- Work in small groups
- Enclosed in the envelope you will find a scenario on green paper
- Read the scenario and discuss it
- Develop a list of words or phrases that you think describe the *type of discovery learning* taking place and the *type of environment* created by the discovery learning situation.
(do not include words like “discovery learning,” “active learning”)
- The group will reconvene and talk about the scenarios



First Hands-On Exercise

Jeopardy

Students are playing a game similar to the TV game show Jeopardy. There are categories listed on a board such as "Boolean Logic", "Internet Search Engines", "Information Ethics", "Catalogs", and "Indexes." In a column beneath the categories are 6 questions. The questions are increasingly difficult as they progress down the column and the point value for the questions matches the difficulty of the question. Students are quizzed on their knowledge of the categories. The students are laughing and encouraging each other and having a good time testing their knowledge.



First Hands-On Exercise

Role Playing

A staff training session is taking place. The staff are learning reference interviewing techniques. Each staff member takes a turn role playing as a staff person on the reference desk and a user asking a question. The staff member who is playing the role of user draws a slip of paper from a hat. The slip of paper includes a topic, the "user's" ultimate information need, how the user is to begin the interaction, and some instructions for how to respond to the questions of the staff member "on the reference desk." The topics are drawn from actual reference desk experiences at the library where the staff members work. Once the reference desk role player correctly guesses the users information need, the instructor leads a group discussion on the interaction and what could have been done to improve it.



First Hands-On Exercise

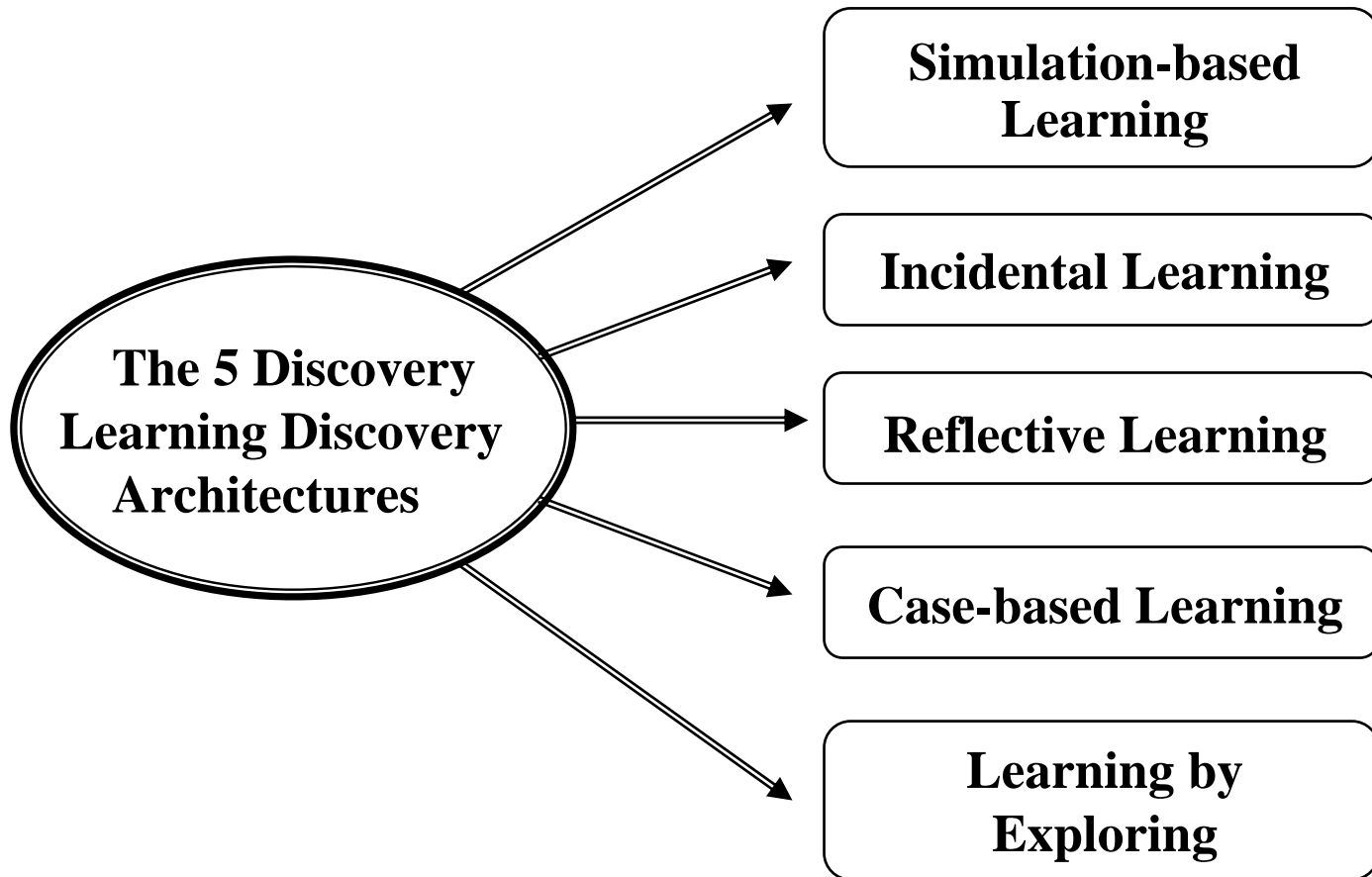
Pets & Babies

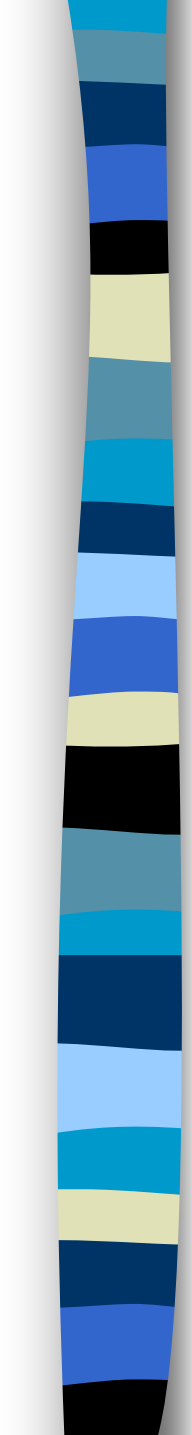
Students are learning about search techniques in a psychology database. They are given the task of finding articles about the trauma that families go through when the family pet bites one of the children in the household. The students use their knowledge of search techniques to put together a search:

(cat or dog) and (bite or biting) and (child or baby or toddler)

However, when they look at their search results, they discover they retrieved articles about kids biting the family pet! They are challenged to explain why they are retrieving these irrelevant articles and to find a way to eliminate them if they can.

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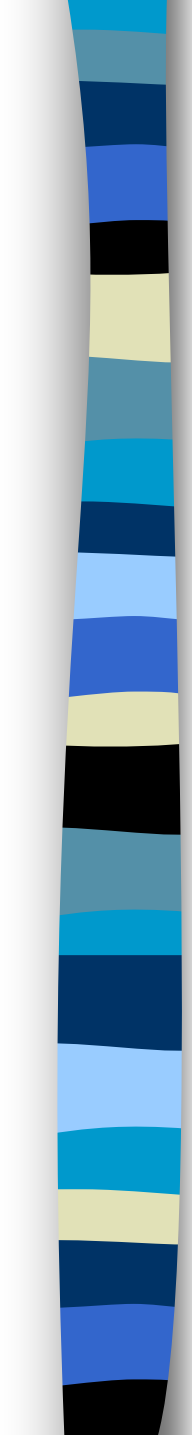
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Simulation-based Learning

Features artificial environments that allow learners to develop and practice skills or understand abstract concepts without fear of failure.

Examples...

- Role Playing Scenario
- Company research workshop
- Creating a template to evaluate web sites



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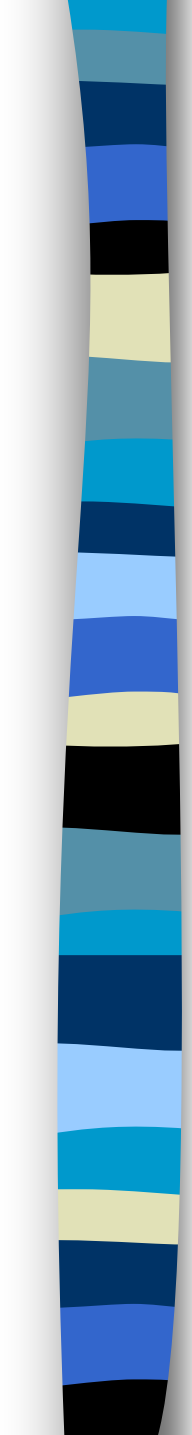
Incidental Learning

Also known as “Learning in Passing”

Features curricular content linked to fun, motivating, game-like activities.

Examples...

- Jeopardy Game Scenario
- Crossword puzzle of terminology
- What’s in the Bag? Exercise
- Battle of the Books



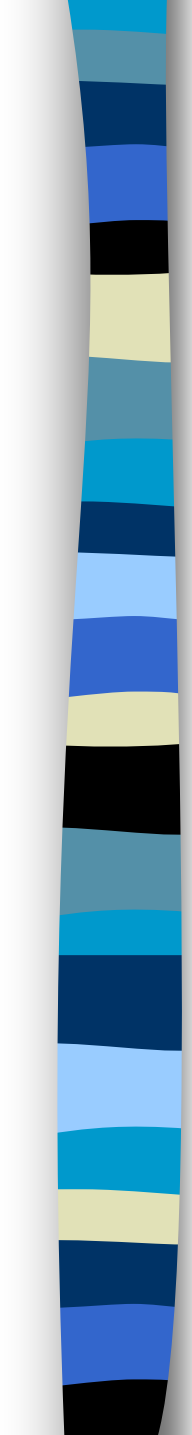
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Reflective Learning

Features the development of comprehension, problem solving and skill building through the use of analytical questioning.

Examples...

- Analyzing public vs private companies
- Searching for university honors programs on the Web
- Library Instruction!



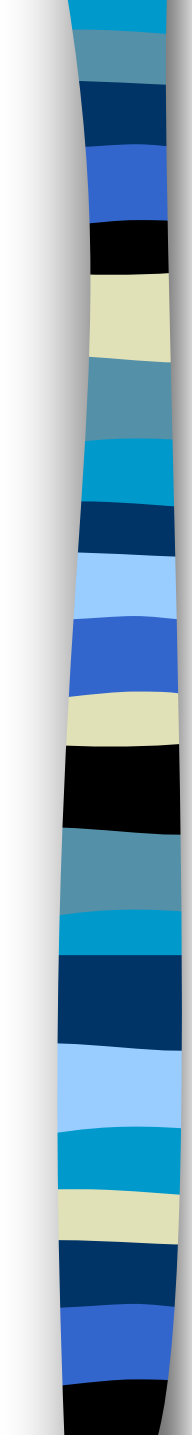
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Case-based Learning

Features learning/problem solving through exposure to stories and vignettes which highlight the application of the select knowledge, skill or principles.

Examples...

- Pets & Babies Scenario
- Parables and fables
- Clue-like game for LI110
- Imagine you are working in a writing lab...



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Learning by Exploring

Also known as “Learning by Conversing”

Features self directed learning by permitting students to navigate through a repository of answers focusing on specific topics or skills.

Examples...

- Resource analysis training (C&I 921)
- Q&A database on resources
- Financial Ratios training.

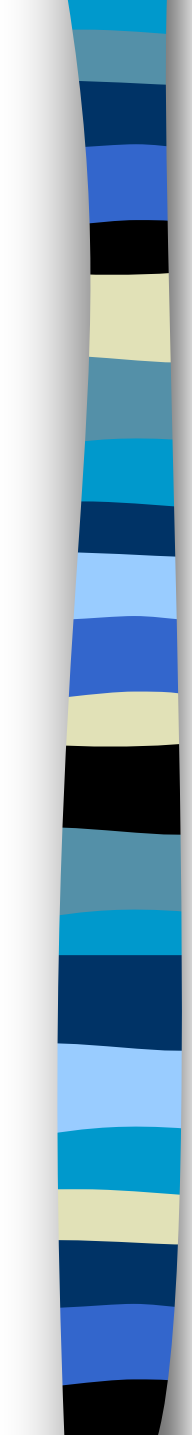


Second Hands-On Exercise

20 Minutes

Instructions

- Work in small groups
- In the envelope you will find a scenario on pink paper
- Read the scenario and discuss it.
- Come up with 2-3 ideas on how to incorporate discovery learning into the instruction situation.
- Try to think of ways to apply at least ***2-3 different discovery learning architectures.***
- The entire group will reconvene and talk about the scenarios



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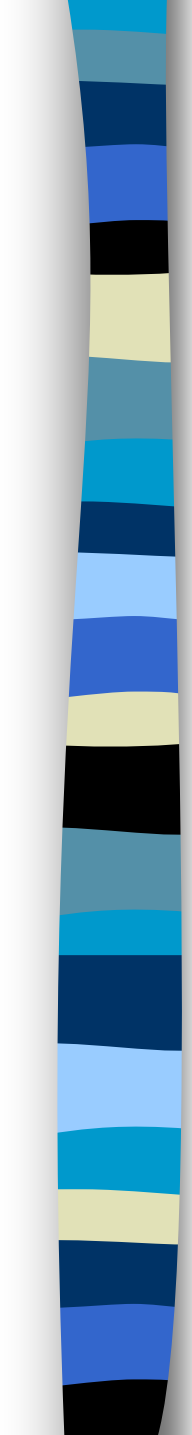
Discovery Learning is Applicable across all formats and types of instruction

Types of Instruction:

- 50 minute, one time session
- Semester long course
- Workshops, seminars, presentations etc.
- Distance education

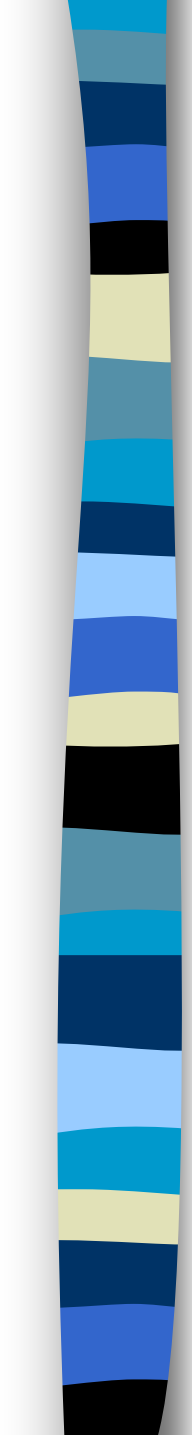
Formats

- Multimedia or computer based instruction
- In class



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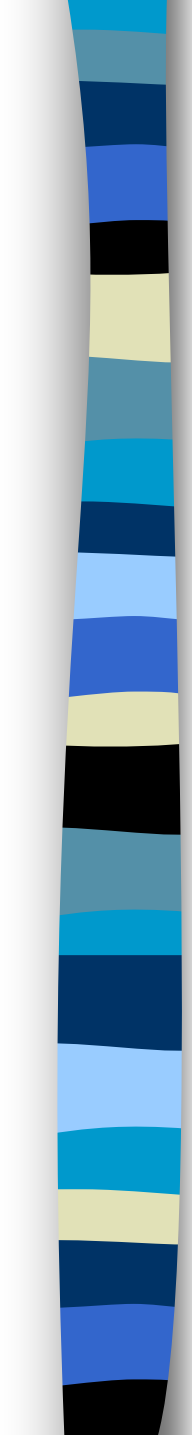
*“Okay...I’m impressed. But if
Discovery Learning is such a flexible
and effective tool for instruction, why
aren’t more people using it?”*



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*“ It won’t adequately cover
the course content.”*

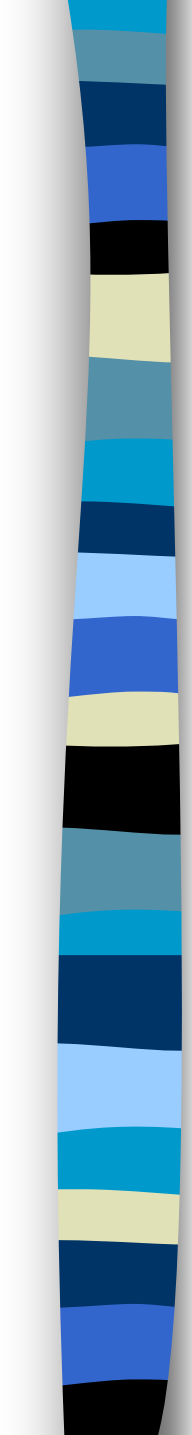
Discovery learning can be augmented with in- or out-of-class reading and writing assignments.



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“It will take too much preparation!”

No less time than revamping old material, or trying to find way of fitting new information into routine ways of teaching.

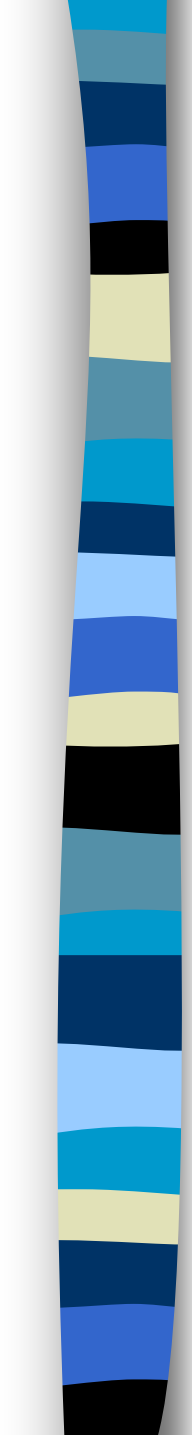


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“My class is too big.”

“My class is too small.”

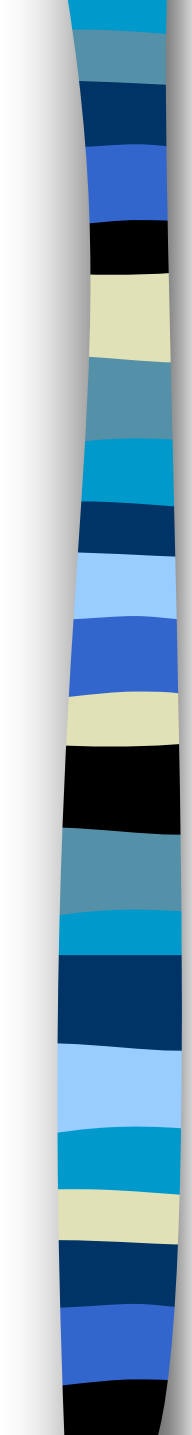
Classes size only means that some types of discovery learning strategies are more appropriate/effective than others.



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*“Students will be resistant to
non-traditional teaching approaches.”*

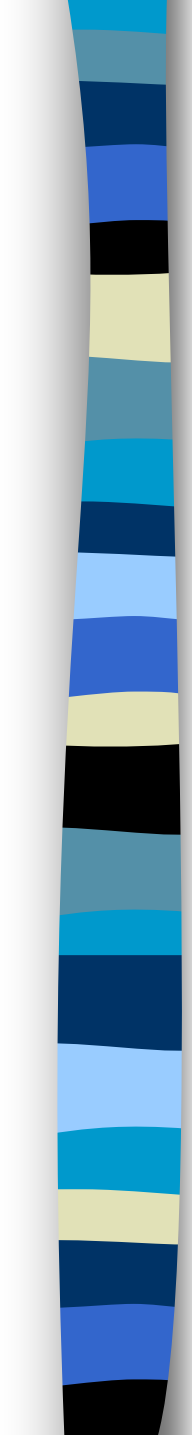
Students are often resistive to changes in what they have become accustomed to.



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*“My lectures and assignments
work just fine!”*

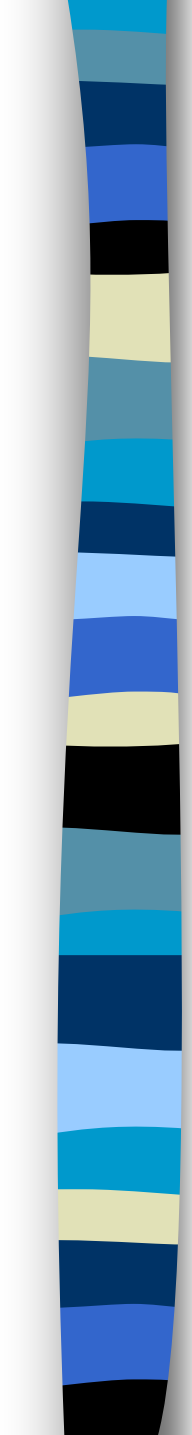
There is nothing wrong with lectures, but what we strive to teach is not always what our students learn.



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“So how do I begin?”

- Read
- Talk with others
- Take risks
- Start small
- Experiment



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***“Good teachers
turn learning
into an adventure.”***

-From a sampler in Walmart



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