

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Conference Presentations and
Speeches

Libraries at University of Nebraska-Lincoln

October 2000

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

Tracy Bicknell-Holmes

University of Nebraska-Lincoln, tbicknel@gmail.com

Paul Hoffman

Follow this and additional works at: https://digitalcommons.unl.edu/library_talks



Part of the [Library and Information Science Commons](#)

Bicknell-Holmes, Tracy and Hoffman, Paul, "Engage, Elicit, Experience, Explore: Applying Discovery Learning to Library Instruction" (2000). *Library Conference Presentations and Speeches*. 29.

https://digitalcommons.unl.edu/library_talks/29

This Article is brought to you for free and open access by the Libraries at University of Nebraska-Lincoln at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Library Conference Presentations and Speeches by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

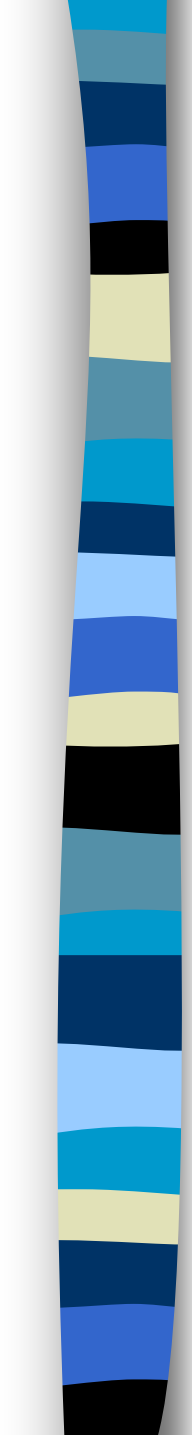


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to
Library Instruction*

2000 Tri-Conference
October 27, 2000

Tracy Bicknell-Holmes
Associate Professor, UNL
and
Paul S. Hoffman
Assistant Professor, UNL

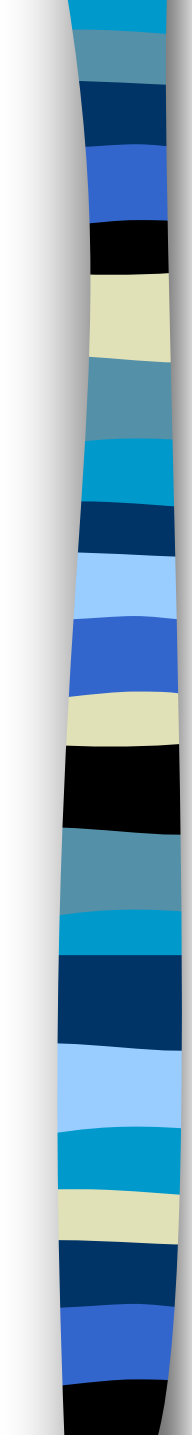
University of Nebraska-Lincoln



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

Session Overview

- I. Discovery Learning--Overview
- II. Discovery Learning Architectures
- III. Barriers and Suitability to Multiple Environments
- IV. Summary and Questions



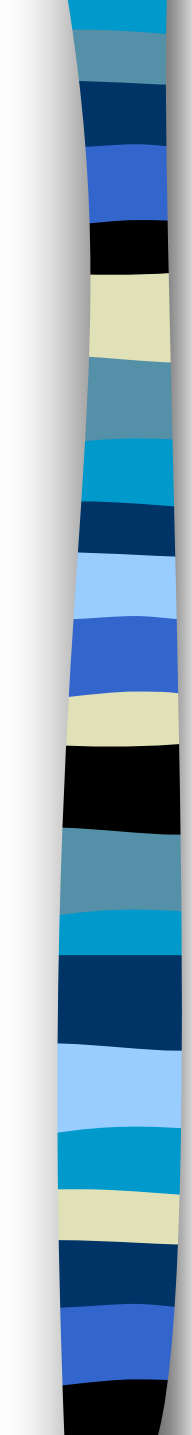
*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

"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



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

“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.

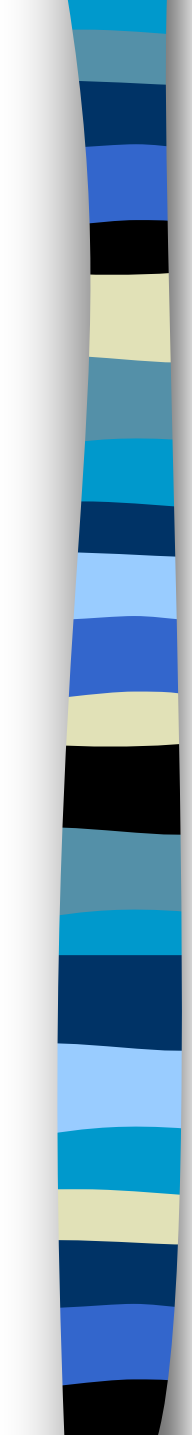
Range from...

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

Instructor Controls the sequence and frequency of the activities

Focuses on step-by-step instructions

May occur across learning environments



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

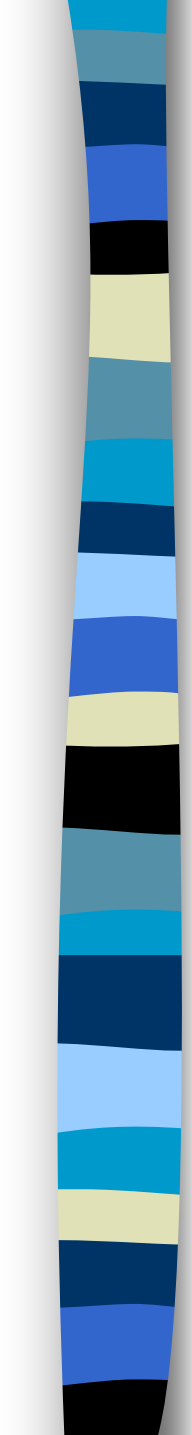
“Discovery Learning” (aka “Constructivist Learning”)

- 1) Students create, integrate and generalize 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.

Focuses on the “Ah Ha! Element”, the discovery of principles and the creation of meaning unique to the student

Contrasting Examples

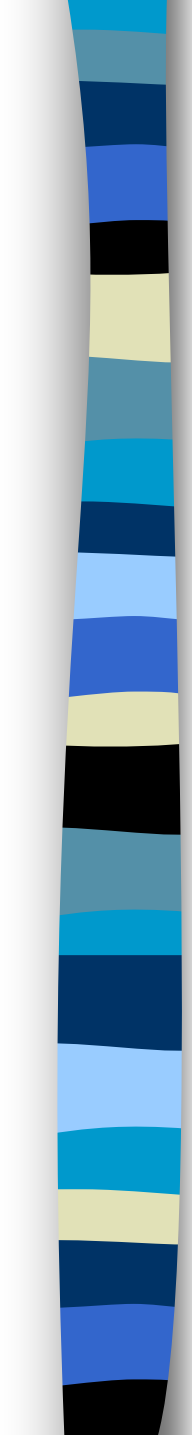
"Active Learning"		"Discovery Learning"
A hands-on demonstration. The instructor demonstrates the mechanics of using a database while the students follow along.		Students are given an assignment. They do not receive instruction in using the database, but learn the mechanics of the database while completing the project.



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

Characteristics of Discovery Learning

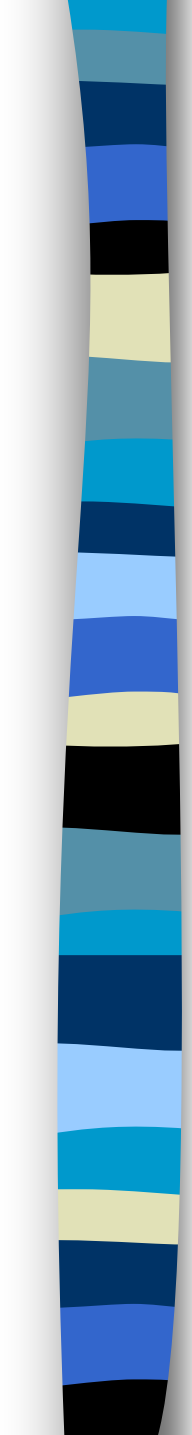
- Students are more than passive listeners--they are engaged in various activities. “Learning by doing.”
- Less emphasis on transmission of information--more emphasis on developing skills
- Students receive timely feedback from instructors or learning modules
- Failure brings on the “teachable moment”



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

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 student interest-based
- Learning activities are motivating to ensure engagement

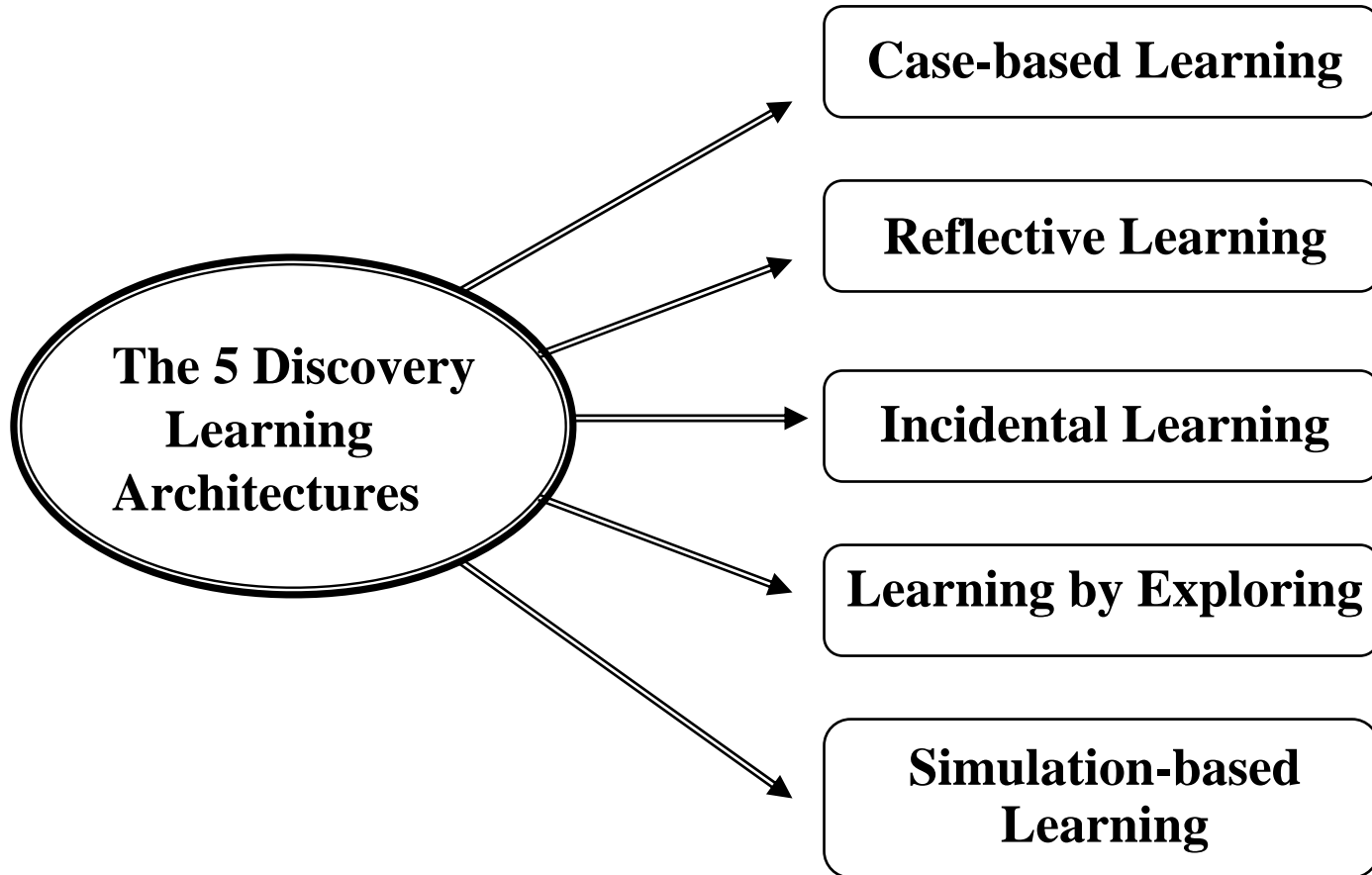


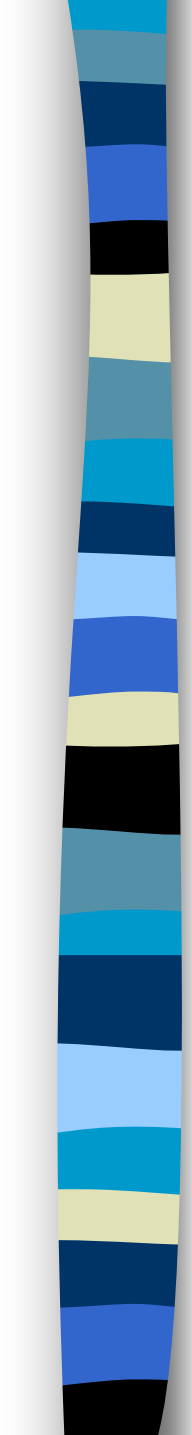
*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

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.

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



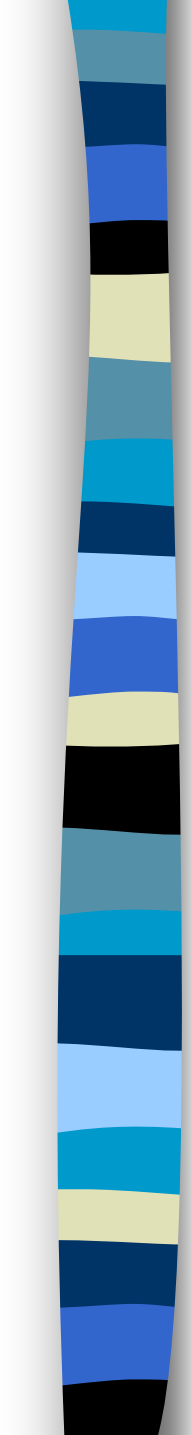


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Case-based Learning

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

Example: *Choosing Resources*

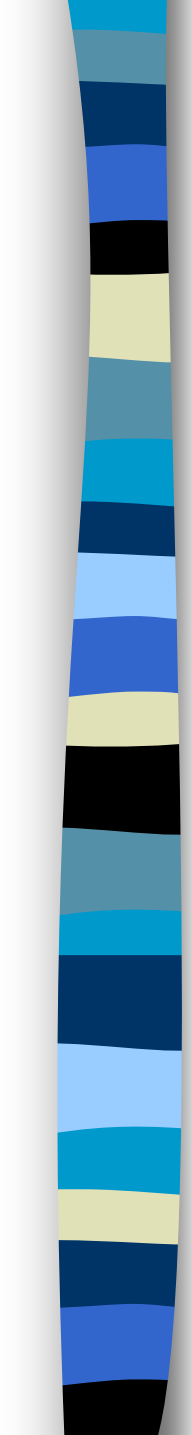


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Case-based Learning - Example

Choosing Resources

<u>Attribute</u>	<u>Application in Example</u>
Scenarios:	Initial research topics
Action Choices:	Choose a resource to Use
Feedback:	Immediate
Failure:	Stories illustrate why a choice failed
Integrates Knowledge/Skills:	Coverage & content of resources
Students' Interests:	Choice of research topic
Different Perspectives:	Allows for differing choices

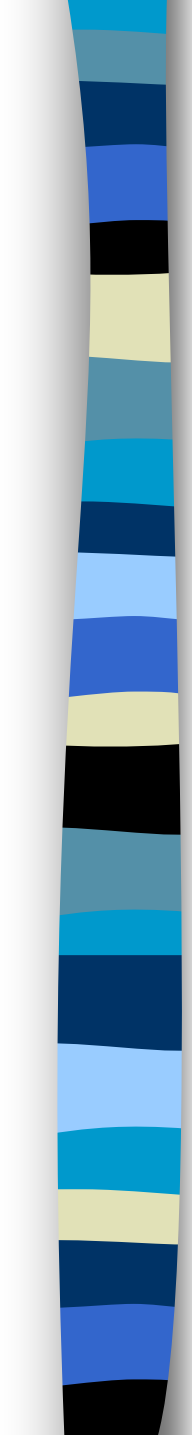


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Reflective Learning

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

Example: *Scholarly Communication Process*

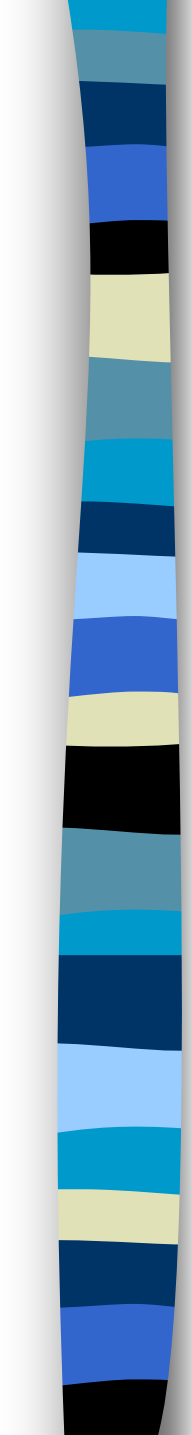


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Reflective Learning - Example

Scholarly Communication Process

<u>Attribute</u>	<u>Application in Example</u>
Modeling Q&A Process:	Asks the types of questions a researcher would at the outset of a project
Deeper Learning:	Problem solving, deduction, prediction
Critical Thinking:	Process of conducting library research
New Viewpoints:	Stimulates ideas beyond simply books and journal articles.



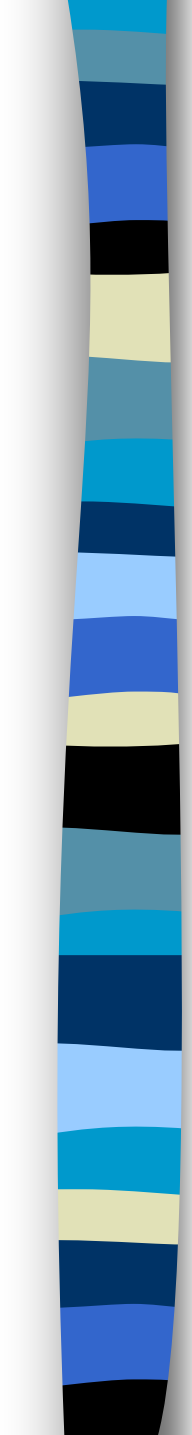
*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Incidental Learning

Also known as “Learning in Passing”

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

Example: *Word Game*

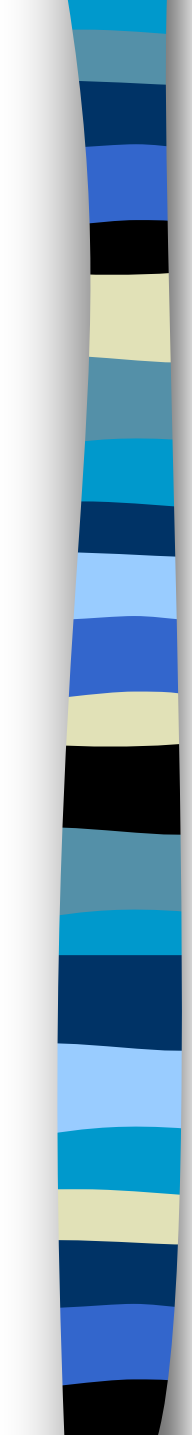


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Incidental Learning - Example

Word Game

<u>Attribute</u>	<u>Application in Example</u>
Fun:	Word Puzzle
Learn in Passing:	Must answer questions to figure out the words in the puzzle
Motivational:	Curiosity about the Quote
Memory Cues:	Quote, words in the puzzle, the pathways the group took to answer the questions in the puzzle



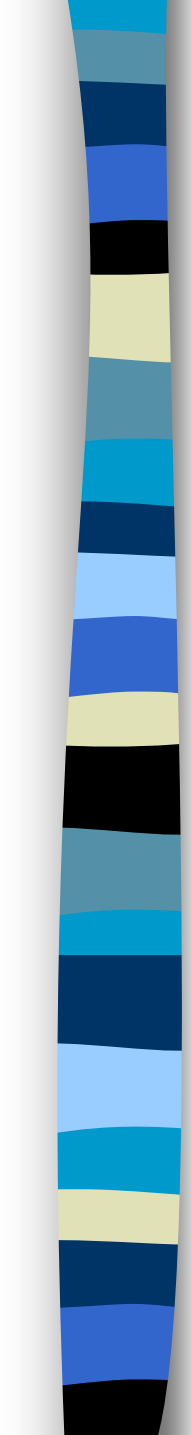
*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

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.

Example: *Services in the Library*



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

Learning by Exploring - Example

Services in the Library

Attribute

Application in Example

Conversational:

Students ask questions and receive answers based on what they are learning

Feedback:

Immediate

Failure:

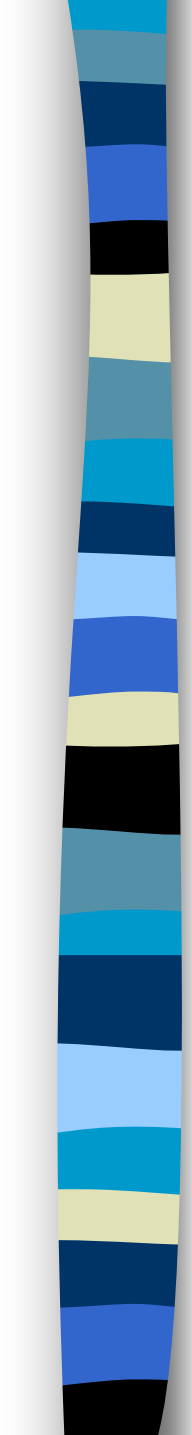
Requires follow-up to correct

Students' Interests:

Real-life scenarios with a tangible product produces

Integrates Knowledge:

Answers direct students to engage in skill building activities using the info they just received

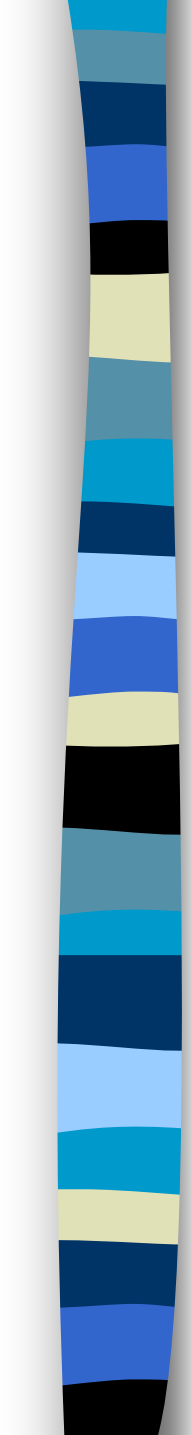


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Simulation-based Learning

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

Example: *The Candy Database*

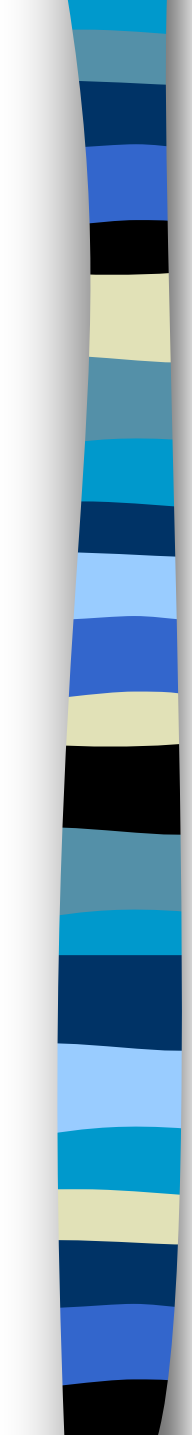


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

Simulation-based Learning - Example

Candy Database

<u>Attribute</u>	<u>Application in Example</u>
Artificial Environment: Realistic:	Database of Candy Simulates real search & retrieval of items in a database
Complex Skills:	Boolean Logic, adjacency, terminology, etc.
Time to Pause & Study Problem:	Action can be stopped to discuss results or potential search strategies



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

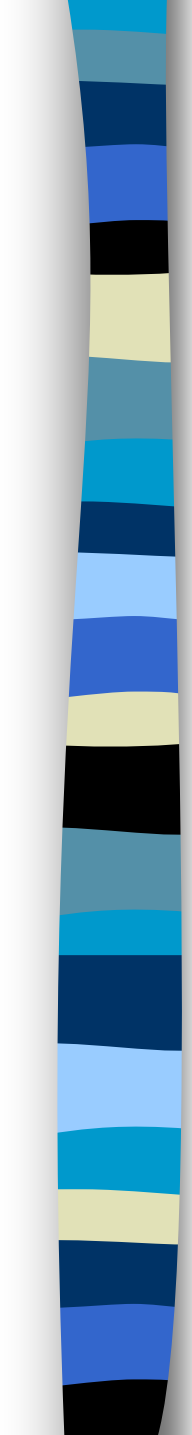
Discovery Learning is applicable across all formats and types of instruction

Types of Instruction:

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

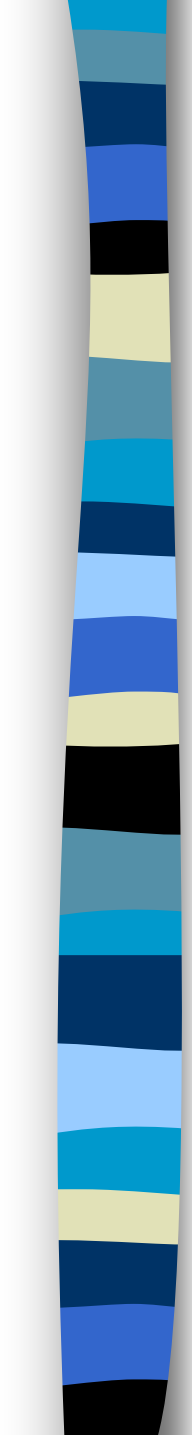
Formats

- Multimedia or computer based instruction
- In class



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

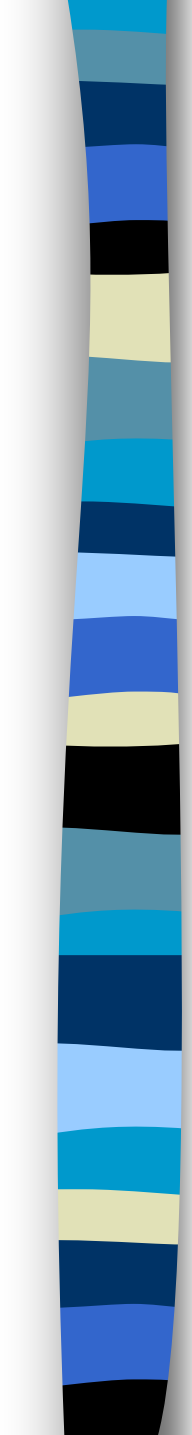
*“Okay...I’m impressed. But if
Discovery Learning is such a flexible
and effective tool for instruction, why
aren’t **more** people using it?”*



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

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

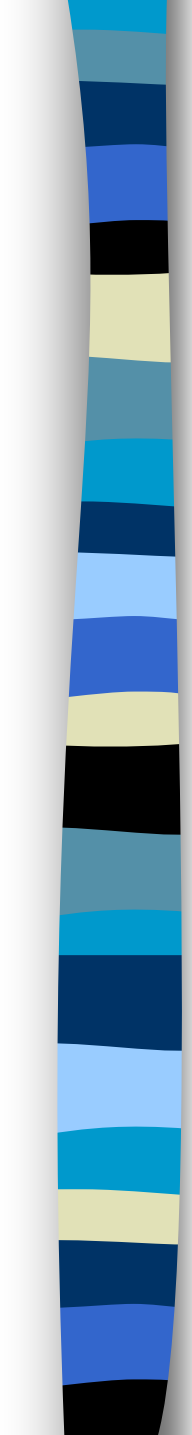
Discovery learning can be augmented with in- or out-of-class reading and writing assignments.



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

“It will take too much preparation!”

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

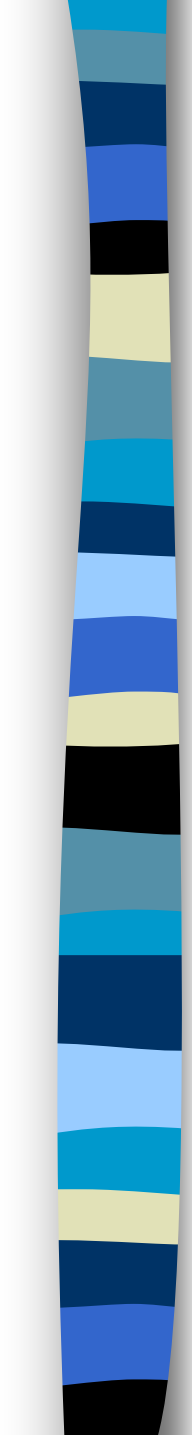


*Engage, Elicit, Experience, Explore:
Applying Discovery Learning to Library Instruction*

“My class is too big.”

“My class is too small.”

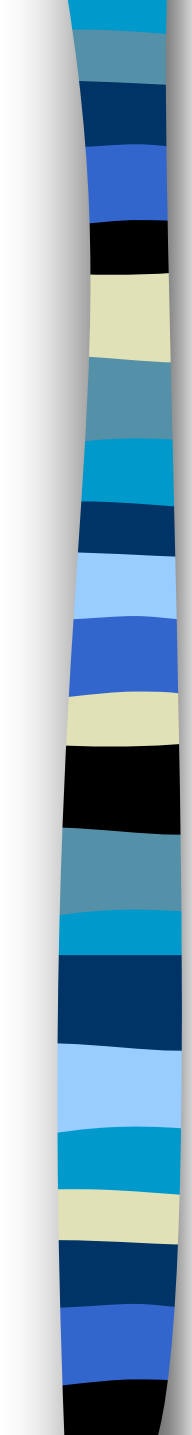
Classes size only means that some types of discovery learning strategies are more appropriate/effective than others.



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

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

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



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

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

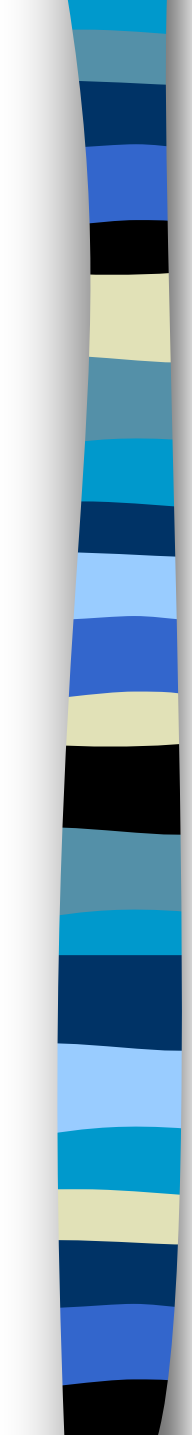
There is nothing wrong with lectures, but what we strive to teach is not always what our students learn.



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

“So how do I begin?”

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



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

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

--Walmart sampler



How to Contact Us

Tracy Bicknell-Holmes

N203A Love Library
PO Box 880410
University of NE-Lincoln
Lincoln, NE 68588-0410
Phone: (402) 472-2512
Fax: (402) 472-5131
tbicknell-holmes1@unl.edu

Paul S. Hoffman

N219 Love Library
PO Box 880410
University of NE-Lincoln
Lincoln, NE 68588-0410
Phone: (402) 472-2554
Fax: (402) 472-5131
phoffman2@unl.edu