

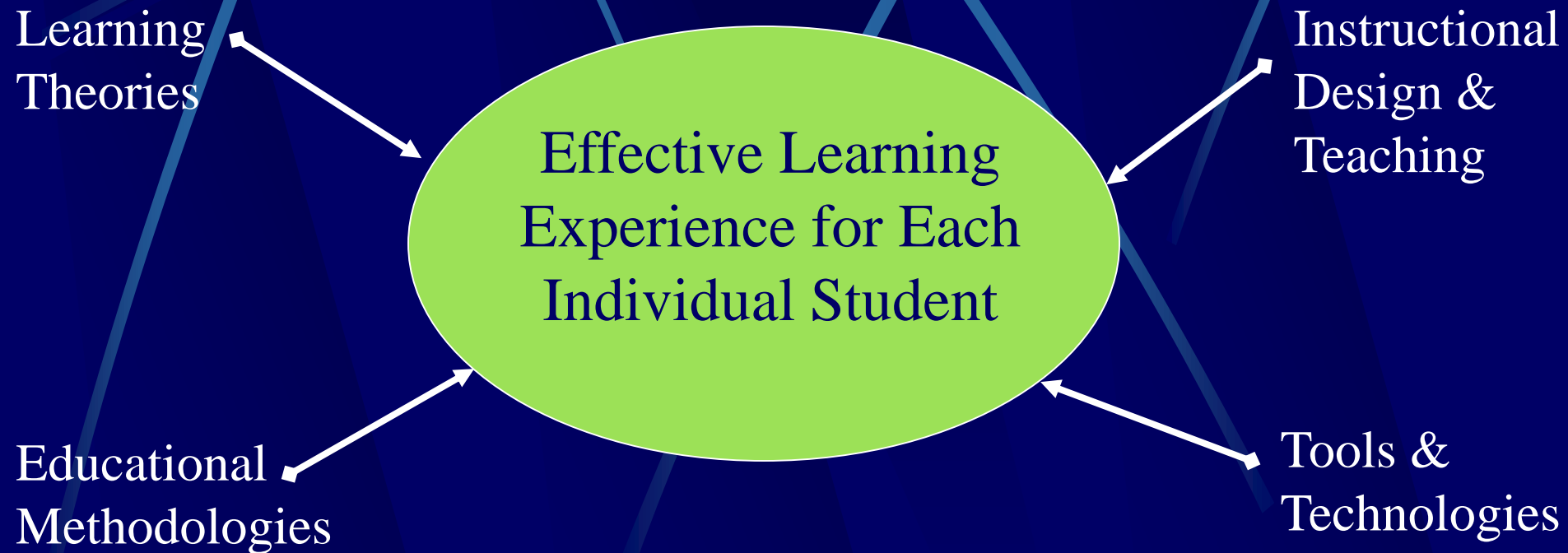
# **Educational Methodologies and Enabling Technologies**

**Benay Dara-Abrams, Ph.D.**

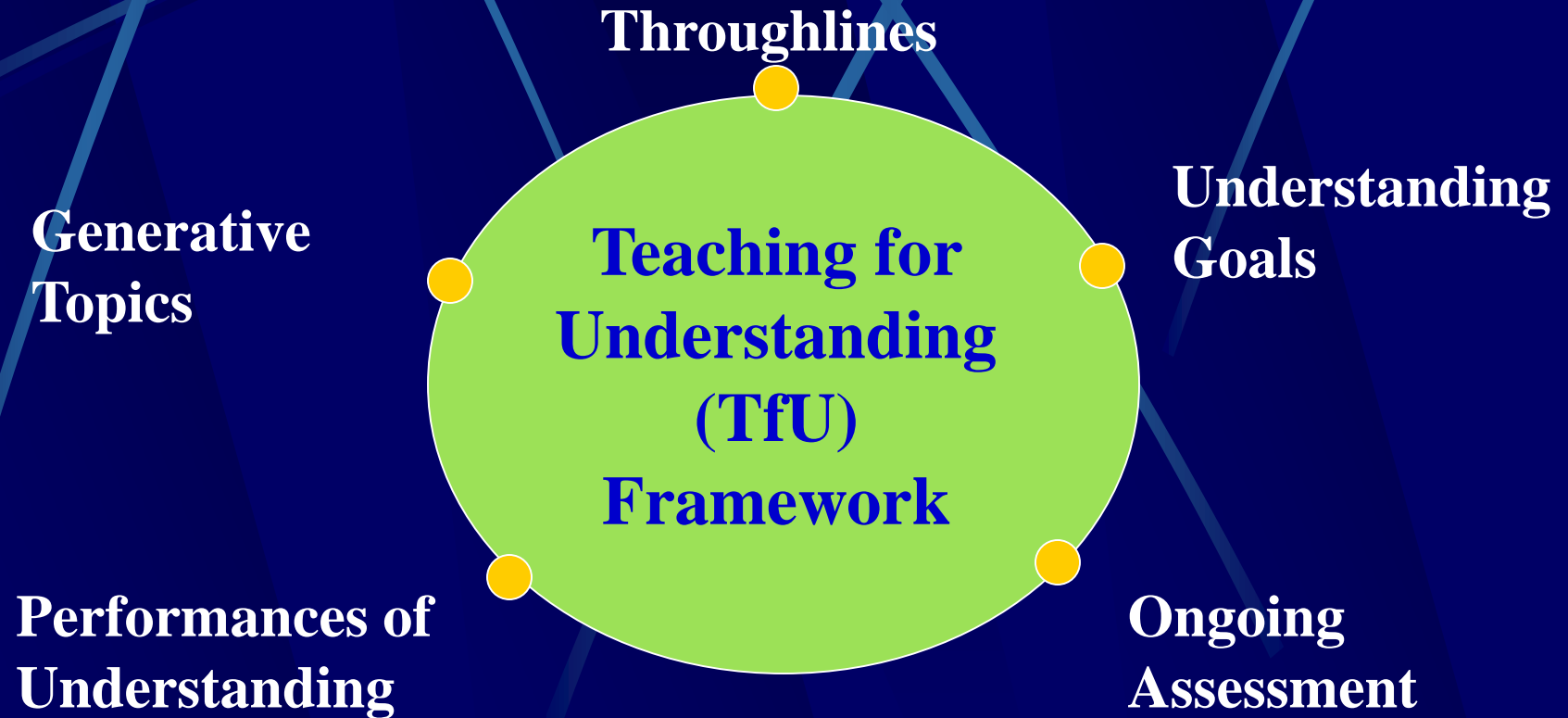
**Santa Clara University**

**May 15, 2003**

# Focus on Learning



# Teaching for Understanding



# Throughlines and Generative Topics

- **Throughlines** — ideas that are developed across the curriculum.
- **Generative Topics**
  - What will students learn about?
  - Why is this worth learning?
  - Central to one or more disciplines or subjects
  - Accessible and interesting to students
  - Connected to instructor's passions.

# Understanding Goals

- What will students come to learn in this unit?
- What the instructor/teacher wants the students to learn
- Explicitly stated
- Public goals
- Focused on key concepts, methods, purposes, and forms of expression
- Linked to assessment criteria

# Ongoing Assessment

- Asks the question: how will you and your students know what they understand?
- Students reflect on their own learning experiences throughout the process
- Multiple ways for students to demonstrate to the teacher and to themselves what they understand.

# Performances of Understanding

- Asks the question: what will students do to build and demonstrate their understanding?
- Demonstrate to instructor and to themselves what they have learned
- Presentations
- Written reports
- Portfolios
- Hands-on activities

# Entry Point Framework

- Narrative – introduce through story-telling
- Numerical – engage through computation
- Logical – deduction to learn new concepts
- Existential/Foundational – ask questions
- Aesthetic – engage senses through artworks
- Hands-On – experiential, manipulation
- Interpersonal – cooperative learning



# Multiple Representations

- Family of representations
- Activate different intelligences
- Present new concepts in multiple ways
- Content presentation activates more than one intelligence

# Problem-Based Learning

- Process Skills + Content Knowledge
- Analyze and solve real-world problems
- Find, evaluate, use learning resources
- Demonstrate communication skills
- Case study analysis
- Case study development

# What is E-Learning?

“Learning experiences enabled or enhanced by technological resources that support the development, exchange, and application of knowledge, skills, attitudes, aspirations, or behaviors for the purpose of improving teaching and increasing student achievement.”

National Staff Development Council

# Hybrid/Blended Learning

- Face-to-Face (F2F)
- Online Learning
- Move to 7 X 24 learning experience
- Structured discussions supplement class session
- Encourages quiet students to participate
- Opportunity for reflection
- Build & apply knowledge incrementally

# Enabling Technologies

## Educational Adaptive Hypermedia

## Web-Based Learning

User-  
Adaptive  
Systems

Hypermedia

Intelligent  
Tutoring  
Systems

Computer-  
Mediated  
Communication

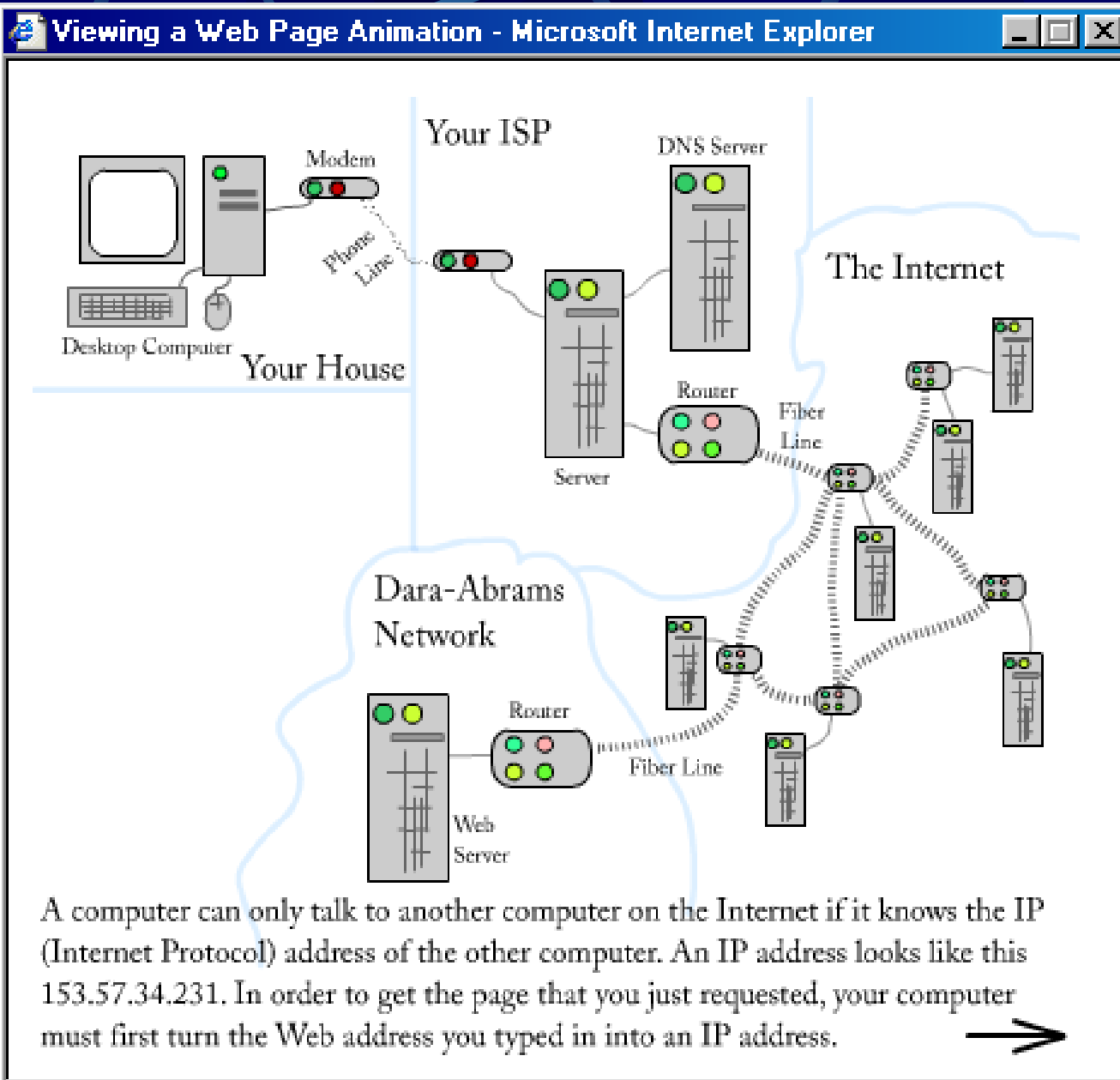
Multimedia  
Technologies

Technology Foundation  
Computer Science

# Explanation Variants

Intelligence	Explanation Variant	Technology
Linguistic	Prose, Textual Explanation	HTML, Word
Logic-Math	Bulleted List	HTML list
Spatial	Diagrams, Graphics, Movies	Flash, iMovie, PowerPoint
Musical	Sound Effects, Sound Track	Flash, Audio
Intrapersonal	Self-Guided Problem Analysis, Journals	HTML forms with script
Interpersonal	Discussions – problems, cases, questions	Threaded discussion
Naturalist	Categories and Metaphors	HTML lists, Flash
Bodily-Kinesthetic	Hands-on Exercises Simulations	Scripts Virtual Environments

# Spatial and Musical



# Interpersonal

Legacy Systems Integration - Section 1: Front-end Integration - Microsoft Internet Explorer

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**Legacy Systems Integration**  
*Section 1: Front-end Integration*

Please read the messages in the topic entitled Web front-end for legacy application before the messages in the topic entitled Case study of time card application, and please participate in the discussion while you are here.

[Return to the beginning of the section.](#) | [Return to overview.](#) | [Continue to next section.](#)

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**Legacy Systems Integration - 1) Front-end Integration**

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<a href="#">RE: Case study of time card application</a> new	Susan Hardin	08-24-2001 15:44
<a href="#">RE: Case study of time card application</a> new	Benay Dara-Abrams	08-24-2001 15:46
<a href="#">RE: Case study of time card application</a> new	Paul Krugman	08-24-2001 17:52
<a href="#">RE: Case study of time card application</a> new	Benay Dara-Abrams	08-24-2001 17:58
<a href="#">RE: Case study of time card application</a> new	Usha Sekar	09-03-2001 20:14
<a href="#">RE: Case study of time card application</a> new	Benay Dara-Abrams	09-03-2001 21:06
<a href="#">RE: Case study of time card application</a> new	Ramesh	09-10-2001 15:57
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<a href="#">RE: Case study of time card application</a> new	Benay Dara-Abrams	08-30-2001 10:16
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<a href="#">RE: Case study of time card application</a> new	Abdul Aleem	09-02-2001 08:41
<a href="#">RE: Case study of time card application</a> new	Benay Dara-Abrams	09-02-2001 08:59
<a href="#">RE: Case study of time card application</a> new	Andrew Wall	09-04-2001 09:23
<a href="#">Web front-end for legacy application</a> new	Benay Dara-Abrams	08-24-2001 15:33
<a href="#">RE: Web front-end for legacy application</a> new	Jim Letter	08-24-2001 15:40
<a href="#">RE: Web front-end for legacy application</a> new	Benay Dara-Abrams	08-24-2001 15:50

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# Intrapersonal

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**Legacy Systems Integration**  
*Section 1: Front-end Integration*

The A Corporation was founded in the 1970s in order to provide lower-cost computers with advanced technology while maintaining compatibility with IBM mainframes, which then dominated the market. By the 1990s, the A Corporation was an established computer manufacturer, software systems developer, and service provider with an international market.

The A Corporation had a vacation scheduler application running on a mainframe to keep track of each employee's vacation days. Employees complained about how difficult it was to enter their data through the cumbersome user interface, but the vacation scheduler application itself was working quite well.

The corporate intranet team decided to retain the vacation scheduler application and use front-end integration, placing an HTML (Hypertext Markup Language) form in front of the vacation scheduler application for data entry. One of the software engineers on the team wrote a CGI (Common Gateway Interface) script to accept and check the data entered via the HTML form and pass it back to the vacation scheduler program.

**Please consider the decision made by the A Corporation intranet team and answer the following questions.**

1. What do you think were some of the benefits of the new Web GUI (Graphical User Interface) front-end for the vacation scheduler application?

2. Why do you think the A Corporation decided to do front-end integration for the vacation scheduler application?

Once you have answered both of these questions, please press the submit button below.

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