

# **ECI 617**

## **Foundations of Instructional Design and Technology**

**Grounded Design in Context**

Ask what people hope to get out of this session.

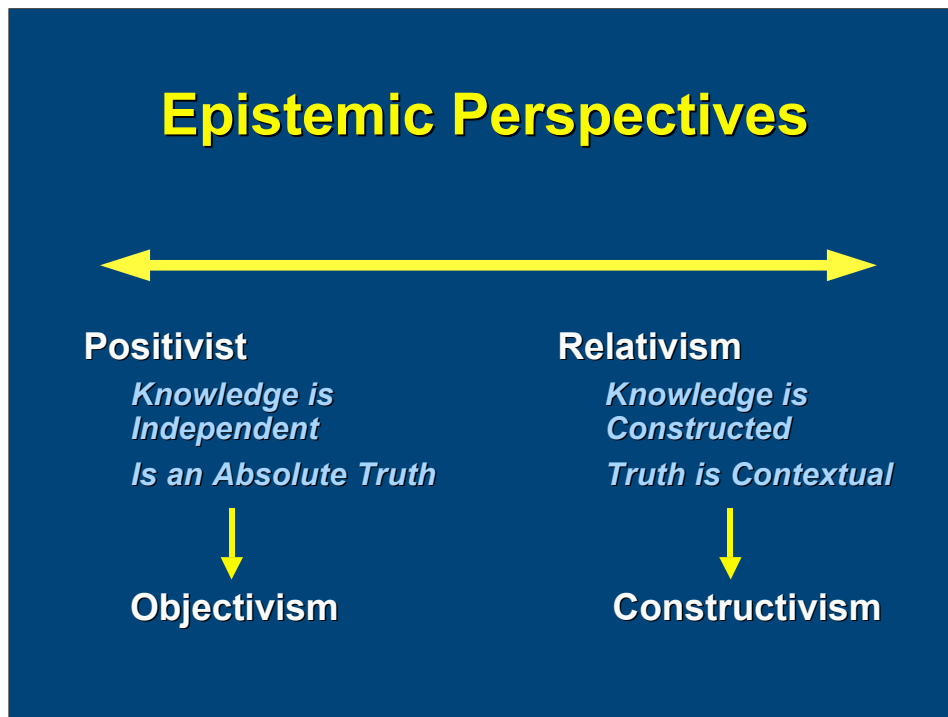
Ask what models/learning theories people tried to apply in the development of interactive system and what problems they faced.

# Epistemology

- ▶ Nature of knowledge & understanding
- ▶ Formal or tacit
- ▶ Actions based upon beliefs

What is the definition of epistemology?

# Epistemic Perspectives



In positivism knowledge exists independently of human intervention with it. Learning is a process of discovering these truths. In general, there is an absolutely right truth.

Relativism views knowledge as a cultural product. In this case, truth is contextual and dependent upon cultural and individual construction.

# Design Frameworks



## Objectivism

*Transfer of Learning*

*Specific Goals*

*Externally  
Engineered  
Knowledge*

## Constructivism

*Construction of  
Knowledge*

*Context for  
negotiation*

*Internally  
Constructed  
Knowledge*

The resultant design frameworks from our two epistemic perspectives are Objectivism and Constructivism. Those terms reflect the stance of their epistemologies.

### Objectivism

This is concerned primarily with the delivery of instruction. As such, success is gauged by the fidelity of the learners recreation of the objectives and goals.

Constructivism is concerned with generative materials that help the learner develop personal meaning(s). Negotiation takes place both socially and with the information accessed.

# Design Practices



## Instructional

*Classroom*  
*Directed*  
*Defined objectives*  
*Teacher driven*  
*Teacher assessed*

## Constructional

*Environment*  
*Learner-centered*  
*Authentic problems*  
*Context driven*  
*Shared assessment*

The outcomes of our two extremes are strikingly different in practice. Note how rare true constructional environments really are.

### Instructional

The **classroom** remains primary, and instruction is directed by both the teacher and the instructional design.

Objectives are arrived at during the Analysis stage, often by individuals external to the actually act of teaching.

The teacher drives the transfer of these objectives, and is responsible for assessing student performance.

### Summary

- Importance of goals/objectives
- Goals drawn from domain/experts
- Goals sequenced into learning hierarchies
- Progression from lower to higher learning
- Learner as empty vessel
- Direct instruction

### Constructional

The learning environment replaces the technology of the classroom as a place optimized for learner centered activity.

## Systematic Instruction

- ▶ Both frameworks are systematic
- ▶ Goals are used, but differ
  - *Objectivist - prescriptive*
  - *Relativist - generative*
- ▶ Institutional context of rigor

This is not a debate between systematic and unsystematic. Rather, it is the form the system takes in each place.

The text shows a difference in goals: one is prescriptive while the other may be said to be generative. Goals exist in both cases, but who sets the goals and how they are completed are vastly different.

The institutional epistemology works greatly against relativist kinds of instruction. Yet stepping outside of school shows that other disciplines have a greatly different epistemology. Music, for example, is often a more relativistic field because most practitioners do not believe there is a single technique. When they do, the resultant music instruction becomes objectivist.

## Grounded Design

- ▶ **Defensible**
  - *Based on research and theory*
  - *Empirically validated*
- ▶ **Linked to proven methods**
- ▶ **Must apply to wide range of settings**
- ▶ **Validated iteratively**

Grounded approaches emphasize the deliberate alignment of core foundations and assumptions, and the linking of methods and approaches which are consistent with their corresponding epistemological frameworks.

What is empirical? Work that is based upon observation or experience.

## **A Constructivist ADDIE**

- ▶ What would constructivist ID be?
- ▶ Use the chart on page 76 to adapt
- ▶ Fill out the provided form

## Can Both be Right?

- ▶ Debates from the extremes
- ▶ Both valid if grounded
- ▶ Not all instruction fits the dichotomy

## Questions

- ▶ Can a designer be both?
- ▶ Can both be used in one design?
- ▶ Or is there a better question?