Chapter 14
The Architecture of Instructional Theory

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Editors' Foreword

Vision

- To relate instructional theory and instructional design theory

Kinds of Theory

- Two Kinds of Theory: Instructional and instructional-design
- Design Theory: Applies across all domains of design
- Domain Theory: Is particular to a domain of design, e.g. instruction
- A basis for the design theory/domain theory distinction: multiple categories of engineering design knowledge
- Design instrumentalities and instructional design theory (functional decomposition versus process decomposition)

Design Layering by Functional Decomposition

- Employed in numerous design fields, including architecture, computer and software design, multimedia design, and others
- Being aware of layers allows us to design for dynamic and changing contexts.

Design Layering and ID

- The layering notion for ID includes:
  - Content layer
  - Strategy layer
  - Message layer
  - Control layer
  - Representation layer
  - Media-logic layer
  - Data management layer

Design Languages

- Design languages and natural languages differ in primitive terms, syntax, and semantics.
- A design language is abstracted through patterns from previous designs.
- As design languages evolve and we become fluent in using them, the result is advances in design sophistication, effectiveness, productivity, and quality of designs.

Operational principles and instructional theory

- Operational principles link design layers and design languages to instructional theory.

Layers, languages, operational principles, and instructional theory

- ID theory provides a structural framework of layers within which instructional theories can be analyzed and compared.
- There is a great deal of work in instructional theory that is related to layers.

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