

Chapter 3 First Principles of Instruction

M. David Merrill

Editors' Foreword

Vision

- To distill a set of interrelated prescriptive instructional design principles

Demonstration Principle

- Instruction should provide a demonstration of the skill **consistent** with the type of component skill: kinds-of, how-to, and what-happens.
- Instruction should provide **guidance** that relates the demonstration to generalities.
- Instruction should engage learners in **peer-discussion** and **peer-demonstration**.
- Instruction should allow learners to observe the demonstration through **media** that are appropriate to the content.

Application Principle

- Instruction should have the learner apply learning **consistent** with the type of component skill: kinds-of, how-to, and what-happens.
- Instruction should provide intrinsic or corrective **feedback**.
- Instruction should provide **coaching**, which should be gradually withdrawn to enhance application.
- Instruction should engage learners in **peer-collaboration**.

Task-Centered Principle

- Instruction should use a **task-centered** instructional strategy.
- Instruction should use a **progression** of increasingly complex whole tasks.

Activation Principle

- Instruction should activate relevant cognitive structures in learners by having them recall, describe, or demonstrate relevant **prior knowledge** or experience.
- Instruction should have learners **share** previous experience with each other.
- Instruction should have learners recall or acquire a **structure** for organizing new knowledge.

Integration Principle

- Instruction should integrate new knowledge into learners' cognitive structures by having them **reflect** on, discuss, or defend new knowledge or skills.
- Instruction should engage learners in **peer-critique**.
- Instruction should have learners create, invent, or explore **personal ways to use** their new knowledge or skill.
- Instruction should have learners **publicly demonstrate** their new knowledge or skill.

Four-Phase Cycle of Instruction

- The four principles of activation, demonstration, application, and integration form a four-phase cycle of instruction.
- At a deeper level there is within this cycle a more subtle cycle consisting of *structure—guidance—coaching—reflection*.

A Scale for Rating Instructional Strategies

- The quality of the instruction will improve with each principle that is added: demonstration, application, task-centered, activation, and integration.