Constructivism

Individuals are active agents in constructing their own knowledge during the course of interaction with the environment. Thinking is an active process whereby people organize their perceptions of the world.

Goals of Constructivist Teaching:

• Encourage knowledge formation
• Encourage metacognitive processes for judging, organizing, and acquiring information
**Example of Constructivist Teaching:**

Robin Williams character in Dead Poet’s Society is a prime example of constructivist teaching. He encourages:

- Personal interest
- Background knowledge
- Active learning
- An emphasis on personal meaning
- Critical thinking

<table>
<thead>
<tr>
<th></th>
<th>Direct Instruction</th>
<th>Coop Learning</th>
<th>Discovery Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Big Wigs&quot;</td>
<td>Ausubel</td>
<td>Vygotsky</td>
<td>Piaget, Bruner</td>
</tr>
<tr>
<td>Type of Instruction</td>
<td>Teacher Directed</td>
<td>Peer Mediated, Apprentice</td>
<td>Guided</td>
</tr>
<tr>
<td>Teacher’s Role</td>
<td>Expert, Organizer</td>
<td>Mentor, Collaborator</td>
<td>Facilitator</td>
</tr>
<tr>
<td>Central Concepts</td>
<td>Advanced organizers, schema activation, scaffolding</td>
<td>Scaffolding, cooperative groups, zone of prox. dev., self-regulation</td>
<td>Hands-on-learning, inductive learning, scaffolding</td>
</tr>
<tr>
<td>Role of Peers</td>
<td>Little role</td>
<td>Strong role</td>
<td>Mixed role</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Unfamiliar domains, low achievers</td>
<td>Mixed ability, modeling, groups</td>
<td>High interest and ability, high achievers</td>
</tr>
<tr>
<td>Emphasis</td>
<td>Knowledge acquisition, transmission of knowledge</td>
<td>Student-directed learning, social learning, transactional knowledge</td>
<td>Creativity, transactional knowledge</td>
</tr>
</tbody>
</table>
**Direct Instruction**

Particularly effective when teaching content/procedural skills that have:
1. Specific set of identifiable operations or procedures
2. Can be illustrated with a large and varied number of examples
3. Can be developed through practice

---

**Phases of Direct Instruction**

![Diagram of Phases of Direct Instruction]

- **Introduction and review**
  - Homework review
  - Overview and purpose
  - Motivation

- **Presentation**
  - Concrete examples
  - Modeling
  - Many questions
  - Check understanding

- **Guided practice**
  - Scaffolding
  - Monitoring
  - Interaction

- **Independent practice**
  - Monitoring
  - Automaticity
  - Homework
Tips for improving D.I.

• Probe often & observe wait time
• Ask questions that promote active rather than passive thinking
• Bring in anything to increase attention/interest (e.g. props, guest speaker, visuals, multimedia)
• Exude energy and express personal interest
• Give many concrete examples
• Be creative; don’t lecture from text!

Discovery Learning

Advantages
• Arouses curiosity
• Encourages independent problem solving
• Encourages the development of critical thinking skills

Disadvantages
• Requires special materials
• Extensive preparation
• Frustration
• Typically not as effective for low-ability students
What defines Cooperative Learning?

• Positive interdependence
• Individual accountability
• Structured activities
• Team goals/rewards
• A focus on higher-order thinking after presentation of basic information

2 Specific types of Cooperative Learning

STAD (Student Teams Achievement Divisions)
• Form heterogeneous groups (ability, gender, ethnicity, etc.)
• Compete for rewards based upon improvement of scores as a group

Jigsaw
• Have “experts” within each group who teach other group members
What makes Cooperative Learning Effective?

- Potential for accommodating individual differences
- Dual emphasis on academic and interpersonal skills
- Social construction of knowledge
- The ability to engage in higher-order thinking