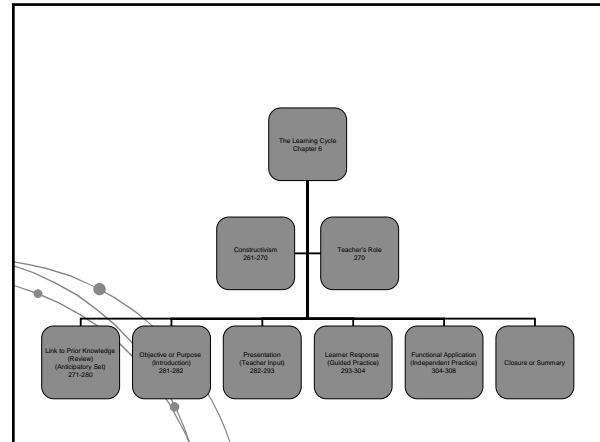


Chapter 6

The Learning Cycle: Teacher Scaffolded Social Constructivism

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What Is Constructivism?

- Refers to the process by which children acquire and organize information
- Associated with theorists: Piaget and Vygotsky
- Children develop intelligence not by being told, but by building their own understandings

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Piaget

- Schemata gradually become more complex
- Happens through a sequence of adaptation
 1. Assimilation: mental process that occurs when children integrate new knowledge and experiences with existing schema – results in equilibrium
 2. Disequilibrium results when new information or experiences don't match with existing schema
 3. Accommodation: when children attempt to modify an existing schema
- Motivation: comes from children's drive to either assimilate into or accommodate schemata in response to new experiences in their environment

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Constructivist Learning

- Is a strategic problem-solving process by which learners are intrinsically driven to construct meaning from a new learning challenge
- Happens when the learner's experiences are triggered or activated by the challenge of a new learning situation
- Teacher's role is to create challenging situations for learners

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Cognitive vs. Social Constructivism

- Cognitive constructivism: the idea that learning occurs within each individual learner
- Social constructivism: the idea that learning occurs as a result of people working together to make sense out of their world

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What Is Social Constructivism?

- Centers on positive adult-student and student-student relationships
- Teachers make available absorbing materials and intriguing situations
- Teachers engage students in activities and provide some form of systematized instruction and intervention

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Lev Vygotsky

- Believed that humans are different from animals because they make and use tools
 - Physical tools
 - Mental tools
- Humans pass on knowledge and skills through language during verbal interactions
- Zones of Development
 - Zone of Actual Development: learning tasks are completed individually with no assistance
 - Zone of Proximal Development: learning tasks are completed with just the right amount of assistance

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Scaffolding

- When teachers offer just the right amount of help for students as they attempt to bridge the gap between what they already know and what they need to learn
- Provides temporary support for children
- Teacher provides cueing, questioning, coaching, and support

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The Learning Cycle

- Learning cycle is a student-centered, problem-solving teaching approach that creates conceptual change through social interactions
- Three major elements
 1. Exploration
 2. Concept/skill development
 3. Concept/skill application

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The Exploration Phase

- Purpose
 1. Activate prior knowledge
 2. Draw students into the lesson
 3. Focus student's attention on task with clear purpose

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Activating Prior Knowledge

- Goal is to establish a connection between what they know and the new information
 - Ausubel: Advanced Organizer
 - Hunter: Anticipatory Set
 - Vygotsky: External Mediator
- External Mediator
 1. Class discussion with thought-provoking questions
 2. Provocative objects or events
 3. Graphic outlines of material to be covered

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Discussion Sequence

1. Existing Knowledge: Ask question to stimulate recall
2. Thought Association: Ask question to draw comparisons
3. Rapid Recognition: Display symbols, terms to aid association
4. Quick Lesson Review: Ask questions to connect new learning with previous learning
5. Open Discussion: Ask open-ended questions to create interest or raise questions to investigate

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Graphic Organizers

- Bubble Trees: use when relevant information can be categorized beneath a core understanding
- Prediction Charts: contain a statement or series of statements related to concepts or issues under study
- K-W-L: Table that identifies what children Know, what they Want to know, and what they Learned
- Semantic Webs: help students organize ideas

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Graphic Organizers, con't

- Venn Diagrams: graphic organizers that can be used to compare and contrast two divergent cognitive elements
- Cycles: type of graphic organizer that helps students visualize a series of connected events that occur in sequence and produce a repeated result
- Thinking Maps (see Course Packet p. 85)

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Establishing a Clear Purpose

- Children are always asking, "Why is this important?"
- Knowing what is expected is important
 - To find out something vitally interesting
 - Follow certain directions
 - Get a central idea
 - Stimulate personal thinking on deep subject
- Must be linked to prior knowledge and lessons
- Generally comes last during introductory sequence
- Focuses student attention

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The Development Phase

- The Main Learning Experience
- Key Questions
 - What basic concepts or skills are to be taught?
 - What learning materials should be used to explain and clarify ideas for the students?
 - How can teachers assist children to construct key concepts and skills?
 - What strategies could be used to make sure the students understand the concept or master the skill?

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Concept Analysis

- Concepts are the schemata
- Class of ideas
- Dynamic
- Designated by a label
- Concrete concepts: physical attributes
- Abstract concepts: logical constructs
- Concept analysis is the process of breaking down a concept by identifying its defining features

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Concepts and Examples

- Community
 - Wilmington
 - Washington, DC
 - Tokyo
- Island
 - Hawaii
 - Cuba
 - Wrightsville Beach
- Mountain
 - Mt. Everest
 - Mr. Fuji
 - Grandfather Mountain
- Justice
 - Taking turns
 - Writing down rules
 - Applying rules equally to everyone

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Task Analysis

- Skills are mental or physical operations having a specific set of actions that are developed through practice
- Skills are best taught and reinforced as separate lessons
- Task analysis: process of identifying component parts of skills and sequencing the steps
- Modeling skills is highly effective and efficient
 - When teacher is perceived as capable professional
 - When students are convinced they can succeed

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Materials for Instruction

- Brunner's three levels of learning
 1. Enactive level: includes objects, people, places, trips, visitors, and real-life classroom experiences
 2. Iconic level: representations of real objects when the actual objects or places can not be accessed
 3. Symbolic level: abstract ideas, symbols, language and logic
- Select materials that represent a balance of these three levels

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Class Discussions

- A vital ingredient of constructivist classrooms
- Primary purpose of talk is to assist students in restructuring what they already know

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Closed-ended Questions

1. They help determine whether students have learned the content
2. They help detect whatever misconceptions students have about the content
3. They help students check their own progress

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Open-ended Questions

- Lead to more complex thinking
- Encourage analyzing and evaluating
- Students are generally more involved in the class discussion
- Teachers should plan their sequence of questions

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Art of Questioning (Dewey)

1. Questions should not elicit fact upon fact, but should help students delve deeper
2. Questions should emphasize personal interpretations rather than literal and direct responses
3. Questions should not be asked randomly, but should be planned to lead to the next question
4. Teachers should periodically review important points so that previously discussed material can be placed into perspective
5. The end of the question-asking sequence should leave children feeling a sense of accomplishment

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Framing Questions

- Ask the question
- Pause for 3 to 5 seconds (wait time)
- Call on someone to respond
- Pause for 3 to 5 seconds once more to give students time to think about a response

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Concept/Skill Application Phase

- Opportunity to apply and practice a new skill or concept through special projects or independent activities
- Creativity and choice
 - Group murals
 - Story writing
 - Construction projects
 - Drama
 - Puppetry
 - Music
- Should result in constructing deeper meaning

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Guided Practice

- Many kinds
- Use of concept mapping/graphic organizers
 - Conceptual
 - Sequential
 - Cyclical
 - Hierarchical
- Thinking Maps

Independent Practice

- Independent Activities
- Focus on creativity and choice
- Provide for extension, application, relevance, and usefulness

Closure

- May involve summarizing, sharing, reviewing
- May provide transition to new lesson or learning