Constructivism: A Holistic Approach to Teaching and Learning

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Introductions

• Your name
• Your department or unit
• Your experiences or knowledge of constructivism
• Why have you joined us today?
Overview

• Learning cycle
• Constructivism
  – Learning theory
  – Process
  – Instructional strategy
• Classroom applications
• Instructor and student roles
Learning Cycle or “5 E’s”

Engage → Evaluate → Explore → Explain → Extend → Engage
How would you define constructivism?
A definition of constructivism

Fundamentally, constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences.

Constructivism is a learning theory

- Learning is an active process
- Knowledge is constructed from (and shaped by) experience
- Learning is a personal interpretation of the world

Sources: Christie (2005); Kruse (n.d.)
Constructivism is a learning theory

- Emphasizes problem solving and understanding
- Uses authentic tasks, experiences, settings, assessments
- Content presented holistically – not in separate smaller parts

Sources: Christie (2005);
Constructivism is a process – the instructor

• Adapt curriculum to address students’ suppositions
• Help negotiate goals and objectives with learners
• Pose problems of emerging relevance to students
• Emphasize hands-on, real-world experiences
• Seek and value students’ points of view
• Social context of content

Sources: Christie (2005); Honebein (1996)
Constructivism is a process – the instructor

• Provide multiple modes of representations / perspectives on content
• Create new understandings via coaching, moderating, suggesting
• Testing should be integrated with the task and not a separate activity
• Use errors to inform students of progress to understanding and changes in ideas

Sources: Christie (2005); Honebein (1996)
Constructivism is a process – the student

• Help develop own goals and assessments
• Create new understandings (via coaching, moderating, suggesting)
• Control learning (reflecting)

Source: Grennon Brooks & Brooks, 1999
Constructivism is a process – the student

• Member of community of learners
• Collaborate among fellow students
• Learn in a social experience – appreciate different perspectives
• Take ownership and voice in learning process
<table>
<thead>
<tr>
<th><strong>Traditional Classroom</strong></th>
<th><strong>Constructivist Classroom</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Begins with parts of the whole – emphasizes basic skills</td>
<td>Begins with the whole – expanding to parts</td>
</tr>
<tr>
<td>Strict adherence to fixed curriculum</td>
<td>Pursuit of student questions / interests</td>
</tr>
<tr>
<td>Textbooks and workbooks</td>
<td>Primary sources / manipulative materials</td>
</tr>
<tr>
<td>Instructor gives / students receive</td>
<td>Learning is interaction-building on what students already know</td>
</tr>
<tr>
<td>Instructor assumes directive, authoritative role</td>
<td>Instructor interacts / negotiates with students</td>
</tr>
<tr>
<td>Assessment via testing / correct answers</td>
<td>Assessment via student works, observations, points of view, tests. Process is as important as product</td>
</tr>
<tr>
<td>Knowledge is inert</td>
<td>Knowledge is dynamic / changes with experiences</td>
</tr>
<tr>
<td>Students work individually</td>
<td>Students work in groups</td>
</tr>
</tbody>
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Thirteen Ed Online (2004).
Constructivism is an instructional strategy

• Involves collaboration between instructors, students and others (community members)
• Tailored to needs and purposes of individual learners
• Features active, challenging, authentic and multidisciplinary learning

Source: Christie (2005)
Constructivism is an instructional strategy

• Constructivism can help students
  – Pursue personal interests and purposes
  – Use and develop his or her abilities
  – Build on his or her prior knowledge and experiences
  – Develop life-long learning

Source: Christie (2005)
Constructivism is an instructional strategy

- Constructivism encourages instructors to provide for each student’s
  - Preferred learning style
  - Rate of learning
  - Personal interactions with other learners

Source: Christie (2005)
Applying constructivism in the classroom

• Pose problems that are or will be relevant to students
• Structure learning around essential concepts
• Be aware that students’ points of view are windows into their reasoning

Source: Thirteen Ed Online, 2004
Applying constructivism in the classroom

• Adapt teaching to address students’ suppositions and development
• Assess student learning in context of teaching

Source: Thirteen Ed Online, 2004
Implementing constructivism in an online setting

- Individuality and choice in practical tasks; negotiated report titles
- Practical tasks use Internet to create Web pages, concept maps, etc.
- Videos replace (some) lectures
- Exams replaced by reports on issue or research on Internet resources
- Work in pairs, groups – Blackboard supported

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Student</th>
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</thead>
<tbody>
<tr>
<td>Facilitator of knowledge</td>
<td>Adaptive learner</td>
</tr>
<tr>
<td>Co-learner/collaborator</td>
<td>Collaborator/co-learner</td>
</tr>
<tr>
<td>Developer of instruction</td>
<td>Co-developer of goals and objectives</td>
</tr>
<tr>
<td>Reflective instructor</td>
<td>Knowledge seeker</td>
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<tr>
<td>Discovery facilitator</td>
<td>Knowledge creator</td>
</tr>
<tr>
<td>Negotiator of knowledge</td>
<td>Reflective learner</td>
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<tr>
<td>Team member</td>
<td>Learning through discovery</td>
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<tr>
<td>Information receiver</td>
<td>Negotiator of knowledge</td>
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<tr>
<td>Coach / facilitator</td>
<td>Team member</td>
</tr>
<tr>
<td></td>
<td>Active learner</td>
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<tr>
<td></td>
<td>Responsible learner</td>
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<td>Mediate own learning</td>
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</tbody>
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Constructivism summary

Shifts emphasis from teaching to learning
Individualizes and contextualizes students’ learning experiences
Helps students develop processes, skills and attitudes

Considers students’ learning styles
Focuses on knowledge construction, not reproduction
Uses authentic tasks to engage learners

Provides for meaningful, problem-based thinking
Requires negotiation of meaning
Requires reflection of prior and new knowledge
Extends students beyond content presented to them

Sources: Christie (2005); Clarkson & Brook (n.d.); Murphy citing Jonassen, 1994
Take Workshop Quiz
Selected resources


Murphy, E. (1997).

Workshop-related links

**Constructivist Checklist** (How constructivist concepts might be operationalized in an instructional setting)

**Data Analysis and Probability** (simulations)
[http://nlvm.usu.edu/en/nav/category_g_4_t_5.html](http://nlvm.usu.edu/en/nav/category_g_4_t_5.html)

**Virtual Frog Dissection** (simulation)
[http://froggy.lbl.gov/cgi-bin/dissect](http://froggy.lbl.gov/cgi-bin/dissect)

**Visual Constructivism in Distance Learning** (Insight into the promise constructivism offers for achievement of quality in distance learning)
[http://www.usdla.org/html/journal/JAN02_Issue/article03.html](http://www.usdla.org/html/journal/JAN02_Issue/article03.html)