Follow the River: Designing Robust iPad Flows

Ruben R. PuenteDura, Ph.D.
Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Modification
Tech allows for significant task redesign

Augmentation
Tech acts as a direct tool substitute, with functional improvement

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Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*. (2009)
### Bloom's Taxonomy: Cognitive Processes

**Anderson & Krathwohl (2001)**

<table>
<thead>
<tr>
<th>Characteristic Processes</th>
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<tbody>
<tr>
<td><strong>Remember</strong></td>
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<tr>
<td>• Recalling memorized knowledge</td>
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<tr>
<td>• Recognizing correspondences between memorized knowledge and new material</td>
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<tr>
<td><strong>Understand</strong></td>
</tr>
<tr>
<td>• Paraphrasing materials</td>
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<tr>
<td>• Exemplifying concepts, principles</td>
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<td>• Classifying items</td>
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<tr>
<td>• Summarizing materials</td>
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<tr>
<td>• Extrapolating principles</td>
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<td>• Comparing items</td>
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<tr>
<td><strong>Apply</strong></td>
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<tr>
<td>• Applying a procedure to a familiar task</td>
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<tr>
<td>• Using a procedure to solve an unfamiliar, but typed task</td>
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<tr>
<td><strong>Analyze</strong></td>
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<tr>
<td>• Distinguishing relevant/irrelevant or important/unimportant portions of material</td>
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<tr>
<td>• Integrating heterogeneous elements into a structure</td>
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<tr>
<td>• Attributing intent in materials</td>
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<tr>
<td><strong>Evaluate</strong></td>
</tr>
<tr>
<td>• Testing for consistency, appropriateness, and effectiveness in principles and procedures</td>
</tr>
<tr>
<td>• Critiquing the consistency, appropriateness, and effectiveness of principles and procedures, basing the critique upon appropriate tests</td>
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<tr>
<td><strong>Create</strong></td>
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<tr>
<td>• Generating multiple hypotheses based on given criteria</td>
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<tr>
<td>• Designing a procedure to accomplish an untyped task</td>
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<tr>
<td>• Inventing a product to accomplish an untyped task</td>
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The EdTech Quintet
Social: 200,000 years
Mobility: 70,000 years
Visualization: 40,000 years
Storytelling: 17,000 years
Gaming: 8,000 years

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Learning Environments

- Contextual Search
- Augmented Reality
- Cloud Resources
- Mobile Tools
- Sensors
- Recorders
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Formal Definition of Game (Salen & Zimmerman)

“A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”

Example #1: Science
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**Eurasian Collared-Dove**  
*Streptopelia decaocto*  
Locally common, exotic

12½–13 in. (32–33 cm)
Recent colonizer of N. America from Caribbean but native to Eurasia; rapidly increasing and spreading. Slightly chunkier than Mourning Dove, paler grey, and with square-cut tail. Note narrow black ring on hindneck. Grayish undercut covert. Three-toned wing pattern in flight.

**Spotted Dove**  
*Streptopelia chinensis*  
Uncommon, local, exotic

12 in. (30–31 cm)
Note broad collar of black and white spots on hindneck. A bit larger than Mourning Dove, tail rounded with much white in corners. Juvenile: lacks collar, but can be told by shape of spread tail.

**Rock Pigeon (Rock Dove, Domestic Pigeon)**  
*Columba livia*  
Common, exotic

12½ in. (32 cm)
Typical birds are gray with whitish rump, two black wing bars, and broad, dark tail band. Domestic stock or feral birds may have many color variants.
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Example #2: ELA
Brief Lecture or Group Discussion  
(~10 minutes)

ConcepTest  
(~1-2 minutes)

Fewer than 30% of students answer correctly
→ The instructor revisits and explains the concept

Between 30-75% of students answer correctly
→ Peer Discussion: students try to convince each other  
(~2-3 minutes)

More than 75% of students answer correctly
→ The instructor explains remaining misconceptions

ConcepTest  
(~1-2 minutes)
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Example #3: History
Does the question represent an important issue to historical and contemporary times?

Is the question debatable?

Does the question represent a reasonable amount of content?

Will the question hold the interest of students?

Is the question appropriate given the materials available?

Is the question challenging for the students you are teaching?

What organizing historical concepts will be emphasized?

Causality
Chronology
Multiple Perspectives
Contingency
Empathy
Change and Continuity Over Time
Influence/Significance/Impact
Contrasting Interpretations
Intent/Motivation

History – Core Concepts

History – Guiding Criteria

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