Purposefully Aligning Pedagogy with Technology in an Online Teacher Professional Development Course

Bohdana Allman
Brigham Young University
Instructional Psychology & Technology
Email: bohdana.allman@byu.edu
PURPOSE OF THE PRESENTATION

1. Present findings from a self-study of design practice
2. Propose (1) pedagogical intent and (2) process for aligning pedagogy with technology

Audience:
- Curriculum planners
- Instructional/Learning designers
- Teacher educators, teachers, instructors
- Anyone who cares about improving the quality of learning
What is required to harness the potential of online education?
How can we develop innovative learning designs that bring about student success?

Underlying pedagogical structures and purposes

Simplified Design Layers
(Graham, Henrie, & Gibbons, 2014)

Physical Design Layer (Media)
- Surface features related to presentation and delivery of instruction
- Strongly influence access and cost
- Typically the main focus of the design and development process
- Physical attributes alone do not directly affect learning

Pedagogical Design Layer (Method)
- Underlying features related to pedagogy
- Actually enable the achievement of learning outcomes
- Limited attention is often paid to pedagogical structures and strategies
- It is important to identify the core attributes leading to the learning outcomes of interest
How can online education contribute to better futures?

Effective TPD & Sociocultural Approach
- Learner-centered
- Inquiry-based
- Dialogic & Collaborative
- Contextualized
- Practice-oriented

Online Modality & Collaborative Technology
- Access
- Flexibility
- Potential for personalization
- Affords reflective space

✓ Improve access to quality ongoing TPD
✓ Change teacher thinking and practices
✓ Develop communities of practice
✓ Model effective practices

CONTEXT OF THE STUDY
WCOL 2019: The Role of Theory in Transforming Online Learning
PURPOSE & METHODOLOGY

Uncover the dynamics of aligning technology with pedagogy by reflectively exploring the process of creating a course template during the design of a fully-online instructor-facilitated TPD course grounded in sociocultural practices.

Part of a larger DBR project

• Iterative, integrating research and design, use-inspired and contextually responsive (McKenney & Reeves, 2012)

Self-Study of Teaching and Teacher Education Practices (S-STTEP)

• Self-initiated disciplined inquiry into one’s situated practice with the aim of improving that practice

• Collaborative, reflective, reflexive, and dialogic (Pinnegar & Hamilton, 2009)

Qualitative Analysis

• Standard qualitative analysis steps and exemplar validation (Miles & Huberman, 2014; Corbin & Strauss, 2008; Maxwell & Miller, 2012)

What are the core attributes of the design?
What processes enable the alignment of pedagogical and physical layers?

Participants

• Researcher/instructional designer, Instructional designer, Senior TEd faculty member

• Instructional design, curriculum development, teacher education, TESL, K-12 teaching experience

Data

• Nineteen conversations recordings & related artifacts
## FINDINGS: Core Attributes

Aligning pedagogical and physical layers associated with intended learning experiences

<table>
<thead>
<tr>
<th>Theme 1</th>
<th>Theme 2</th>
<th>Theme 3</th>
<th>Theme 4</th>
<th>Theme 5</th>
<th>Theme 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEARNING EXPERIENCE</td>
<td>CORE COMPONENTS</td>
<td>CORE STRATEGIES</td>
<td>CORE METHODS</td>
<td>QUALITY OF THE DESIGN</td>
<td>LAYERS/ DIMENSIONS</td>
</tr>
<tr>
<td>Desired Results</td>
<td>Learner’s Response &amp; Needs</td>
<td>Interaction</td>
<td>Modeling</td>
<td>Instructor Support</td>
<td></td>
</tr>
<tr>
<td>Evidence of Learning</td>
<td>Instructor’s Response &amp; Needs</td>
<td>Inquiry</td>
<td>Scaffolding</td>
<td>Course Feedback</td>
<td></td>
</tr>
<tr>
<td>Instructional Activities</td>
<td>Task Content</td>
<td>Dialogic Learning</td>
<td>Theory-to-Practice</td>
<td>Course Evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Task Context</td>
<td>Collaboration</td>
<td>Reflection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pedagogy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Technology</td>
<td></td>
</tr>
</tbody>
</table>
FINDINGS: Alignment Process

Integration of themes through contiguity-based relationships  
(Maxwell and Miller, 2012)

- Attention to data’s temporal and spatial proximity and sequences to uncover additional patterns
- Identify actual connections rather than ‘virtual’ connections of similarities and differences
- Require identification of relationships among data within its actual context

Core Strategies
Interaction
Inquiry
Dialogue
Collaboration

Core Methods
Modeling
Scaffolding
Theory-to-Practice
Reflection

Online Modality Technology Tools
Availability
Affordances
Match to Purposes

Core Components
Learner
Instructor
Task Content
Task Context

Learning Experience

Online Modality
Online Modality
Online Modality
DISCUSSION: Pedagogical Intent as a Guiding Principle

- Core attributes leading to desired outcomes
- Attention to learners’ experience in a specific context
- Orchestration of core components (Schwab’s commonplaces)
- Strategic choices to facilitate key interactions with peers, instructor, and content (Moore, Anderson)
- Intentional selection of content, methods, and tools
DISCUSSION: Alignment of Pedagogy with Technology

Attention to Pedagogy
1. Identify core design attributes
2. Establish content, goals & acceptable evidence
3. Propose suitable learning experiences
4. Determine required affordances

Attention to Technology
1. Identify available technology & tools
2. Determine existing affordances

Alignment of Layers (Iterative)
1. Design the tasks and learning experiences attending to pedagogical intent
2. Adjust the tools to meet pedagogical needs and purposes
3. Evaluate against core attributes and available technology
IMPLICATIONS TO DESIGN PRACTICE & RESEARCH

Pedagogical Intent & Alignment Process

- A valuable guiding principle and useful process for aligning pedagogy with technology
- A potential to transform online learning and improve effectiveness of instruction (seeking creative purpose-driven solutions)
- Applicable for varied modalities (online, blended, technology-integrated F2F, and traditional instruction)
- Valuable independently of scale (curriculum development vs. instruction planning)
- Suitable for a variety of content-areas and contexts (professional development in variety of fields and potentially other types of instruction)

Self-Study of Design Practices

- Highlights the importance of attending to contiguity-type relationships in qualitative analysis, not just similarity-based relationships
- Suggests the need for more reflective and collaborative design practices
FUTURE DIRECTIONS

× Explore the efficacy of pedagogical intent and proposed alignment process in designing other courses:
  o Other fully-online TPD courses leading to TELL endorsement
  o Different modalities, contexts, content-areas, audiences, etc.

× Investigate design practices and see how different designers use pedagogical intent and the alignment process in their work
How can you align pedagogy with technology in your online designs?

bohdana.allman@byu.edu