Online and Hybrid Learning: Instructional Methods that Affect Learning

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Research on Hybrid Learning
Mixed Instruction Courses

Face-to-face and online components

- Hybrid
- Blended
- Flipped
- Inverted
- Supplemental
- Replacement

Potential to improve learning OR reduce costs

- Fewer limitations
  - Space
  - Pace
  - Time
Early State of Research

Support for mixed instruction is inconsistent

Inconsistent classifications of courses

- Difficult to find themes in research
- Difficult to meaningfully discuss instructional methods
- Difficult to advance research and practice

Need meaningful classifications
Creating the Taxonomy

Previous definitions of terms

Common dimensions of definitions

• Delivery Medium
• Instruction Type
• Synchronicity
Taxonomy Dimensions

Delivery Medium

Delivery via Instructor

Half instructor, Half technology

Delivery via Technology

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Taxonomy Dimensions

Instruction Type

Receiving Content
Half reception, Half application
Applying Content
Taxonomy Structure

Delivery Medium

Delivery via Instructor • Half instructor, Half technology • Delivery via Technology

Instruction Type

Receiving Content • Half reception, Half application • Applying Content
Fundamental Instructional Experiences

Delivery via Instructor

- Instructor-transmitted
- Instructor-mediated

Delivery via Technology

- Technology-transmitted
- Technology-mediated

Receiving Content

Applying Content
Paired Instructional Experiences

Delivery via Instructor

Face-to-Face Combination

Lecture Hybrid

Practice Hybrid

Online Combination

Delivery via Technology

Receiving Content

Applying Content
Paired Instructional Experiences
Blended Instructional Experiences

Delivery via Instructor

Receiving Content

Blended

Applying Content

Delivery via Technology
Blended Instructional Experiences

Delivery via Instructor

Receiving Content

Flipped

Applying Content

Delivery via Technology
Blended Instructional Experiences

Delivery via Instructor

Receiving Content

Blended Supplemental

Applying Content

Delivery via Technology
Blended Instructional Experiences

Delivery via Instructor

Receiving Content

Blended Replacement

Applying Content

Delivery via Technology
### MIX Taxonomy

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<thead>
<tr>
<th>Receiving Content</th>
<th>Delivery via Instructor</th>
<th>Applying Content</th>
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<tbody>
<tr>
<td>Instructor-transmitted</td>
<td>Face-to-Face Combination</td>
<td>Instructor-mediated</td>
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<tr>
<td>Lecture Hybrid</td>
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<td>Practice Hybrid</td>
</tr>
<tr>
<td>Technology-transmitted</td>
<td>Online Combination</td>
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</tbody>
</table>

**Blended**
- Flipped Supplemental Replacement
Analysis
Methods

Keywords: hybrid, blended, flipped, or inverted
  • Journals from 2000-2015
  • Education databases and Google scholar

Include quasi-experimental research
  • Included control group (traditionally taught class)
  • Measured quantitative learning outcomes
  • Higher education courses for credit

N = 49
Reclassified Hybrid Research

Number of Courses

Reclassification

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Reclassified Blended Research

<table>
<thead>
<tr>
<th>Reclassification</th>
<th>Number of Courses</th>
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<tbody>
<tr>
<td>Lecture Hybrid</td>
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<tr>
<td>Practice Hybrid</td>
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<tr>
<td>Replacement Blend</td>
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<tr>
<td>Flipped Blend</td>
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<tr>
<td>Supplemental Blend</td>
<td>1</td>
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<tr>
<td>Online Combo</td>
<td>1</td>
</tr>
<tr>
<td>Instructor Transmitted</td>
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Learning Outcomes of Mixed Instruction

Number of Courses

Course Design

Lecture Hybrid  Practice Hybrid  Replacement Blend  Flipped Blend  Supplemental Blend

Improved Learning Outcomes

Equivalent Learning Outcomes

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How Courses Changed

Moved instruction online
• 19 changed only delivery medium
  • 15 (79%) had equivalent learning outcomes

Time in class
• 22 reduced time in class
  • 18 (82%) had equivalent learning outcomes
• 27 maintained time in class
  • 23 (85%) improved learning outcomes
How Courses Changed

Added feedback during content application

• 30 added feedback in class
  • 23 (77%) improved learning outcomes
  • 23 out of 26 (88%) if feedback was new element

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Areas of Disagreement

• Face-to-face lectures in flipped courses
• Feedback from technology
• Continuing application activities online

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But what if I can teach online only?
The Foundations

• Align learning objectives, instruction, activities, assignments, and assessments

• Use good equipment
  • Headphones to avoid echo
  • A good microphone to improve clarity and reduce background noise

• Be consistent in disseminating information
  • There’s a higher barrier to asking questions

• Highlight important points verbally and visually
Promoting Social Learning

• Use video when talking with students whenever possible

• Create ways for students to talk with each other
  • Discussions (though not necessarily require responses)
  • Something that you can’t see
  • Provide feedback on assignments, get help during assignments
  • Breakout rooms for small group work (though be wary of graded group work)
Course Design

• If students never met in-person, do an icebreaker activity
• If students are new to online learning, short and frequent assignments provide more information about how they are doing
• Quick feedback on assignments increases instructor presence, even if it’s just “Good job”
• Try different media (video vs. audio, sync vs. async)
  • More options available than face-to-face
Thank You!

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