Building a Better Blend: Research-Based Blended Course Design

Jennifer Spohrer
Bryn Mawr College, jspohrer@brynmawr.edu

This work is licensed under a Creative Commons Attribution-Noncommercial 3.0 License
Let us know how access to this document benefits you.

Follow this and additional works at: http://repository.brynmawr.edu/oer

Part of the Curriculum and Instruction Commons, Educational Assessment, Evaluation, and Research Commons, Educational Methods Commons, and the Instructional Media Design Commons

Custom Citation

This paper is posted at Scholarship, Research, and Creative Work at Bryn Mawr College. http://repository.brynmawr.edu/oer/2

For more information, please contact repository@brynmawr.edu.
Building a Better Blend
Research-Based Blended Course Design

Central Pennsylvania Consortium Faculty Workshop
9 November 2013
Blended Learning

1. Students **receive feedback on learning** outside classroom through computer-based materials

2. Extra-classroom component alters or informs how instructor uses in-class time
Research I’m Drawing On

Our 40-college study of Blended Learning in a Liberal Arts College Environment

1. About the study (incl. courses taught):
   http://nextgenlearning.blogs.brynmawr.edu/

2. Conference archives:
   http://repository.brynmawr.edu/blended_learning/

3. Blog (resources, how-to, etc.):
   http://serendip.brynmawr.edu/exchange/blendedlearning/explore
Research I’m Drawing On

Literature on cognitive development and memory; “learning sciences” research

Scholarship of teaching and learning; education or pedagogical research

(Specific references included at the end)
Research-Based Course Design

WHY DOES BLENDED LEARNING WORK?
Why Does Blended Learning Work?

Hypothesis 1: Students spend more time on task
Why Does Blended Learning Work?

Hypothesis 2: Students spend better time on task
What is Formative Assessment?

Assessment where goal is gathering evidence in order to improve student learning

- At individual level
- At course, program, department level
Examples in Blended Learning

Explanation of wrong answer ...

Your answer:

The concentration of Fe in the compound, expressed as a percent.

Not quite. 'Concentration' refers to mass or moles present per unit volume. Click on Continue to see an analogy that may help you understand what mass % means.

... and redirection to quick remedial lesson

Mass Percent Review

To understand the concept of mass percent, it may help to first think of a more familiar example. Let's say you have a produce shipment of 50 kg of bananas, 40 kg of lettuce and 30 kg of carrots.

What is the mass percent of carrots in that shipment?
Examples in Blended Learning

Data instructor can use to adjust approach, identify struggling students, etc.
Enabled them to

- Ask better questions
- Get help *before* class moved on
- Practice and get feedback before it “counted”
- Better structure study time
Faculty Response

- Students ask better questions

Faculty could:

- Get a real-time sense of student learning
- Give more targeted answers or help
- Teach more “agilely”
- Use class time for more engaging, active things
“Testing” improves ...

- Retention
- Organization of knowledge
- Subsequent learning
- Application

Why? How?
“Testing Effect”

Act of recalling information helps strengthen neural processing of it …

… testing produces new learning
Feedback also Helps ...

Helps students catch and correct misperceptions

Strengthens low-confidence, correct answers
As Does Spacing Learning over Time ...

Periodically revisiting topics strengthens testing effect (short-term/long-term memory)

Counteracts students’ tendency to fall behind and cram to catch up
Improved Metacognition

Expert learners have good metacognition; novices overestimate what they have understood.

Most of the time we are novice learners.
Enhancing Metacognition

Self-assessments

Polls about activities/assessments
Enhancing Metacognition

Or use adaptations of Classroom Assessment Techniques (CATs):
- Minute Paper
- Muddiest Point
- Application
Research-Based Course Design

YOUR TURN ....
1. Define Your Objectives

What is this course trying to achieve?

What are your “pain points”? What prevents you from achieving your course goals?

Can blended learning help? What could students learn through online materials? (in theory at least) What opportunities could shifting some elements online give you?
2. Find/Evaluate Resources

Do they do what you need them to?

Can you use them to ...

- Track student learning?
- Give students detailed feedback?
- Help students periodically review topics?
- Help students develop metacognitive skills?
2. Find/Evaluate Resources

Are there technical issues that might waste so time that it overshadows benefits

- Long load/download/buffering times
- Other access or performance issues
- Difficult interface
- Difficult to enter answers in format program will recognize (esp. for math, chemistry, etc.)
3. Integration

What short-comings in the materials will you need to overcome? How will you do it?

How will you motivate students to complete without losing formative/mastery emphasis?

How will you close the loop? Students top complaint was disconnect between online and in-class … how will you bring the two together?
Research-Based Blended Course Design

REFERENCES
Amaral, Katie, and John D. Shank. 2010. “Enhancing Student Learning and Retention with Blended Learning Class Guides.” *EDUCAUSE Quarterly* 33 (4).


Blended Learning in the Liberal Arts

About the study (findings, course syllabi, etc):
http://nextgenlearning.blogs.brynmawr.edu/

Annual Conference info and archives:
http://repository.brynmawr.edu/blended_learning/

Join us in 2014! May 20-21 is tentative date

Blog/Website (resources, how-to tips, etc.):
http://serendip.brynmawr.edu/exchange/blendedlearning/explore
Jennifer Spohrer
Coordinator for Academic Technology Initiatives
Office of the Provost
Bryn Mawr College
jspohrer@brynmawr.edu