

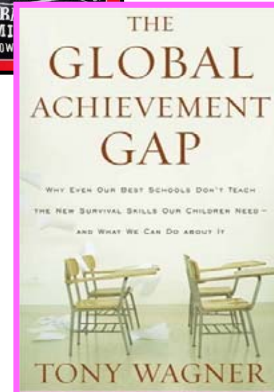
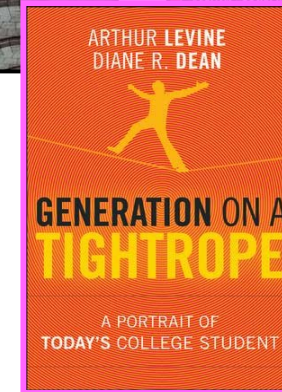
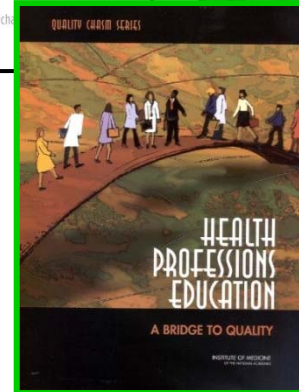
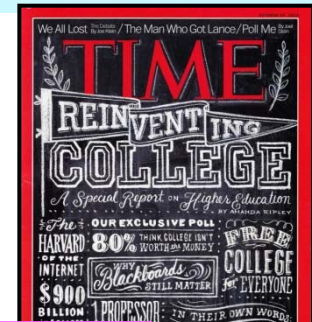
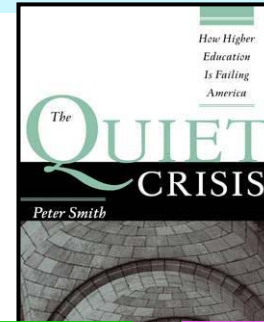
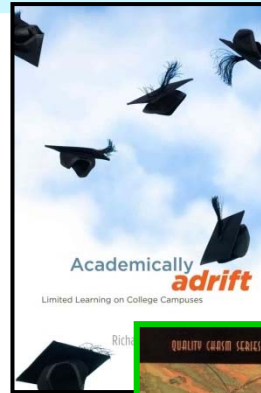


A Case for the Flipped Classroom

Russell J. Mumper, PhD
Vice Dean and
John A. McNeill Distinguished Professor

Why We Flipped the Classroom

- Crisis in Higher Education
- Crisis in Health Care
- The 21st Century Student
- Our School's New Strategic Plan

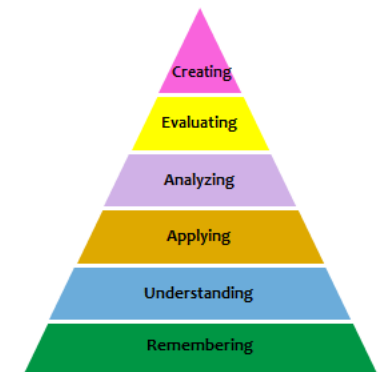


STRATEGIC
INITIATIVE

1

EDUCATIONAL RENAISSANCE

Transform education, enlighten students, and advance health care

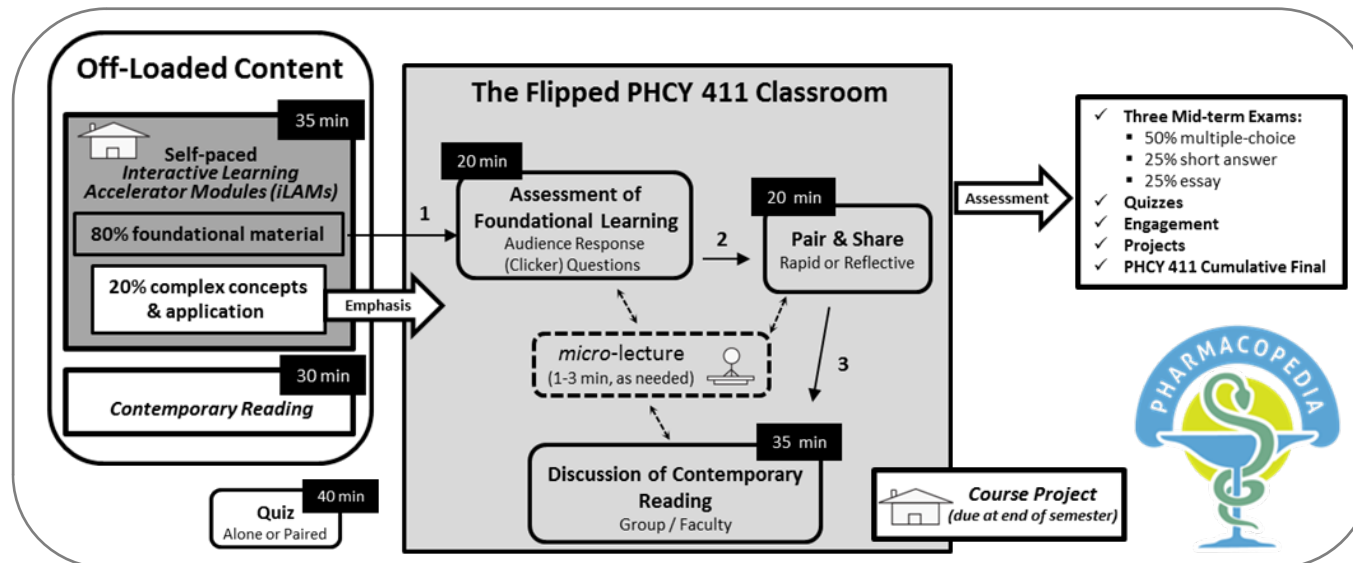


The Impact of a Blended-Learning Approach on Student Performance and Satisfaction in a Pharmaceutics Course

IRB Study # 12-0685 - *Three Year Study*

What We Did

Reverse Engineered
from
"The Job to be Done"



The screenshot shows the PHCY 411 website interface. The top navigation bar includes "My Workspace", "PHCY411.001.SP13", and "Curriculum Design and ...". The left sidebar lists various resources: Unpublished Site, Home, Announcements, Calendar, 411 Syllabus, 411 Resources, Messages, Gradebook, Search, Statistics, Site Info, Library/Reserves, iLAMs, Chat Room, Drop Box, Forums, 411 Pharmacopedia, Quizzes, Echo360 Portal, RSS Podcast, EchoRSS Instruction, and Help. The main content area displays "PHCY411.001.SP13: Site Information Display" with a large, colorful illustration of a cell and a chemical structure.

The image shows two screenshots of the "Basic Pharmaceutics II" course content. The left screenshot displays the "COURSE LECTURES PRESENTERS SYLLABUS" page, listing topics such as Diffusion Review, Diffusion in Biological Systems, Parenteral Dosage Forms, and Drug Targeting. The right screenshot shows a "Diffusion Review" slide with the equation $\frac{dM}{dt} = D \cdot S \cdot K \cdot C_p$ and a diagram of a drug molecule. The slide also includes a "Non-Steady State Diffusion Cont." section with the equation $\frac{dM}{dt} = P \cdot S \cdot C_p$ and a diagram of a drug molecule.

Selected Outcomes for 2012

Post-course Survey

- **97%** (Strongly) Agreed that the pre-recorded lectures greatly enhanced their learning
- **93%** (Strongly) Agreed that the flipped methods promoted understanding and application
- **91%** (Strongly) Agreed that the flipped method greatly enhanced their learning
- **98%** (Strongly) Agreed that the developed skills would be useful in their careers

$p < 0.001$ for all

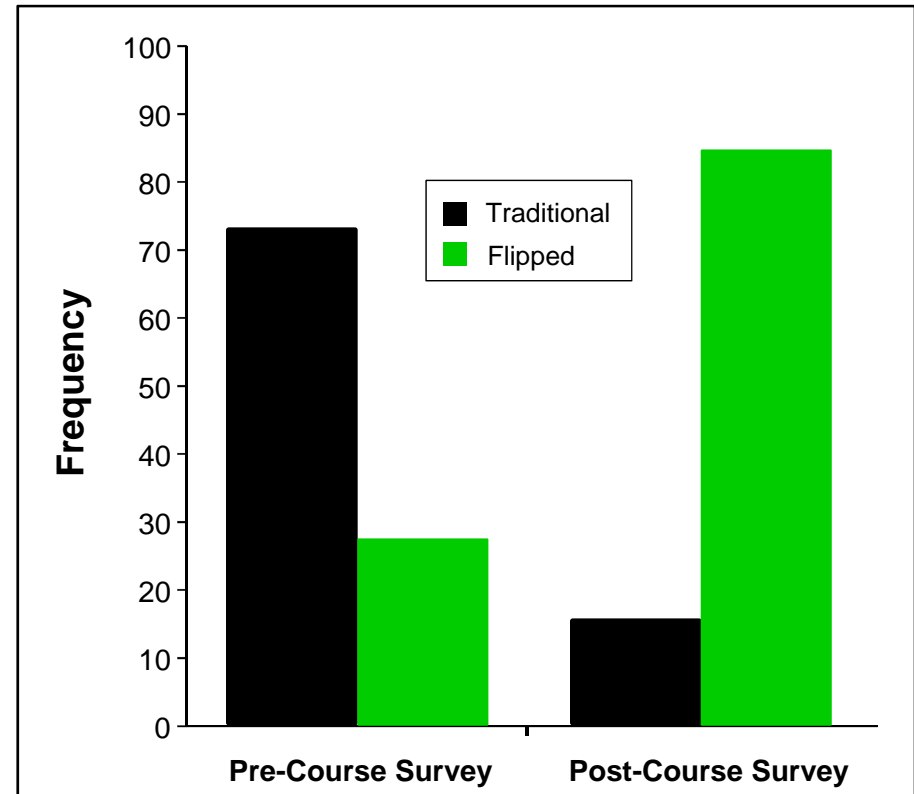
Course Evaluation

- Students reported spending **no additional time**
- **11/14** course evaluation metrics increased
- Students at **satellite campuses** were most enthusiastic
- A small, but vocal cohort of students (~**15%**) did not prefer the new format

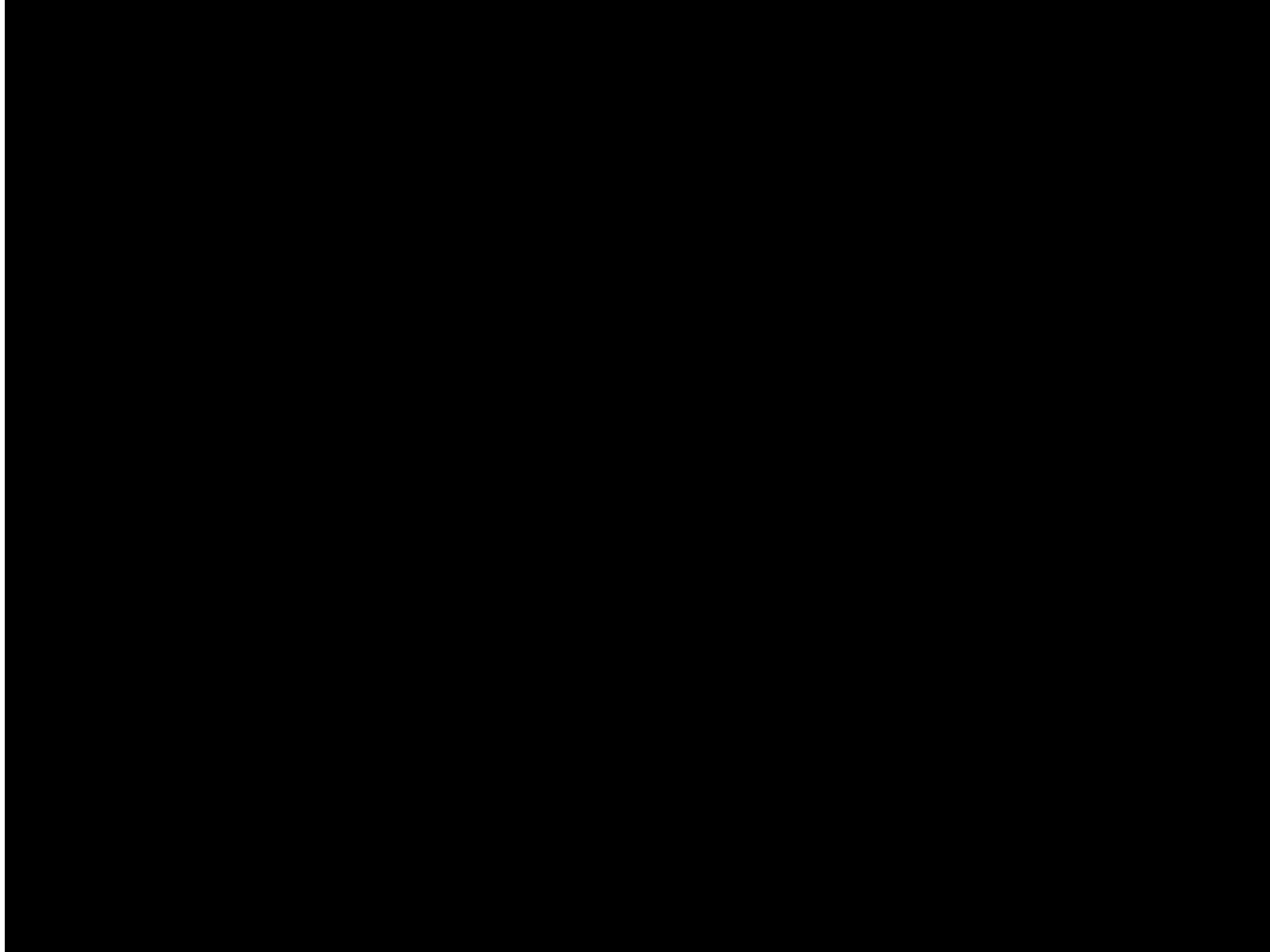
Performance

- Increase in Cumulative Final Exam Score: 2011 ($80.0\% \pm 7.3\%$)
2012 ($82.7\% \pm 6.7\%$) ; $p = 0.001$
2013 ($85.1\% \pm 6.9\%$); $p < 0.001$

Student Preference was “Flipped”



Student Perspective



What it Meant to Me

“The entire experience of flipping the classroom, from design to implementation to assessment, has been one of the **most profound educational experiences** of my career. For me personally, it was a collective ‘aha’ experience where I finally realized that for years **I had it all wrong**. Never before had I **engaged** with professional students in the manner in which this course provided, and demanded. It was an **incredibly rewarding experience**. I will never return to the traditional lecture format as I feel that this would be cheating both me and the students.”

“Related, this flipped classroom experience **reinforces the potential value of the engagement between research-intensive instructors and students within a research-intensive university.**”

Excerpt from Academic Medicine (in-press)

“The Flipped Classroom: A Course Design to Foster Learning and Engagement in Health Professions Education.”

The Atlantic



Today's
Inventors Need
to Read More
Science Fiction

What Ha
to Politi
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The Post-Lecture Classroom: How Will Students Fare?

A new study finds moderate student gains in courses where lectures take place at home and “homework” happens in the classroom.

ROBINSON MEYER | SEP 13 2013, 1:11 PM ET

1k

Like

811

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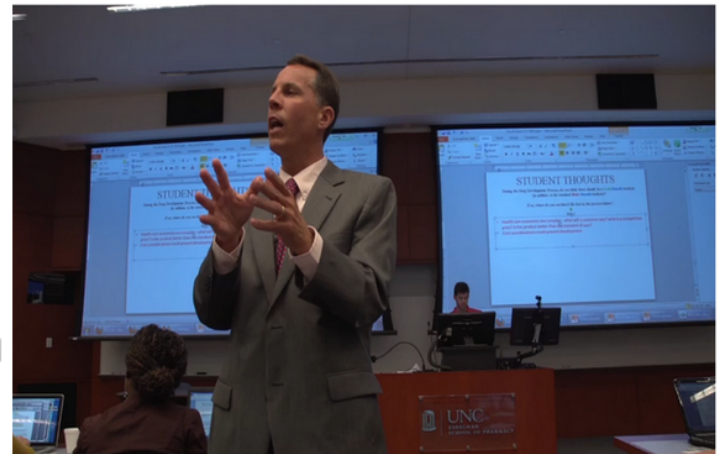
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Russell Mumper, Vice Dean of the University of North Carolina Eshelman School of Pharmacy, teaches his “flipped” Pharmaceuticals class. (Echo360)

If college professors spent less time lecturing, would their students do better?

A three-year study examining student performance in a “flipped classroom” — a class in which students watch short lecture videos at home and work on activities during class time — has found statistically significant gains in student performance in “flipped” settings and significant student preference for “flipped” methods.

What it Meant to the School

Creating the Culture (for Change)

- A significant “early win” that positively influenced faculty
- Faculty Recruitment and Promotion / Tenure Processes
- Fostering the *Scholarship of Education*
- *The Academy* and the Office of Educational Technology R&D
- Instructional Innovation Policy and Participation Agreement

What's Next?

- Launch the Transformative New Curriculum in 2015 – all flipped classes and early/constant immersion in patient care and scholarship

Opportunities

- The School can serve as a strategic partner and resource to help execute this model across the UNC System & beyond



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