THE LEARNING COMMONS MODEL: BUILDING COLLABORATION, ASSESSMENT, AND USER EXPERIENCE INTO THE EDUCATION SYSTEM

Equitable Access to Content for All
Crossroads Education
Founder and CEO
Spin UP partner of Indiana University with IU licensed products. Chief designer and architect of all products and services.

Products:
- Learning Spaces Consulting
- Professional Development Programs
- Suite of SaaS products
  - Nexus Virtual Learning Spaces
  - Compass: Analytics and Tracking
  - LC Manage

Kevin Berkopos, PhD

Co-Appointed Mathematical Sciences and University College

Roles:
- Director of Mathematics Assistance Center (MAC)
- Director of Statistics Assistance Center (MAC Stat)

Outcomes: PI or Leadership team on $12+ million in grants in the 4 years at IUPUI. Designed and executed LC model for MAC and MAC Stat receiving national awards for research and model.
In our current systems, students' main access to mathematical content and habits of mind are through lecture... and highly dependent upon the access point of the professor and curriculum.
PEER REVIEWED JOURNALS:
WORDS OR PHRASES ASSOCIATED WITH THE
TRADITIONAL METHODOLOGIES FOR DELIVERING
MATHEMATICAL CONTENT
INEFFICIENT
TOO MUCH, TOO FAST
DULL
ANXIETY
DISCRIMINATORY TOWARDS MINORITY AND FIRST-GENERATION STUDENTS
BIASED
I frame lecture as a logistical choice not a pedagogical choice. Do we disagree?
But, we cannot ignore this:

The most uniformly held negative attitude in learning mathematics is directed at the delivery of lectures (Yosof & Tall, 1999).
It is time to be committed to accelerating the world’s transition to a higher quality user experience in education.
THE LEARNING COMMONS MODEL

• The model
• The assessment
• The user experience
• The connection
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Remember this if you remember anything: You learn best from the art of teaching... so let's build that into our system
WHAT IS IT? THE LEARNING COMMONS MODEL

First Access
“Classroom/Lecture”

Teacher/Professor

Students/formal

+ We evolve to include

Second Access
“Learning Commons”

Students/collaboration

LC is providing the context for a re-branding of second-access to content:

- Tutoring is about collaboration not remediation
- Provides a collaborative learning common experience that replicates the professional learning culture
- All student workforce... students that are teaching are also learning
- Technology provides the invisible catalyst to facilitate more effective collaboration
The Learning Commons Model

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THE LEARNINGS COMMONS MODEL WORKS

**Students engage with the Learning Commons (LC)**
- **Average 42% annual growth** since installation of the learning commons model in 2013

**Engagement with the LC improves outcomes**
- **Quasi-Randomized Control Trial** matched peers and showed a 1.5 letter-grade improvement (like changing from a C to a B+) for those that use the LC

**Improved outcomes drives better STEM retention**
- For both students that work at the LC and for students that visit for their coursework

**The LC model is much more cost effective**
- LC serves 4x number of students at university cost that is much lower per student than staff dependent models
HOW WE COLLECT DATA

COMPASS: Analytics and Tracking

Software created by students to develop our capabilities for collecting fine-grained enterprise level data about student usage of resources.
ETHICS PREVENT US FROM RUNNING AN ACTUAL CONTROL AND EXPERIMENTAL GROUP IN THIS TYPE OF HUMAN SUBJECT RESEARCH. BUT, THERE IS SOMETHING WE CAN DO TO CONDUCT A QUASI-EXPERIMENTAL STUDY

Berkopes & Chiu working manuscript

As students are not randomly assigned to the control or experimental groups (potential selection bias), we conduct a quasi-experimental study to approximate a randomized control trial (RCT)
INNOVATE ON ASSESSMENT TECHNIQUES

- Randomized Control Trial (RCT) - A study in which people are allocated at random (by chance alone) to receive one of several clinical interventions. One of these interventions is the standard of comparison or control. The control may be a standard practice, a placebo ("sugar pill"), or no intervention at all.

5 Data Matching Techniques Averaged:

- Propensity Score Matching (PSM)
- Mahalanobis Distance Matching (MDM)
- Coarsened Exact Matching (CEM)
- Mahalanobis Frontier
- $L_1$ Frontier
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HOW WE CONNECT

NEXUS VIRTUAL LEARNING SPACES

SOFTWARE CREATED BY STUDENTS TO
DEVELOP OUR CAPABILITIES FOR SCALING
OUR CULTURE OF COLLABORATION AND
PROVIDING EQUITABLE ACCESS TO
CONTENT FOR ALL.