

1-1-2012

# Developing, Implementing and Assessing Large-Scale Redesign Effort at a Research University: Tales from the IMPACT Initiative at Purdue University

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## Recommended Citation

Levesque-Bristol, Chantal; Nelson, David; Weaver, Gabriela; and Parker, Loran Carleton, "Developing, Implementing and Assessing Large-Scale Redesign Effort at a Research University: Tales from the IMPACT Initiative at Purdue University" (2012). *IMPACT Presentations*. Paper 12.  
<http://docs.lib.purdue.edu/impactpres/12>



# **Developing, Implementing and Assessing Large-Scale Redesign Effort at a Research University:**

## **Tales from the IMPACT Initiative at Purdue University**

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# IMPACT Goals

- Support **faculty-led** course redesign with campus-wide resources
- Refocus the **campus** culture on student-centered pedagogy and student success
- **Reflect, assess** and **share results** to benefit future courses and students

# IMPACT Methods

- Develop a network of faculty through **Faculty Learning Communities (FLC)**
- Base course redesign on **best practices** and **sound research**
- **Grow and sustain** IMPACT by adding new IMPACT faculty fellows annually

# Campus-Wide Support

- **ITAP:** Donalee Attardo & John Campbell
- **Libraries:** Tomalee Doan
- **Teaching Academy & Provost:** Frank Dooley
- **CIE:** Chantal Levesque-Bristol
- **Extended Campus:** Michael Eddy
- **Faculty:** Cliff Weil
- **DLRC:** Gabriella Weaver



# IMPACT Faculty Are...

- supported by diverse course redesign teams from CIE, ITaP, Libraries, Extended Campus and DLRC
- the drivers for course redesign and curriculum change
- focusing on learning, experimenting, and implementing research-based changes in their classes

# IMPACT Faculty Are...

- Ultimately Responsible for identifying the learning outcomes for their course
- There is no “one-size fits all” formula; a course redesign plan recognizes that the needs of each course may differ

# Goals for Course Transformation: The Research Questions

- **(FLC)**: What is the effectiveness of the professional development aspect of IMPACT and embedded support for course redesign and implementation?
- **(Classroom)**: What is the effect on pedagogical approaches used?



# Goals for Course Transformation: The Research Questions

- **(Student Success):** What effect do IMPACT courses have on student success and retention?
- **(Faculty):** What long-term results occur in practices by faculty, departments, institution?

# Primary Obstacles to Engagement and Assessment

- Battling Intuitively Faculty Measurements of Learning
- Balancing Flexibility Needs with Controlled Variables for Measurement



# FLC Curriculum

- Know Yourself, Your Students and Your Course
- Define Learning Outcomes and Measurement Tools
- Create the Active-Learning Environment

# Technology Resources

- Studio @ Purdue
- Classroom Response System
- Adobe Connect
- IT Support Staff
- Advanced Classrooms

# IMPACT Classrooms



Roland G. Parrish Library of Management and Economics  
**KRAN 250**

- Collaborative computer groups
- Multiple interactive Smart Boards and white boards with document capture capabilities
- BoilerCast audio recording
- Seats 40

Hicks Undergraduate Library  
**B848**

- Collaborative work tables
- Projectors, Smart Boards, and white boards
- Seats 117



# IMPACT Classrooms



Hicks Undergraduate Library  
G980D

- Collaborative work stations
- Dynamic media projection capabilities
- Seats 72



Hicks Undergraduate Library  
B853

- Collaborative work tables
- Multiple projectors
- Seats 90



## Learning Community



This site provides information about IMPACT's mission, goals, faculty, and stories to the Purdue community.

### Quick Links:

[How does IMPACT work?](#)

[What should I expect from IMPACT?](#)

[How does IMPACT benefit me?](#)

[How do IMPACT faculty get](#)



## Mission Statement

Our mission is to improve student competency and confidence through redesign of foundational courses by using research findings on sound student-centered teaching and learning.

### Recent News

[Summer 2012 Cohort Selected](#)

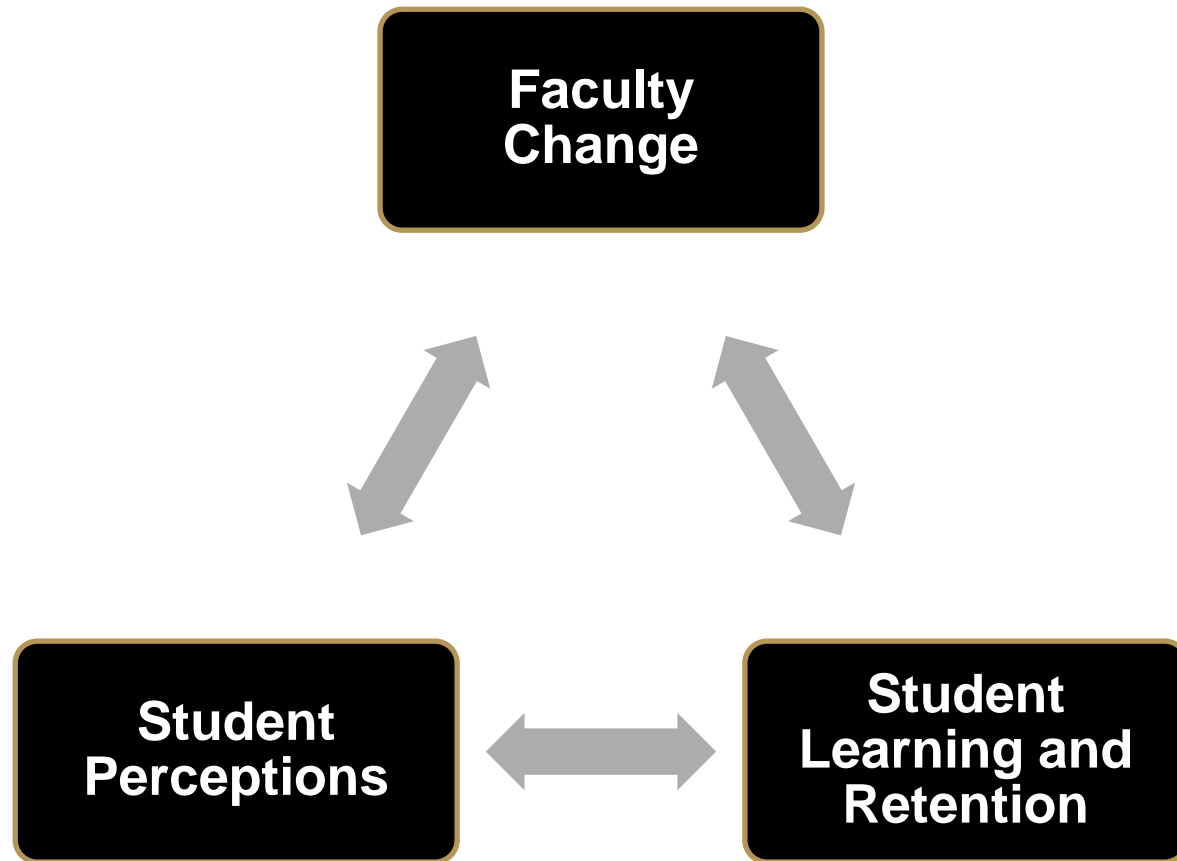
[Fall 2012 Cohort Selected](#)

### Upcoming Events

[Summer 2012 Cohort FLC Sessions-ongoing from June 20 until August 1. Sessions will be held each Wednesday between June 20 and August 1, EXCLUDING July 4 and July 11.](#)



# Program Assessment Dimensions



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- **Faculty Change**
  - Persistence and breadth of change
  - Faculty views and attitudes
  - Institutional cultural change
- **Student Perceptions**
- **Student Learning and Retention**

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  - Classroom climate
  - Impacts on them
- **Student Learning and Retention**

# Program Assessment Dimensions

- **Faculty Change**
  - Persistence and breadth of change
  - Faculty views and attitudes
  - Institutional cultural change
- **Student Perceptions**
  - Classroom climate
  - Impacts on them
- **Student Learning and Retention**
  - Course grades (current and later)
  - Retention at the institution
  - Learning

# Challenges

- Faculty from different disciplines
- Faculty with different goals and background
- Uniform and objective measures of classroom atmosphere
  - RTOP → CEQ
- Uniform measures of student learning
- Identifying specific outcome goals for IMPACT

# Faculty Change

- Research Questions
  - What are **faculty expectations** for IMPACT as a professional development program? What did faculty get out of their participation in IMPACT FLC?
  - What are **faculty goals** for course redesigns? What redesigns did faculty implement? What were the **barriers and supports** during their redesign and implementation?
  - Is the transformation achieved in IMPACT **transferred to other courses** taught by IMPACT faculty fellows?
  - What percentage of the courses leave IMPACT with five **clearly defined learning objectives** and associated assessments?
  - What is the **distribution of learning objectives** related to each level of Bloom's taxonomy?
  - What is the effect of IMPACT on the **attitudes** of administration and non IMPACT faculty with respect to teaching and learning?

# Faculty Change: Interviews and Surveys with Faculty Fellows

RQs	RQ1	RQ2	RQ3
Prior	Survey	Interview	Interview
Current	Interview	Interview	Interview
Future	Survey	Survey with FG	Long. Survey

# Faculty Change: Examples

- Faculty expectations
  - Open-ended survey
    - Example items:
      - How will your participation in this program affect your classroom teaching strategies?
      - Specifically, what goals do you have for implementing the instructional redesign program?
  - Individual interview protocol
    - Example questions:
      - What are your expectations for the course redesign process?
      - What are your current classroom practices?
      - What does course redesign mean to you?



# Faculty Change: Examples

- Benefits of participation in the FLC
  - Open-ended survey
    - Example items:
      - What were the most useful lessons you learned from these FLC sessions for your course redesign?
      - What could make these sessions more useful for your course redesign?
  - Individual interview protocol
    - Example questions:
      - What did you learn from the IMPACT professional development experience as a whole?
      - How will your participation in the IMPACT program affect your classroom teaching strategies?

# Faculty Change: Examples

- Specifics of faculty redesigns
  - Individual interviews
    - Example questions:
      - What was the specific course redesign that you implemented?
      - Was the redesign that you implemented different from the original redesign you had planned?
- Benefits and challenges of redesign
  - Individual interviews
    - Example questions:
      - What key lessons did you learn about the implementation of course redesigns in general?
      - What were the benefits? What were the challenges?
      - What did you gain from the process?

# Faculty Change: Faculty Fellow Development

- Summary of preliminary results
  - First cohort
  - Faculty
    - Learned about several approaches to course redesign
    - Adopted new teaching strategies and recognized effective current strategies
    - Reported that their redesigns enhanced student engagement in class

# Faculty Change: Faculty Practice

- What percentage of the courses leave IMPACT with five clearly defined learning outcomes and associated assessments?
- Data collection
  - Explicit learning outcomes mapped to appropriate assessments by faculty

# Faculty Change: Faculty Practice

- What is the distribution of learning outcomes related to each level of Bloom's taxonomy?
- Data collection
  - Explicit learning outcomes mapped to the appropriate level of Bloom's taxonomy by faculty

# Faculty Change: Faculty Practice

	Remember/Recall	Understand	Analyze	Apply	Evaluate		Activities
<b>EXAMPLE LO</b> <i>Students will be able to explain the role of the sociologist</i>	0	2	0	2	0		
LO 1	2	3	2	2	0		
LO 2	3	3	1	4	0		
LO 3	1	4	1	3	0		
LO 4	0	1	4	3	0		
LO 5	0	0	0	3	0		
Total	6	13	8	17	0		
Minus - Overlapped Questions	1	3	2	3	0		
Number of Distinct Items	<b>5</b>	<b>10</b>	<b>6</b>	<b>14</b>	0		

# Faculty Change: Non-participating Faculty

- What is the effect of IMPACT on the attitudes of administration and non IMPACT faculty with respect to teaching and learning?
- Data collection: Survey
  - Respondents: faculty in the department of IMPACT fellows who had already implemented their redesign
  - Example questions:
    - Were you previously aware of the IMPACT project?
    - How have you heard of the IMPACT project?
    - Have you considered changing your teaching practices in any way as a result of your awareness of the IMPACT project?

# Student Perceptions

- Research questions
  - Do students participating in IMPACT courses perceive these courses as engaging them in active learning?
  - Do students participating in IMPACT courses feel an enhanced sense of confidence and competence?



# Student Perceptions

- Do students participating in IMPACT courses perceive these courses as more engaging than traditional versions of the courses?
- Data collection
  - Surveys
    - Classroom Experience Questionnaire (CEQ)
      - Inspired by the Reformed Teaching Observation Protocol
      - Developed for student self-report
      - Piloted, then revised/shortened
    - Learning Climate Survey
      - Short form
      - Just began implementation

# Student Perceptions: CEQ

- Classroom Experience Questionnaire Items
  - The instructor provided opportunities for students to challenge opinions expressed in class.
  - The instructor provided opportunities for students to challenge opinions expressed in class.
  - The instructor connected course content to students' experience and knowledge.
  - The instructor asked students to explain their ideas.
  - The instructor encouraged students to participate actively in class.
  - The instructor provided opportunities for students to ask questions.
  - The instructor provided opportunities for students to process new information.
  - The instructor allowed students to answer a question or solve a problem in more than one way.
  - The instructor maintained a climate of respect within the class for what others had to say.

# Student Perceptions: Learning Climate

- Learning Climate Survey
  - My instructor provides me with choices and options on how to complete the work.
  - My instructor understands my perspective.
  - My instructor encourages me to ask questions.
  - My instructor listens to how I would like to do things.
  - My instructor tries to understand how I see things before suggesting a new way to do things.
  - My instructor stimulated my interest in the subject

# Student Perceptions: Classroom Environment

- Pilot results summary
  - Used comparison sections for four courses
  - Mixed results
    - Results vary by course
    - May be a result of instructor/implementation effects
  - New data set should help clarify
    - Compare CEQ and LC scales
    - Collect within group data

# Student Perceptions

- Do students participating in IMPACT courses feel an enhanced sense of confidence and competence?
  - Methods
    - Survey
    - Competence Scale from Needs Satisfaction Survey
    - Confidence Level Survey
  - First waves of data currently being collected

# Student Perceptions

- Competence Scale

- I do not feel very competent in this class.
- People in class tell me I am good at what I do.
- I have been able to learn interesting new skills in this class.
- Most days I feel a sense of accomplishment from being in this class.
- In this class I do not get much of a chance to show how capable I am.
- When I am in this class I often do not feel very capable.

- Confidence Scale

- I feel confident in my ability to learn this material.
- I am capable of learning the material in this course.
- I am able to achieve my goals in this course.
- I feel able to meet the challenge of performing in this course.

# Student Learning and Retention

- Research questions
  - Does the implementation of IMPACT courses improve course grades compared to non-IMPACT versions of the same class?
  - Does student participation in IMPACT courses improve student performance in selected future courses?
  - Does participation in IMPACT courses improve student critical thinking skills?
  - Does participation in IMPACT courses improve retention to the institution after one year?
  - Do students involved in IMPACT have better four and six year graduation rates?
  - Do students involved in IMPACT courses perform better on faculty identified measures of learning?

# Student Learning and Retention

- Data
  - Course grades
  - One year retention
  - Four and six year graduation rates
- Analysis strategies
  - Comparison sections when available
  - Historical course data
- Cohort 1 results:
  - Only grades have been analyzed
  - Higher grades overall



# Student Learning and Retention

- Does student participation in IMPACT courses improve student performance in selected future courses?
  - Data collection
    - Grade comparison between students who experienced an IMPACT course and those who did not
    - Currently working with IMPACT faculty to develop lists of relevant post-requisite courses for each IMPACT course that can help narrow this comparison

# Student Learning and Retention

- Does participation in IMPACT courses improve student critical thinking skills?
  - Data collection
    - In development
    - Considering use of VALUE Rubric for Critical Thinking

# Student Learning and Retention

- Do students involved in IMPACT courses perform better on faculty identified measures of learning?
  - Data collection
    - Differentiated by course
    - Comparison with concurrent traditional version of course where possible
    - Comparison with baseline level of IMPACT course (pre-post design) when possible

# Lessons Learned

- Both course-specific and universal student outcomes need to be measured
- Faculty participation in assessment can be challenging to attain, but is essential to measuring course-level changes
- It is possible to coordinate large-scale course reform across university colleges

# Questions?

- Thank you for your attention!
- Questions for you to consider:
  - What kinds of course transformation efforts has your institution undertaken?
    - How are you assessing these efforts?
    - What are the challenges you have faced?
  - What aspects of the IMPACT effort do you find relevant to your institution's efforts?
  - What is the IMPACT project NOT examining or assessing that we should be?