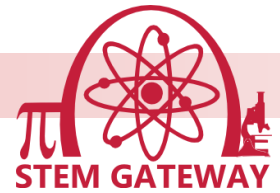


COURSE REDESIGN PROJECTS

Gary Smith Audriana Stark



“... student success, however it is defined and measured, must have at its core success in individual classes. Though student success is indeed everyone’s business, it is the business of faculty in particular.”

Tinto, V., and Pusser, B., 2006, *Moving from theory to action: Building a model of institutional action for student success*

“The biggest and most long-lasting reforms of undergraduate education will come when individual faculty or small groups of instructors adopt the view of themselves as reformers, within their immediate sphere of influence, the classes they teach every day.”

K. Patricia Cross, Professor of Higher Education,
University of California, Berkeley; Trustee, Carnegie
Foundation for the Advancement of Teaching

How STEM Gateway course redesign projects work:

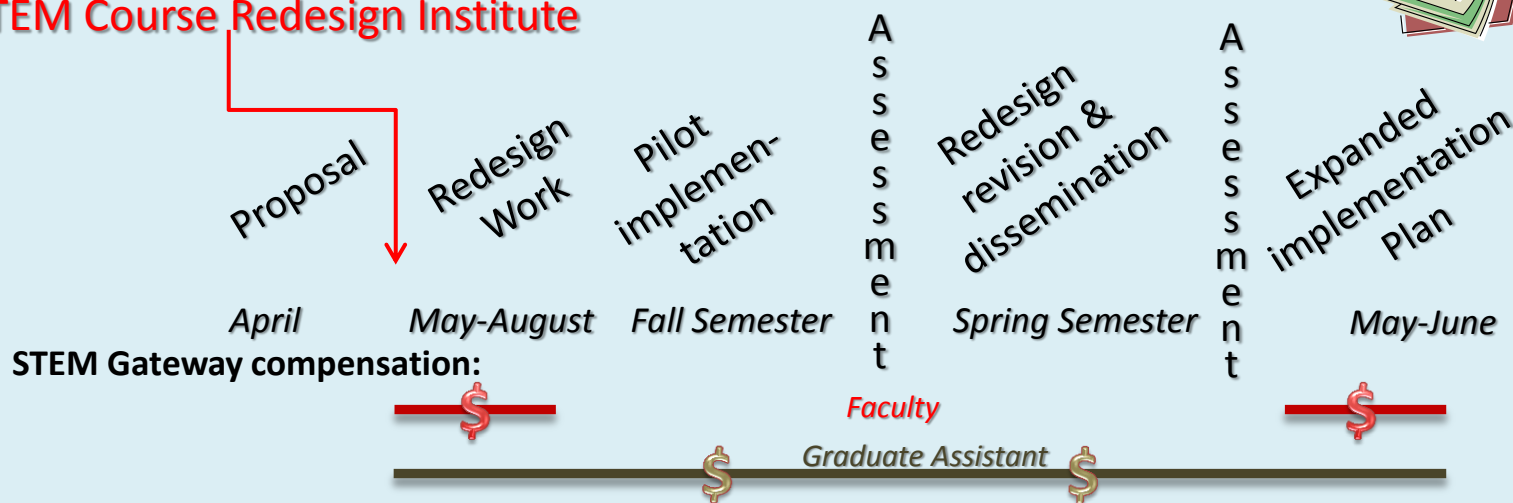
3 redesign teams begin each year

Each course-redesign team consists of:



STEM Course Redesign Institute

Timeline



STEM Gateway Course Redesign Advisory Council

Leaders who advise STEM Gateway to establish priorities

Charles Fleddermann, Associate Dean of Engineering

Kate Krause, Dean of University College

Mark Peceny, Dean of Arts & Sciences

Steve Cabaniss, Chair, Chemistry & Chemical Biology

Patricia Henning, Associate Chair, Physics & Astronomy

Terry Loring, Chair, Mathematics & Statistics



2012-2013 Course Reform Projects

CHEM 122 – General Chemistry II
 MATH 121 – College Algebra
 PHYC 161/167- University Physics

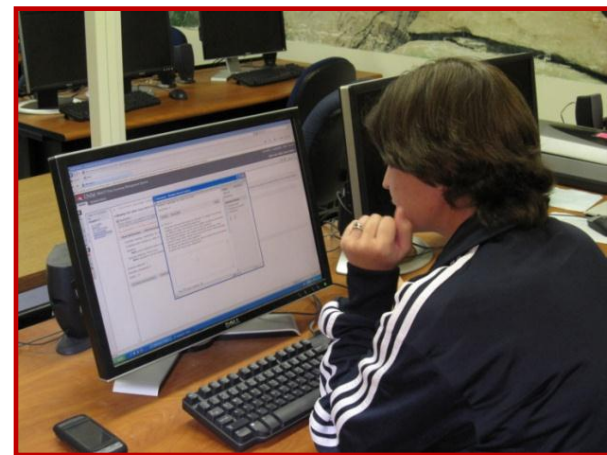
2013-2014 Course Reform Projects

CHEM 121 – General Chemistry I
 BIOL 204L – Plant/Animal Form/Function Lab
 PHYC 1xx – Pre General Physics

Recommended
 by 2013
 symposium
 participants

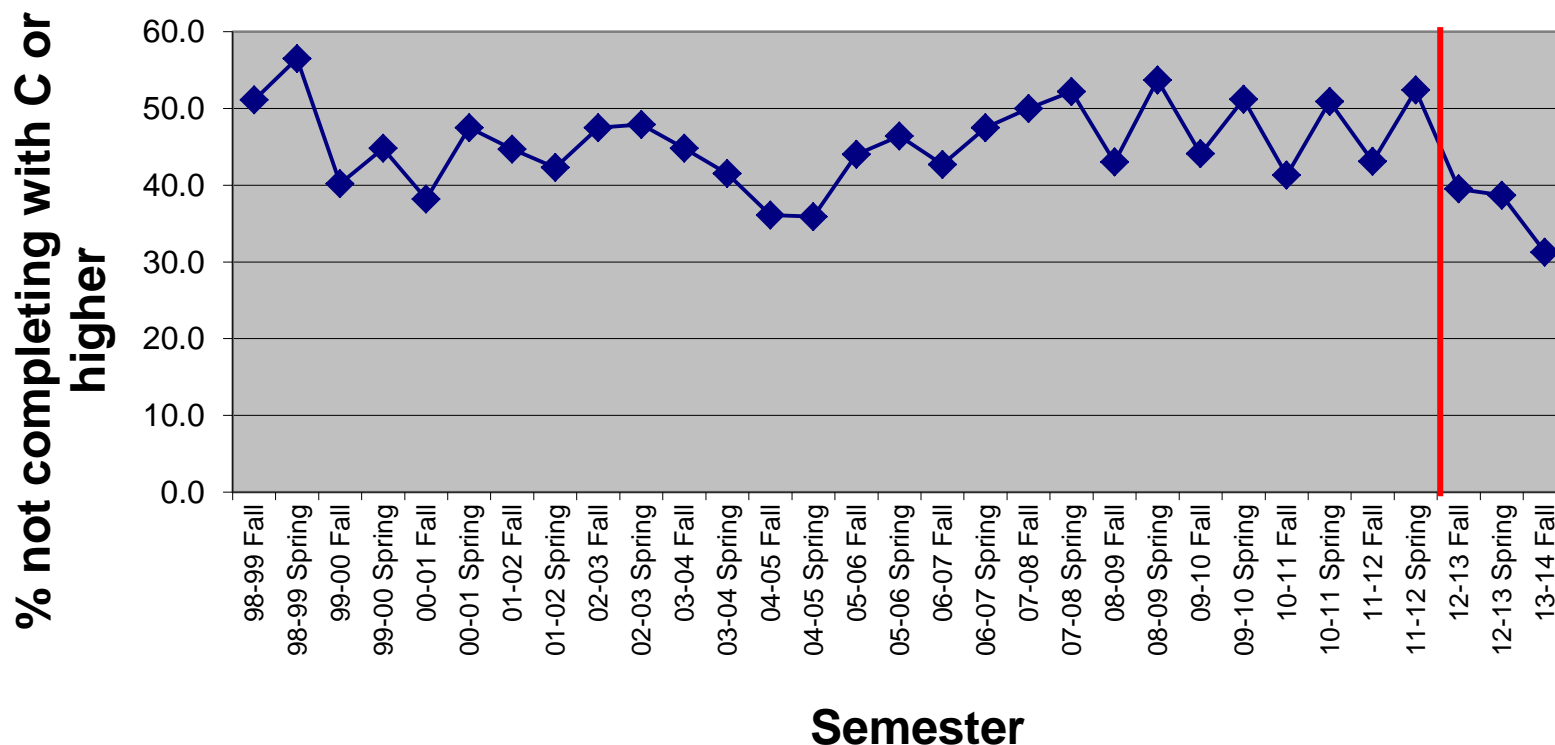
2014-2015 Course Reform Projects

BIOL 202 – Genetics
BIOL 204 – Plant/Animal Form/Function
MATH 123/150 – Trigonometry/Pre-Calculus

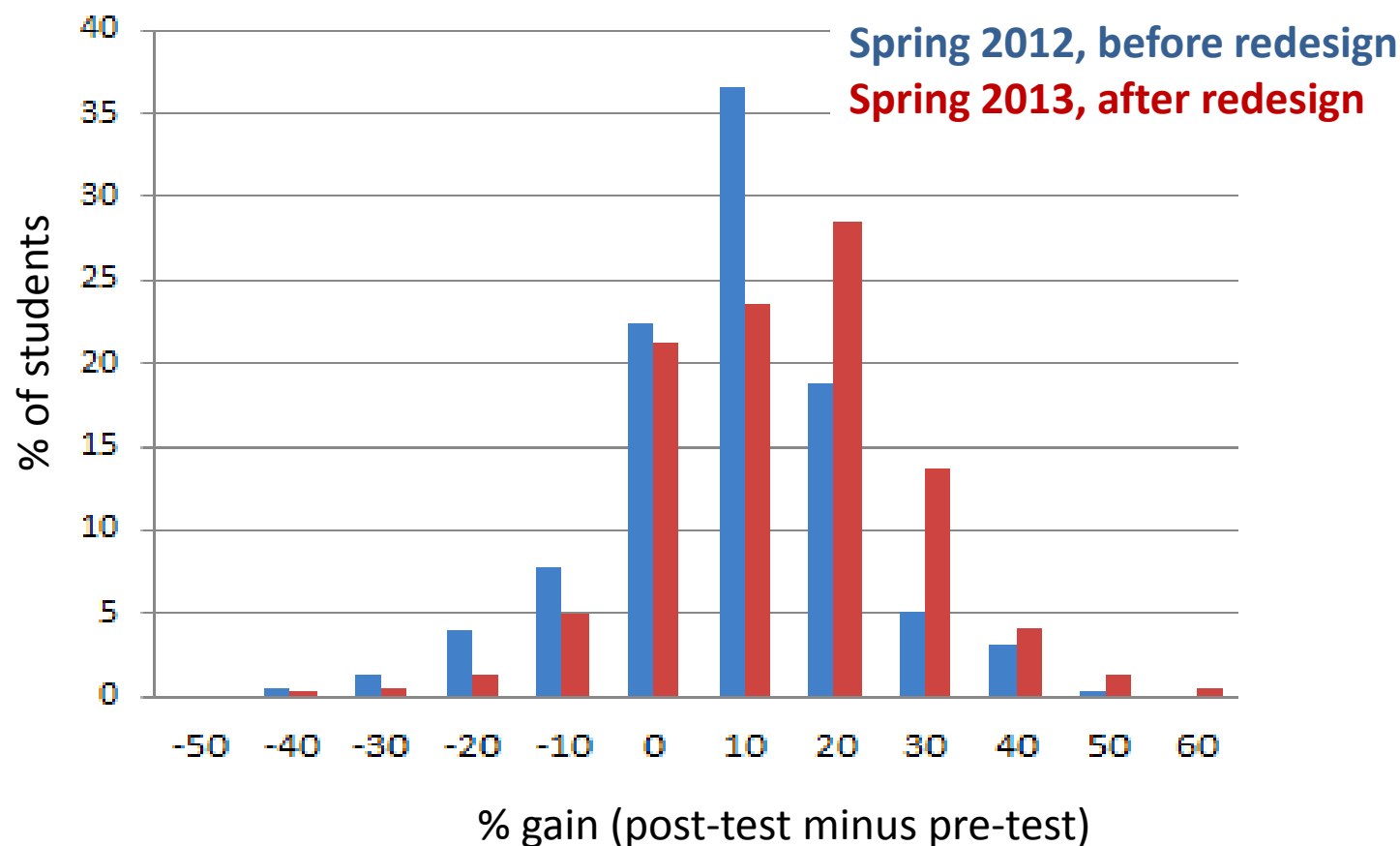


Improved success in college algebra (Math 121)

Partly a result of curriculum change (across all sections) and pedagogical change (in some sections) since redesign first implemented in Fall 2012

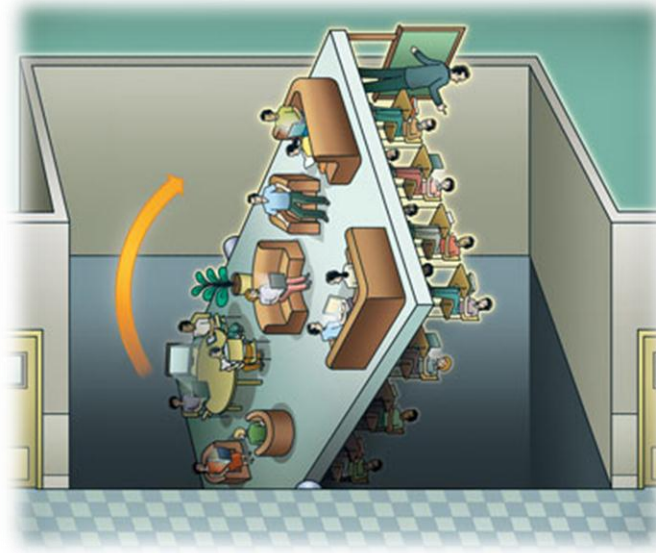


Evidence of greater conceptual learning in General Chemistry II (Chem 122) following redesign



Some redesigned courses are using elements of flipped learning

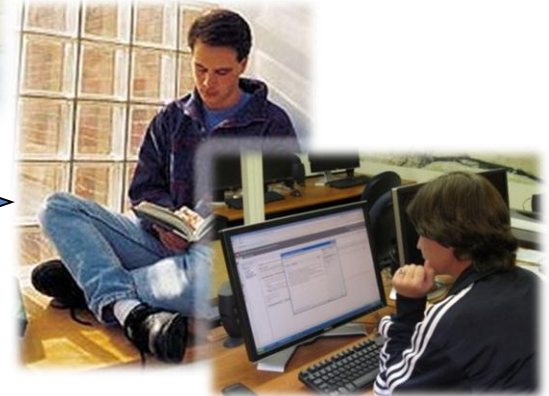
In Class



Out of Class



*Introduction to
content*

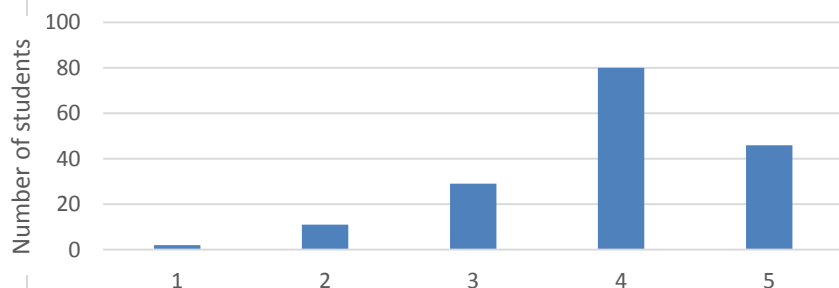


*Elaboration and
engagement for deep
learning*

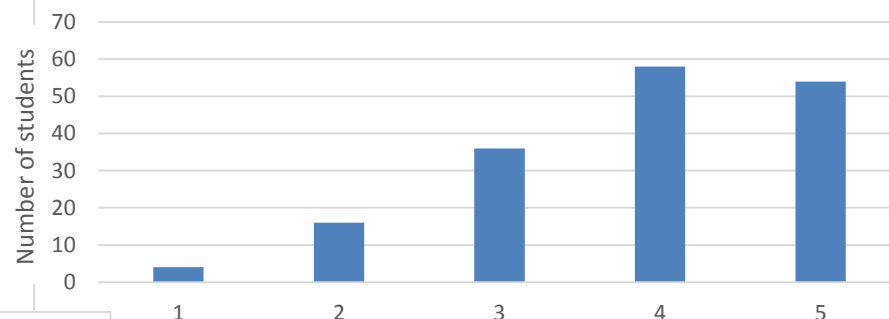


Students are responding positively to the redesign structure (e.g., Chem 122)

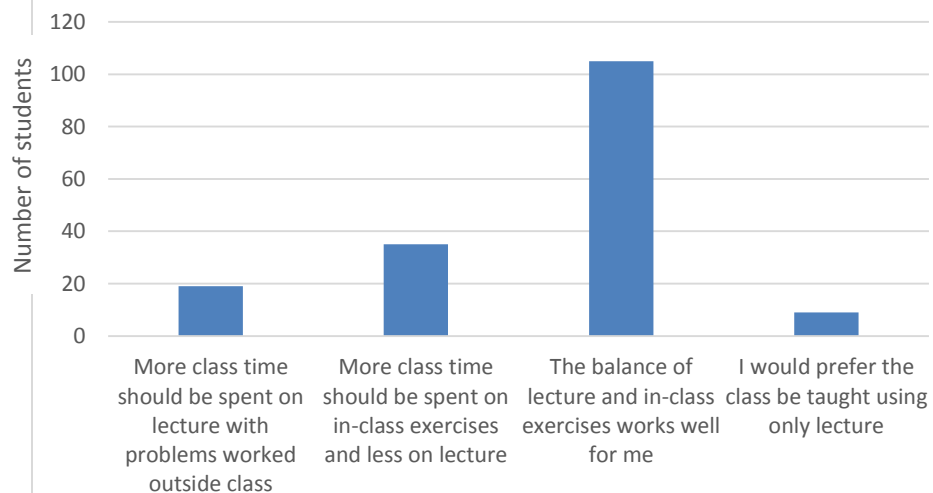
Q1: How well do the reading assignments and quizzes prepare you for class? (1- 5 where 1 = not at all and 5 = very much)



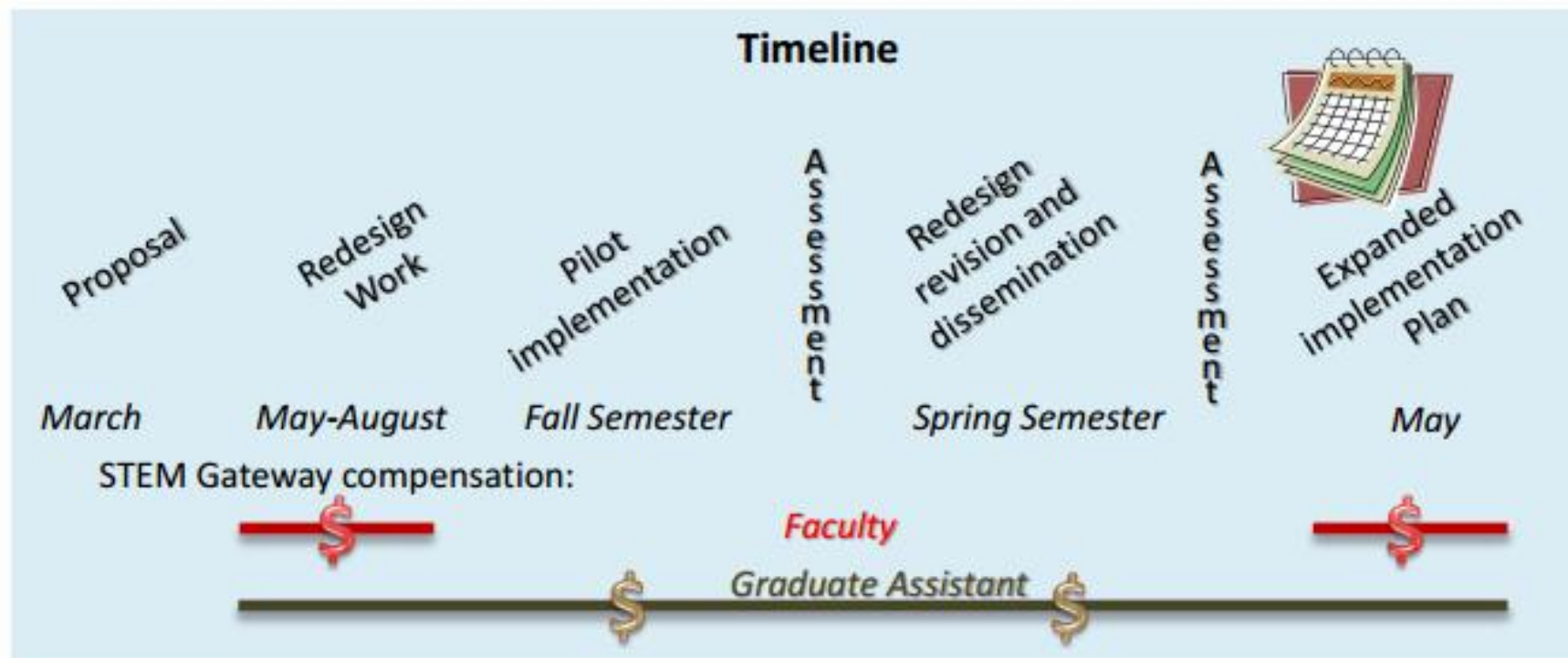
Q2 How effective are in-class exercises in helping you learn the material? (1-5 where 1= not at all and 5 = very much)



Q3 Which statement do you agree with most?



Course redesign teams are funded for 1 year ...



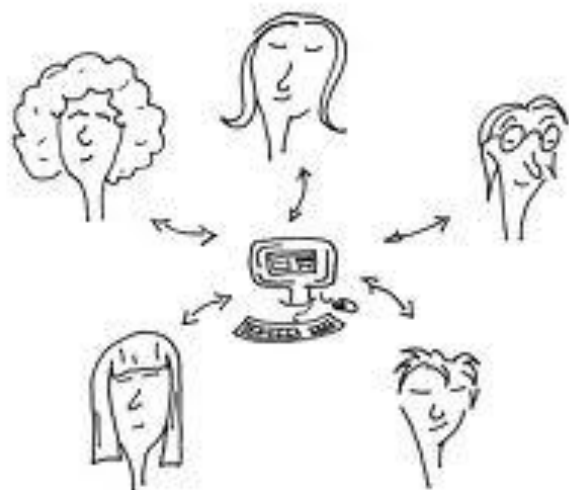
... but what happens after that year?

Teams must:

1. Expand
2. Sustain

Expanding across section instructors

Sharing curricular and pedagogical knowledge via archived resources on PBWorks/Google Drive



Training material:
Website guide
Video of teachers in action

Sustaining

Teams close the loop with assessment data to sustain successful components

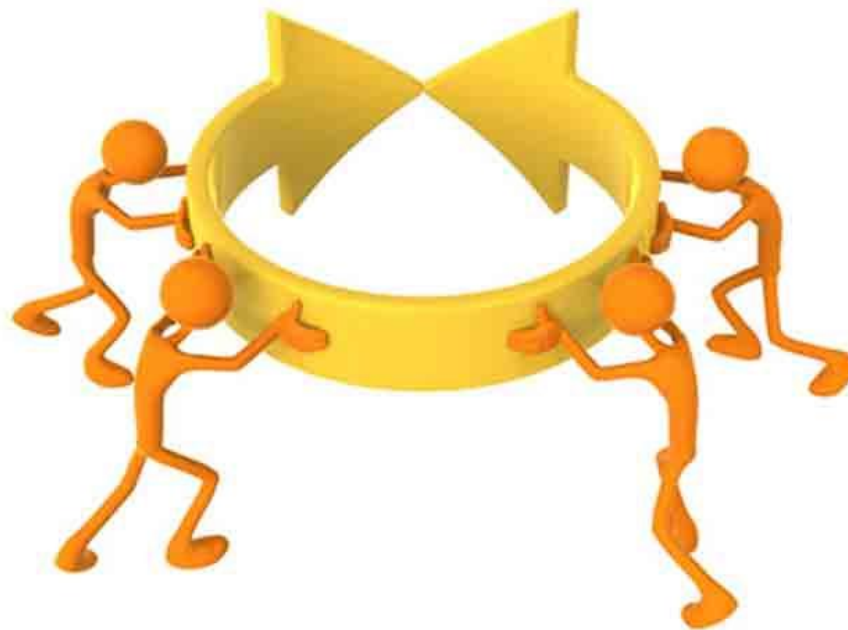
Elements include:

Informal meetings

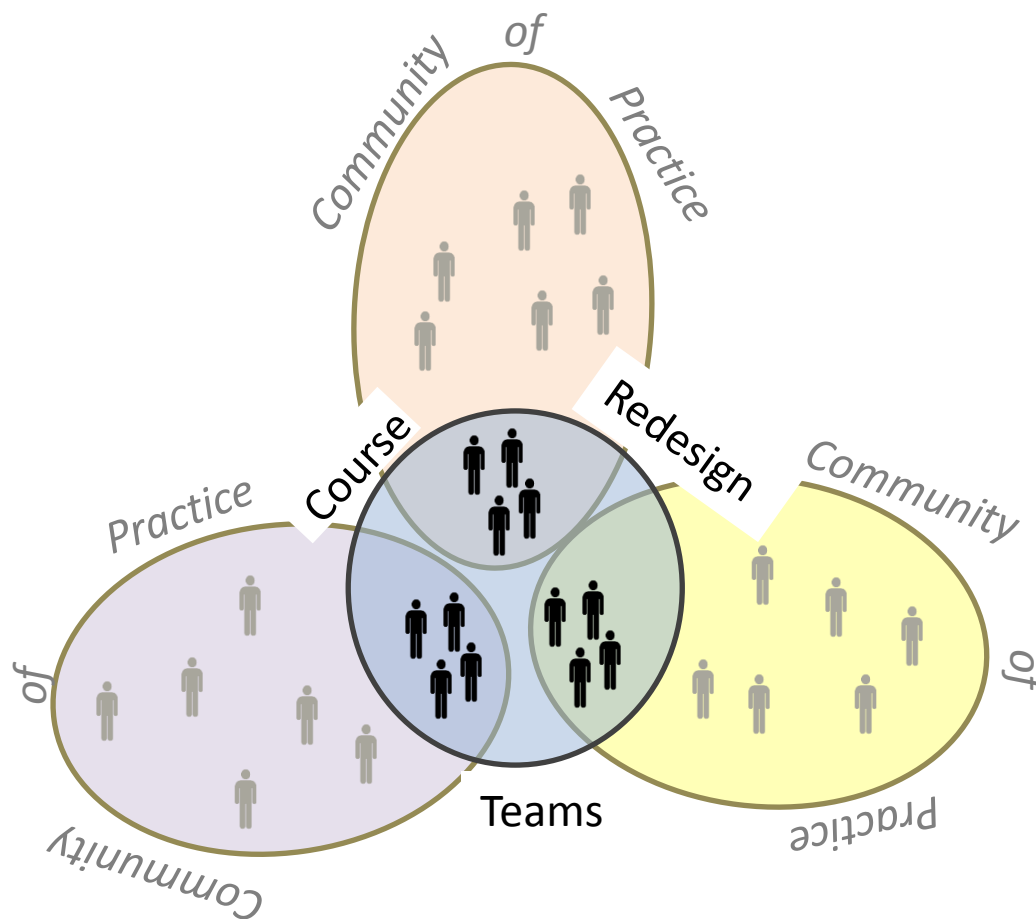
Learning from one another through peer observations for learning

Standardization

Sharing and managing knowledge



From a Community of Course Redesign Teams to Communities of Practice



To create, expand and exchange knowledge and develop individual capabilities