The "Embedded Expert" model of educational transformation: The SEI and TRESTLE

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Abstract

The "embedded expert" model supports **systemic education reform** by partnering educational experts with faculty **in a department** to support **course transformation**. This model is being **adapted and studied at 7 institutions** (TRESTLE) in order to test how this intervention can be implemented in different institutional contexts to propagate widespread STEM education reform.

Question: The SEI "embedded expertise" model shows promise: Can we propagate change through a smaller infusion of resources and expertise?

"EMBEDDED EXPERT": Disciplinary expert trained in pedagogy, partnering with faculty from within the department to provide coaching and labor to support course transformation.

Historical antecedent: The SEI

The Science Education Initiative hired postdocs as **Embedded Experts** directly within departments to support course-transformation & local expertise.

	U. Colorado	UBC
# Years	8	7 (ongoing)
Total Funding	$5.3M USD	~9.7M USD
Funding / Dept.	$150-860K (ave $650K)	$300K-$1.75M (Ave $1.68 M)
# Depts.	7	7
# EE's / Dept.	1-3	2-5

The SEI has shown promise

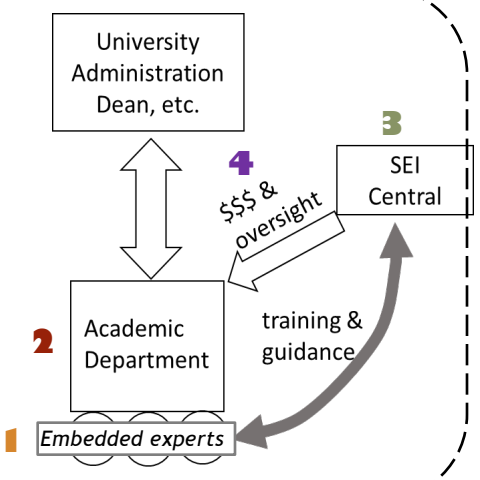
Impact on...		CU	UBC
COURSES	# courses (ave % per dept)	103 (25%)	146 (33%)
STUDENTS	Annual enrollment (ave % annual)	18,000 (50%)	43,000 (59%)
FACULTY	# faculty (ave % per dept)	190 (66%)	Not available

RESULTS ACROSS DEPARTMENTS

But the SEI was a large investment

Key elements of the SEI Embedded Expert model:

1. **STEM education expert**. Requirements: To be right for the job, with good content knowledge, flexible, good listener and facilitator.
2. **Embedded in departments**. Requirements: Strong departmental partners, with engaged & effective department director, supportive chair, development of vision in department with a sense of urgency to act.
3. **Central organization**. Requirements: Good centralized support, with training, reflective oversight, a professional community, & access to assessment expertise
4. **Funding** really helps for incentive, personnel, and oversight.



Building on the SEI model: TRESTLE

(Transforming Education, Stimulating Teaching and Learning Excellence)

BAY VIEW ALLIANCE

TRESTLE Institutions:
University of Kansas (Lead)
Indiana University
University of Colorado
University of California, Davis
University of Texas at San Antonio
University of British Columbia
Queens University

A trestle provides networked support to scaffold change

Core idea: Leverage the power of ***intellectual communities*** to amplify the effects of embedded experts, helping a smaller infusion of resources to support change.

7 institutions, using diverse embedded experts

- Individual departmental postdocs (UBC, KU, QU)
- Faculty leaders supported by course transformation awards (CU)
- Faculty leaders providing consultations to colleagues (CU)
- Faculty learning communities (CU, IU)
- Faculty in School of Ed. partnered with departments (UTSA)
- Assessment expert partnered with faculty (UCD)

...and multiple community building efforts

- National TRESTLE network (all)
- Bay View Alliance network (all)
- Communities of Practice for embedded experts (UBC, KU)
- Interdepartmental consortium on course transformation (KU, CU, QU)
- Faculty learning communities (CU, IU, UTSA, UCD)

Thus, local experts are embedded within communities within departments, across departments, within the university, and at the national level.

Communities allow connection to people and resources, sharing lessons-learned, opportunities for reflective practice, development of a shared vision, and leveraging assessment practices across the project.

Stay tuned for results : We are in Year 1 of a 5-year grant

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More Information
http://colorado.edu/csl/TRESTLE and http://colorado.edu/sei
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