Embedding a Learning Assistants Program in a Faculty Learning Community to Foster Student Success

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Research Overview

Purpose: To examine the nature of undergraduate students’ learning experiences in science and mathematics courses, and relationships to students’ academic success in STEM programs.

Question: How does the nature of students’ learning experiences and academic outcomes change over time in courses taught by instructors who have participated in a faculty learning community (FLC)? Does the incorporation of learning assistants (LAs) make a difference?

Data: Classroom observations (undergraduate researchers)
Academic outcomes (Institutional Research)
FLC

• Community of Practice
• Content-Focused
• Ongoing support

(Bressoud & Rasmussen, 2015; Henderson, Dancy, & Niewiadowska-Bugaj, 2012; Hearne, Henkin, & Dee, 2011)
LA Program

Social and academic support

• Promote inclusion, greater self-efficacy and motivation
• Provide just-in-time academic support
• Foster metacognitive learning strategies
• Model “expert” ways of organizing knowledge

(Sellami, Shaked, Laski, Eagan, & Sanders, 2017; Talbot, Hartley, Marzetta, & Wee, 2015).
FLC-LA Embedded Elements

Faculty and LAs training on evidence-based, learning-centered instructional practices important for STEM

- Active learning
- Interdisciplinary connections
- Metacognition
- Inclusive pedagogies
- Teaching tools (e.g., think-pair-share, exam wrappers, student response systems)

LA and Faculty ideas and feedback shared across groups
Knowledge Organization

Knowledge Organization Example

The procedure is actually quite simple. First you arrange items into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step; otherwise, you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important, but complications can easily arise. A mistake can be expensive as well. At first, the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but, then, one can never tell. After the procedure is completed, one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more, and the whole cycle will then have to be repeated. However, that is a part of life.

Tools for Knowledge Organization

Learning Assistants

- Flashcards
  - Rewriting notes
  - Blending w/ tabs
  - For classes/chapters
  - Khan Academy Vid.

- Drawings
  - Combine visual display w/ authentic representation

- Colorful notes
  - Speaking, explaining, out loud

Faculty

- Definitions
- Notation
- Glossary (def., own words, example, simple explanation, non-examples)
- Questions about impt. ideas
- Pictures/diagrams
- Specific examples
- Concept map
- Associations w/ music, history (interdisciplinary connections)
Preliminary Findings – Observations

Precalculus (FLC + LA)

Precalculus (FLC, no LA)

Chemistry (FLC + LA)

Red = instructor actions, blue = student actions
Preliminary Findings – Academic Outcomes

Course Success Rates

Data from Campbell et. al., 2018 USG-G2C presentation
Considerations for Adapting Embedded FLC-LA Program at Other Institutions

FLC
• Common meeting time
• FLC teams (forming, charging, ongoing support)
• Outcomes

LA Program
• Program administration (recruitment, matching, payroll, monitoring)
• Pedagogy course
• Training for faculty on effectively using LAs

Scalability
• Accountability
• Incentives/funding