Research Spotlight

2766 - Faculty GAINs: Faculty Learning Communities to Promote STEM Transfer Student Success
Partnerships and Collaboration, Diversity and Inclusion

Faculty and faculty development are an often-overlooked aspect of the transfer process. An R1 institution developed faculty learning communities with a local technical college specially focused on promoting community between the institutions and improving courses for STEM transfer students. Initial findings and items for potential implementation at your institutions will be discussed.

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Faculty GAINs: Faculty learning communities to promote STEM transfer student success

PRESENTERS: ABBY BOYD AND DR. BRIDGET G. TROGDEN
I.) Framing the Problem and the Equity Lens
• Students in STEM degrees who start at 2-year colleges take longer to finish, graduate at lower rates, and have more acquired credits that do not apply toward a degree.

• Differing socioeconomic resources of students can exacerbate institutional equity issues.

• Our idea: Faculty are an often overlooked resource for improving gateway student success. Create structured faculty learning communities to drive equity and alignment.
II.) Our Approach: Faculty Learning Communities (FLCs)
Link: Gateway Alliance Improvement Network (GAIN) Pilot Website
Opportunity 1: Teaching STEM Online

A blended FLC where participants learned and discussed topics surrounding teaching STEM courses in online environments

Participants included: faculty from R1 institution, faculty from a 2-year institution, graduate students, and post-doctoral scholars

Modality:
• One Semester
• Fully online, mostly asynchronous with one synchronous meeting a month

*Major Content of Teaching STEM Online FLC*
Opportunity 2: Gateway STEM Design

A FLC designed to help STEM instructors of gateway courses incorporate inclusive practices into their course assignments, activities, and syllabi.

Participants included: faculty from R1 institution and faculty from a 2-year institution

Modality:
• One Semester
• Mostly virtual with an optional end of semester gathering in-person
• Asynchronous content with biweekly synchronous meetings

Assignments  Activities  Syllabi

Major Content of Gateway STEM Design FLC
III.) Was It Impactful?
Data was collected through:

- FLC deliverables
- Pre- and Post- surveys
- Reflections
- Longitudinal assessment data
We focused heavily on the components of learner-focused assignment design. Every assignment must have:

- **PURPOSE**: Aligns with what knowledge or skills students will gain. Transparent about sharing the relevance of the assignment. Practically useful to students outside of class.

- **TASKS**: Clearly indicates what the students should do and how they should do it.
• **CRITERIA:** Communicates how students will be assessed. Include examples of completed assignments.

• **INCLUSIVE, LEARNER-FOCUSED ASPECTS:** Welcoming and positive so students can approach the assignment confidently. Respectful of diversity. When possible, provides choice.

  
  Link - Assignment Guide

  Link - Test Guide

**Findings:**

• Revised assignments overall show *growth* in learner-focused assignment design. FLC participants should document the changes they make.

• Assignments that are not quizzes or tests are often easier to adapt for transparent, learner-focused design than assignments that are tests and quizzes.

• Overall, participants improved assignment design the most in the TASKS area. Revisions in
INCLUSIVE aspects are not as apparent in construction of tests and quizzes.
Participants in both FLCs indicated feeling a strong sense of community and appreciated the mixing of perspectives of individuals in different stages in their careers and from different institutions.

Participants in both FLCs indicated that they felt prepared to implement what they learned in their courses.
"Providing valuable assessment feedback" was rated highest (5.0 on a 5 point Likert scale) when participants were asked about the items' relationship to successful teaching and learning for all students (Teaching STEM Online)

Providing ADA accommodations in online environments also was also rated as a very important aspect of successful teaching and learning for all students (4.7; Teaching STEM Online)
"I always had the goal of creating an inclusive classroom where my students could learn and feel supported...but I was never clear about how to do that. Now I know how many small, concrete steps I can take to support my students."

"Previously, I viewed inclusivity as an add-on. Something to think about after my course was designed. Now I know that inclusivity should be viewed from the bottom-up and should be considered in every part of the course."
"We need to show our students that their voice matters, both orally in what we say to them and explicitly written out in what we give to them in the syllabus and assignments."
Examination of general education assessment data taken from three years (N = 173) indicates that faculty participation in educational development activities correlate to improve student learning. Courses offered by faculty members that participated in FLCs and development activities are significantly more likely to score higher on common assessment rubrics, an indicator of student learning. ($X^2 (1, N = 173) = 6.67$, $p = .010$)
The data included in that measure included both GAIN and non-GAIN courses and FLCs, however it serves as a representation of the measured effectiveness of FLCs on instructor preparedness.
V.) Next Steps and Acknowledgements
Continue to offer both FLCs and adapt them as needed based on participant feedback.

More in depth analysis of FLC deliverables for evidence of course changes for inclusive design.

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Please be in touch if you’d like to talk to us more! We love to collaborate!

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