Active and Peer Learning

This article found that groups that are majority women (3/4) were more effective at promoting participation than equal representation or minority representation.
Important when considering composition of teams for group projects.


Supplemental instruction (as well as facilitated study groups) are more effective than tutoring in many contexts because these approaches normalize and integrate the help in a pro-active, targeted manner. SI or FSG programs do not mean one should eliminate tutoring; however, SI and FSG can buffer many students within gateway courses as well as faculty time. A worthy investment.


The way a course is organized, including regular homework assignments and chances in-class to work through problems with feedback, can make a difference in performance and understanding. A number of articles (Eddy & Hogan, 2014) have examined course structure and active learning with similar results. Reading these carefully can help with syllabus design and rethinking the use of class time.

Advising/Difficult Conversations

This article recommends that professors combine high standards with an explicit communication of belief in the student to achieve a higher standard when giving critical feedback. This can help to buffer ambiguity regarding the intent of critical feedback particularly when involving a cross-race interaction.


Although the study is based on a simulated advising situation, the implications of the findings are relevant to advisors. This helps to explain why White advisors may avoid
giving critical feedback (failing to warn) to advisees of color for fear of looking racist even when that feedback could have been helpful.


*Documents what researchers call “comfort feedback” or the false reassurance that certain students (such as women in math) do not need to worry about poor skill development or performance. Advocates for growth mindset and the encouragement of skill development.*


*This article focuses on the ways in which faculty embed advising messages within their class time (at only 30 minutes over the entire semester) suggesting this approach reaches a wider array of students than does meeting with students individually in meetings. Strategy can be extended beyond transfer students.*

**Mentoring—Peer and Faculty/Professional**


*Suggests that peers can provide positive buffering to identity and belongingness even in situations where the field itself (and professionals within them) are less diverse.*


*Promotes the concept of “recognition” by experts (e.g., faculty and staff) as a key predictor of persistence for underrepresented students, beyond the student’s interest, competency, or performance.*


*Documents the costs incurred by faculty who became research mentors for students of color. A good piece to raise policy questions at the institutional level for supporting faculty mentoring of students in equitable and effective ways.*

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This article explains why training mentors is so important for a mentoring program. MentorNet has tested each module and does not run a program longer than it has modules for to promote mentee/mentor interaction.


If peer mentors are not validated and trained by their faculty, they may be perceived as less credible and have a less positive experience.


Explains the LA-STEM program and how the peer mentoring operates effectively. In the LA-STEM program, they have a pathway to recruit underperforming students after their first year of courses.


Documents key element of the Meyerhoff scholars program and how the scholars fared better than a comparison group of college students.

**Climate and Intersectionality**


Highlights how the environment including posters and role models provide messages of who belongs.


Identified differences in perceptions of racial climate and diversity, stereotypes and marginalization as associated by second generation and first generation immigrants.

This article documents that values affirmation research is not only relevant for students of color in educational settings generally, but also for first-generation college students in science. This suggests that first-generation college students may perceive a limited sense of belongingness that can impede their performance on exams. Having students write about things they are good at or value can help to mitigate negative performance; similar results have been suggested by introducing growth mindset beliefs in class.


This paper drew upon nearly 2000 women pursuing STEM fields who were enrolled in the 2004 National Study of Living-Learning Programs. Their sense of belongingness was related to overall campus racial climate as well as the residential hall climate.


Using a dataset with over 5,000 student participants, the researchers disaggregate the data illustrating differences across gender and race, and at the intersection of gender and race.


Explains how the intersection of class and gender play out as students pursue their STEM goals.