The Power of Conversation: Cross-disciplinary Discussions in the Collegium on Inquiry in Action Improve Teaching Practices for the Associate Instructor Participants

Karen L. Bohorquez1, Elizabeth Middleton1, Dan Johnson1, Julie Johnson Searcy3, Susan Lamberth2, Charla McCormick2, Deanna Soper1

1Biology, 2Anthropology, 3Communication & Culture, Indiana University, Bloomington, IN 47405

The IU Collegium on Inquiry in Action

An interdisciplinary Teagle Foundation-funded program consisting of graduate student Associate Instructors (AIs) and faculty mentors who convene once a month in order to discuss teaching and learning theory as well as pedagogical practices, and to offer support in bringing new teaching methods into the classroom.

Collegium Demographics

- Convened at Indiana University, Bloomington from September 2008 – May 2009
- 3 departments (Biology, Communication & Culture, and Anthropology)
- 17 participants (13 women, 4 men)
  - 11 graduate student Associate Instructors (8 women, 3 men)
  - 3 faculty mentors (3 women)
  - 1 Campus Instructional Consultant (1 woman)
  - 2 School of Education researchers (1 woman, 1 man)
- Elective participation and a financial award
- Varied teaching backgrounds

Collegium activities

- Reading topics on memory, motivation, scaffolding, learning transfer, experts vs. novices, signature pedagogies, and assessment
- Reflective reading responses uploaded to our Collegium website on Oncourse
- Inter- and intra-disciplinary discussions on teaching and learning theory, pedagogy, and bottlenecks
- Classroom implementation of theory, followed by assessment, reflection, and technique refinement
- Discussion of real problems experienced in classrooms across disciplines to generate ideas for resolution and educational experimentation
- Written course portfolios

What processes and cross-disciplinary discussions resulted in significant outcomes for Collegium participants as Associate Instructors?

In particular, we explored the subjects of
- Reflective teaching practices
- Signature pedagogies
- Resolving ambiguity

Reflective teaching practices

We found interdisciplinary discussions in the Collegium encouraged reflection on the instructors part, leading to the design of innovative activities that asked students to examine their metacognitive development.

A Biology AI identified the cross-disciplinary importance of critical thinking and writing. She asked students to pre-read and self-evaluate their writing based on prior readings and a provided rubric. Overall, students felt that instructor feedback was most useful in revising their writing (44%), followed by peer feedback (33%) and the rubric (33%); multiple responses allowed.

"I have definitely improved being succinct and clear. My ability to convey ideas has improved tremendously." – L113 Student

In Biology, an AI altered the order of lab-based discussion. “One Communication & Culture graduate student brought up the fact that having a discussion at the end would be more beneficial. Students would manipulate concepts first and then discuss them. Students felt that by using this method, they understand what they were doing, but also got the chance to have a summary of all the activities and concepts at the end."

A Biology AI "noticed that the other two departments do a great job emphasizing reflective learning in their classes, which is something I want to bring to my teaching of biology." She designed an activity using personalized metaphors and short stories as study tools. 30% of the students intend to use these tools in the future and 90% more increased their motivation to study.

"When studying, I intend to visualize concepts in my head and make them interact in order to remember them better." – L114 Student

"I really like thinking of different ways to relate this information to my own life." – L104 Student

Signature pedagogies

We found that cross-disciplinary discussion helped us to identify our own discipline's signature pedagogies and encouraged us to apply them in the classroom.

Through identification of signature pedagogies in Communication & Culture, one AI modeled the application of the pedagogy from her own research for her class. She then provided an activity where students apply the signature pedagogy. This resulted in a 40% increase in students connecting theory with their own research between the first and second assignments.

In Biology, one signature pedagogy is systematic thinking. Modeling this process in a lab exercise resulted in a 12% increase in scores on a formal assessment from the previous year and informally 80% of students found the new exercise helpful to their understanding of systematics.

Future directions & Recommendations

At the University level
- Transfer innovations and insights to other AIs not involved in the Collegium
- Develop and encourage AI training programs/courses that introduce the main concepts from the Collegium

In the classroom
- Encourage more inquiry based class time and fewer formalized lectures
- Identify problem areas within the course material and proactively seek teaching methods to address them
- Facilitate year-to-year transfer of knowledge from one cohort of AIs to the next, and create AI notes that identify student misconceptions for each section of a course

Within the Collegium
- Encourage more direct interaction with interdisciplinary AIs through classroom visits or small group work/discussion

Acknowledgements

We want to thank Katie Kearns, Mimi Zolan, Jennifer Robinson, April Sievert, Melissa Gresalfi, & Tyler Christensen for all of their helpful suggestions. Also the Teagle Foundation for their support.