Promoting Changes to Teachers’ Classroom Practices

Jeff Phillips
Loyola Marymount University
Los Angeles, CA

Perspective

• What affects the choices teachers’ make in the classroom?
• What are the differences & similarities between college and high school teachers?
• Thanks to Lisa Taylor (LMU ‘11 & physics teacher at Santa Margarita HS)

Methods

• 63 high school and 55 college physics instructors from Southern California completed a voluntary web-based survey.
• The survey consisted of 99 items, including:
  ▫ Instructor demographic characteristics
  ▫ Familiarity and usage of research-based instructional strategies (RBIS)
  ▫ Description of classroom practices
  ▫ Frequency of interactions with other teachers and researchers
  ▫ Beliefs about teaching and learning
• 28 instructors participated in follow-up email discussions.

Methods

• RBIS familiarity was based on the number of “encounters” none (0), one (1), multiple (2) and able to lead encounters (3).
• RBIS usage was scored none (0), partial adoption or adaptation (1) or complete adoption (2).
• The portion of class devoted to student-student interaction was also computed using a breakdown of class time.
Influences on Classroom Practice

- The Distal Community has little connection with what happens in a teacher’s classroom.
  - Attending physics education conferences or reading journals do not correlate with greater RBIS usage or the portion of class devoted to student-student interaction.

Intrinsic Interest

- Understanding what is the best way to explain physics is important to me.
- I like to teach.
- I think that learning how students learn is interesting.
- I like learning the most effective ways to help students learn.

- All of the high school teachers had an average score 0.75 or above, with 92% agreeing with all four statements.
- The college teachers were also positive, but 11% had an average less than 0.75. For those in this small group, their average fraction of time devoted to student-student interaction was 0.093.

Views of Intelligence

- “entity” view is that intelligence is an unchangeable, fixed internal characteristic.
- “incremental” view is that intelligence is malleable and can be increased through effort.
  - Some students are born better mathematicians or scientists, others are stuck with limited ability.
  - For students to learn math & science, ______ is more important. (hard work ↔ natural ability)

- The college instructors who had unfavorable responses to these two items had classes with significantly less student-student interaction.

Self-regulated Teaching

- I often find that I am surprised by the class average on a test.
- I seek out students’ opinions and feedback throughout the course.
- During class, I find it difficult to know if all of the students understand the material.

- College instructors who had unfavorable views on these questions had less student-student interaction in their classes.
Local Community

- I often discuss ideas for different pedagogies with my peers.
- I actively seek feedback about my teaching from my colleagues, administrators, and experts.

- Responses from the college teachers indicated that there is greater RBIS usage when there are collaborative relationships. Both HS and college showed greater student-student interaction with more collaborative relationships.

Creating Community in SoCal

- Poster Sessions
  - Last year we added a poster session to the Fall SCAAPT meeting. This helped to break up the day and get people interacting.
- New Teacher Workshops
  - Started a workshop series that will include networking and mentoring support for teachers.
- Local Area Networks (LANs)
  - Financial support to start professional learning communities that are formatted to increase social interaction and to meet the needs of physics teachers.

Conclusions

- Drive-by interactions are not sufficient to entice teachers to adopt RBIS.
- Prolonged interactions with colleagues does correlate with RBIS usage.
- Teacher’s view of students’ intelligence and learning, as well as their own, correlate with classroom practice.

http://myweb.lmu.edu/jphillips/PER
jphillips@lmu.edu