The Influence of Teaching Approaches in the University Classroom on Student Performance and Motivation

Sheila Settle & Neil Knobloch

University of Illinois
Introduction

• Public needs to know that colleges are delivering on their promises to students and to society (Shulman, 2003)

• Kellogg Commission on the Future of State and Land-Grant Universities…
  – Land-grant institutions need to
    • Create student-centered learning communities that
    • Develop students’ higher-order reasoning abilities, create communities of active, life-long learners, and
    • Become engaged with solving the ill-structured problems of a complex society (NASULGC, 1999)

• Last evening, we were reminded
  – How teachers teach is related to how students learn (Trigwell)
Problem & Context

• Traditional teacher-directed learning
  – Disseminating vast amounts of information
  – Undergraduate education

• Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1987)
  – Encouraged learner-centered teaching
  – Quality instruction supports active learning (Ewell & Jones, 1996)

• Method of instruction influences learning (Leonard, 2002; Schell & Black, 1997)
Conceptual Framework

• College students possess different ways of knowing which influence how they learn and acquire knowledge (Baxter Magolda & Porterfield, 1985; Baxter Magolda, 1992)

• Methods of teaching are grounded on assumptions
  – Teacher-Directed Methods
    • Behavioral-Cognitive Assumptions
    • Lecture-Based Presentations
  – Learner-Centered Methods
    • Constructivist-Social Cognitive Assumptions
    • Problem-Based Learning (Jonnassen, 2000)
Theoretical Framework

- **Epistemological beliefs** (Baxter Magolda, 1992; Hofer, 2002; Schommer, 1990)
- **Motivation**
  - **Expectancy Value** (Eccles & Wigfield, 2002)
    - **Goal Orientation** (Ames, 1992)
    - **Self-Efficacy** (Bandura, 1997)
    - **Task Value** (Pintrich, 1999)
Purpose

Explore student outcomes of teacher-directed and learner-centered methods in two university classrooms on

(1) Student performance
(2) Student motivation
Methods & Procedures

• Case study
• 12 students in human nutrition sciences
  – Lecture-based course (Knowledge, Concepts)
  – Problem-based course (Application, Practice)
• Grade reports
• Semi-structured interviews
  – 8 questions
  – Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991)
  – Reviewed by experts and field tested
Analysis

• Post-positivist stance
• Transcribed interviews of 8 questions
• Open coding
• Trustworthiness and believability
  – Reflexive journal
  – Peer debriefing
  – Direct quotes
  – Audit trail
Student Performance

Lecture-Based Course
Expected higher grades
Comfortable with structure and method
Actually received lower grades (A-)

Problem-Based Learning Course
Expected lower grades
Actually received higher grades (A)
Comfortable with structure and method
Student Goals

Lecture-Based Course
9 Performance
3 Mastery

PBL Course
7 Performance
5 Mastery
Performance Goals in LBC

• Getting good grades and getting through the course
  – “It just drove me nuts, like I couldn’t even, I just literally studied for that test just to pass it….” (Shannon)

• Expending effort
  – “Going into the final I knew that I was probably gonna get a B no matter what, so I didn’t put that effort in the final.” (Ruth)

• Competition and comparison with other students
  – “…there were grad students in there and you always, well not always, but more than likely you’re behind them.” (Natalie)
Mastery Goals in LBC

• Focused on learning
  – “I was trying to learn a lot….I knew it’d be important for me.” (Haley)

• Intrinsic value
  – “…it was more knowledge, it was more interesting. And [the lecture-base course] was more grade.” (Kelly)
Performance Goals in PBLC

- Concerned about the grade they would receive in such an atypical course

- Did not mention competition and comparison between students
  - “…obviously my goal again is to get an A, but I really didn’t have specific goals in there.” (Brianne)

- Structure of the course kept them from knowing and controlling their grade throughout the semester
  - “I felt like I had less control over what grade I’d get because of the whole group aspect…” (Alisa)
Mastery Goals in PBLC

• Focused upon intrinsic learning goals such as learning the content rather than getting a specific grade
  – “…it was more knowledge, it was more interesting. And [the lecture-base course] was more grade.” (Kelly)

• Wanted to learn the material because it was meaningful and relevant for them
  – “I think my goal was just to learn exactly what, how you’re gonna work, how your function as a dietician out in the real world.” (Lucy)
Self-Efficacy

Lecture-Based Course
6 Increased
6 Decreased

PBL Course
12 Increased
0 Decreased
Self-Efficacy in LBC

• Decreased when expectations were not met
  – “I would study for them, and I’d get them, and I still wouldn’t do well.” (Leigha)
  – “I thought I could do really well in the course because it seemed like the same format as 220, the year before….I didn’t do as well as I’d hoped.” (Kelly)

• Decreased when experienced personal problems with the instructional style
  – “I had trouble figuring out what would be the big picture, like what’s most important.” (Teresa)
Self-Efficacy in LBC

• Initially decreased when intimidated at the beginning of course because the material seemed difficult or unfamiliar; self-efficacy increased when experienced success
  – “Finally I saw that it was not so hard to learn… I saw that I can have good grades, I just made some good work, and studied, and learned.” (Celeste)

• Increased when experienced success
  – “I’m proud of myself. I worked very hard for that, and I think I did well.” (Marianna)
Self-Efficacy in PBLC

- At the beginning, did not feel very confident...unfamiliar with structure and format of course
  - “I was actually more nervous about [the problem-based learning course] than I was about [the lecture-based course] ‘cause there was like something brand new...[the problem-based learning course] was a new course and I didn’t know how well I was going to do.” (Rochelle)

- As the semester progressed, the students experienced success in the course, and their self-efficacy increased
  - “It showed me something that I can do. I can do well in something I didn’t ever do in France. I think it made me have confidence.” (Celeste)

- Some students expressed that they experienced group success, which caused their self-efficacy to rise
  - “I just feel like our group, I just feel like that was like the success, cause our group was so good.” (Shannon)
Task Value in LBC

• Content was important and valuable for their lives and careers
  – “I think it’ll give me a great, a good solid foundation…I think it’s important that you have that background.” (Lucy)

• Personally useful and applicable
  – “For my own information and health, I found it very enlightening.” (Ruth)
  – “I like knowing about diseases and being able to talk to people about it and share it with people.” (Robin)

• Useful, basic information
  – “It was definitely beneficial to my overall nutrition education and helped me kind of tease out what I might like about clinical nutrition and what I might like about nutritional aspects of disease.” (Susie)

• Few said content was not useful to future careers
Task Value in PBLC

• Task value did not vary between the two courses
• Content and format of the course was interesting and useful to them for their future careers
  – “I really enjoyed going to that class…it’s just kinda fun to sit there and hash out these different problems cause you’re looking at cases and trying to do problem solving with different people.” (Lucy)
• Content was interesting, useful and applicable for their futures
  – “…they’re actually teaching you case studies and stuff you will really use. I like that.” (Julie)
• Course was relevant and valuable to them
  – “I just feel like it’ll be definitely useful….it was definitely an excellent class.” (Shannon)
• Few said course would not be very useful to them in the future
  – “…I think it went kinda case-by-case. But a lot of the stuff I didn’t really find interesting because I don’t plan on working in a hospital or anything.” (Brianne)
Conclusions & Implications

- Students grade expectations and performances varied in two courses
  - *Familiarity with structure and format*
  - *Students earn higher grades in learner-centered course*
  - Are learner-centered courses “easier”?
  - Further studies in different disciplines and Fr/So courses
Conclusions & Implications

• More students had performance goals in the lecture-based course
  – *Teaching methods influence on student goals*
    • Do teacher-directed courses promote performance goals?
    • Do learner-centered courses promote mastery goals?
Conclusions & Implications

• Self-efficacy increased in problem-based learning course
  – *Role of mastery experience and accommodating learning differences*
    • Further research on increasing self-efficacy in lecture-based courses and relationships with types of goals
    • Investigate the role of students’ perceived control of learning on motivation and performance

• Task value outcomes were similar
  – *Students value learning similarly in two different contexts*
    • Further research on role of epistemological beliefs on task values
Thinking about the assumptions of your teaching methods and impact on students

Thank You