Moving Beyond Content:
Engaging, Motivating and Attending to
Student Attitudes in General Education
Courses

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Any opinions, findings, and conclusions are those of the author and do not necessarily reflect the views of NSF
Why should we care?

http://collegecompletion.chronicle.com/


• 38% of all community college students are first generation

75% of all 2YC students are working full or part time

64% of all 2YC students needed some form of a remedial course
Share out

• Take a moment to think/talk with your neighbor about:
  – Why we teach intro courses as faculty
  – Why administration supports general education programs
What should student expect from their college education?

<table>
<thead>
<tr>
<th>Wisconsin Students (March 2005)</th>
<th>Indiana, Oregon, &amp; Virginia Students (July/August 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top-tier outcomes:</strong></td>
<td><strong>Top-tier outcomes:</strong></td>
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<tr>
<td><strong>Mid-tier outcomes:</strong></td>
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<tr>
<td><strong>Bottom-tier outcomes:</strong></td>
<td><strong>Bottom-tier outcomes:</strong></td>
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<tr>
<td>14. Greater commitment to being involved in the community, and more engaged and informed about contemporary social and civic issues</td>
<td>12. Sense of values, principles, and ethics</td>
</tr>
<tr>
<td>15. Competency in computer skills and software</td>
<td>13. Tolerance and respect for people of other backgrounds, races, ethnicities, and lifestyles</td>
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<tr>
<td>16. Expanded knowledge of cultures and societies outside the United States</td>
<td>14. Competency in computer skills and software</td>
</tr>
<tr>
<td>17. Expanded knowledge of American culture and history</td>
<td>15. Expanded cultural and global awareness and sensitivity</td>
</tr>
<tr>
<td>18. Expanded understanding of science and its relevance to other areas of study</td>
<td>16. Appreciation of your role as a citizen and an orientation toward public service</td>
</tr>
</tbody>
</table>

Factors that influence learning

- Personal Characteristics of Student
- Course Context
- Student motivations
- Student self-regulation of learning
- Course Outcomes

adapted from Pintrich and Zusho, 2007
• Students who believe they are capable of doing the coursework and learning the content are much more likely to succeed.

• **Self-Efficacy** is the belief that one will be successful at a given task/course.

  • Predicts performance (up to ¼ of the final grade has been attributed to Self-Efficacy)\(^1\)
  • Predicts learning strategy usage (students are more likely to use more effective learning strategies that lead to deeper comprehension of content).

\(^1\)Pintrich & Zusho (2007)
• David & Jenefer received a similar disappointing grade on an assignment.
• David knows he didn’t do as well as he could because he did not set aside enough time and he vows to make better use of his time.
• Jenefer shrugs her shoulders and says, “ugh, this teacher hates me!”
• Both students have had set backs, what differentiates their response is their Control of Learning Beliefs.
• Control of Learning Beliefs are the beliefs a student possess about what factors contribute to success or failure (internal or external; controllable or uncontrollable)
• “Jackie” is interested in the content, wants to work hard in order to learn as much as she can.
• “Paul” does the minimum he can to get the grade he needs, learning may or may not happen and that’s ok with him.
• “Jackie” has more of an intrinsic motivation/mastery orientation
• “Paul” has more of an extrinsic motivation/performance orientation

• **Goal Orientation** predicts how students will approach learning based on their goals for a given topic/course
  • Intrinsic motivation/Mastery Orientation is generally linked to deeper learning and effective use of learning strategies (25% of variance in types) and performance (4% of variance).²

²Pintrich & Zusho (2007)
In an intro geology class, the instructor talks about coastal erosion

“Heather” has a family home on the coast, and so she is very engaged in the topic, asking questions and looking up additional information.

“Jonathan” has never left Cranston, he has never had a chance to even see the ocean

Context provides an additional value for Heather, because she can relate the content to something she cares about.

Students need to be able to make connections to their own goals and/or personal context, or they will fail to value the task/content.
Motivation “Pie”

Key *Affective* Determinants in whether a student chooses to engage and persevere

- **Goal Orientation**: Goals that drive how one responds to the task/content
- **Self-Efficacy**: Belief in the ability to be successful in a given task/course
- **Task Value**: Valuing of a task/course based on connections to one’s own goals
- **Control of Learning**: Attribution of one success (and failures) to controllable factors
Self-Regulated Learners

A way to support student’s affect

- Forethought, Planning, Goal Setting
- Reflection, Reaction
- Monitoring, Acting
- Regulation, Control

Zimmerman, 2001
Factors that influence learning

- **Personal Characteristics of Student** (age, gender, academic rank, experience)
- **Course Context** (tasks, grading policy, pedagogy, instructional resources)
- **Student motivations** (things that drive learning, e.g., task value, self-efficacy)
- **Student self-regulation of learning** (studying and/or learning behaviors, e.g., planning, monitoring, reflection)
- **Course Outcomes** (effort, interest, performance)

adapted from Pintrich and Zusho, 2007
GARNET (Geoscience Affective Research Network)³

**Goal:** project developed to examine the connection between motivation, use of self-regulatory strategies and geoscience learning outcomes in introductory geology classrooms.

CCLI Phase 1 Grant 2007-2010  

CCLI Phase 2 Grant 2010-2013

GARNET (Geoscience Affective Research Network) II: Self-Regulated Learning and the Affective Domain⁴

**Goal:** Expand study to other types of institutions and determine what may increase student self-regulation of learning through affective measures.

### Institutional Types

<table>
<thead>
<tr>
<th>PhD Granting Institutions</th>
<th>Public Universities</th>
<th>Private Colleges</th>
<th>Community Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3)</td>
<td>(2)</td>
<td>(3)</td>
<td>(7)</td>
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</table>

### Students Impacted 2008-2011

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<tr>
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<tbody>
<tr>
<td>(1369)</td>
<td>(437)</td>
<td>(326)</td>
<td>(209)</td>
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</table>

³[http://serc.carleton.edu/NAGTWorkshops/affective/workshop07/](http://serc.carleton.edu/NAGTWorkshops/affective/workshop07/)  
⁴[http://serc.carleton.edu/garnet](http://serc.carleton.edu/garnet)
Motivated Strategies for Learning Questionnaire\(^5\) (MSLQ) used to investigate how aspects of the affective domain varied for students.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories</th>
<th>Subscales (# of questions)</th>
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<tbody>
<tr>
<td>Motivation Scales</td>
<td>Value</td>
<td>Intrinsic goal orientation (4)</td>
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<td></td>
<td></td>
<td>Extrinsic goal orientation (4)</td>
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<td></td>
<td></td>
<td>Task value (6)</td>
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<td></td>
<td>Expectancy</td>
<td>Control of learning beliefs (4)</td>
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<td></td>
<td></td>
<td>Self-efficacy (8)</td>
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<tr>
<td></td>
<td>Emotion</td>
<td>Test anxiety (5)</td>
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<tr>
<td>Cognitive Scales</td>
<td>Cognitive strategies</td>
<td>Rehearsal (4)</td>
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<td></td>
<td></td>
<td>Elaboration (6)</td>
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<td></td>
<td></td>
<td>Organization (4)</td>
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<td></td>
<td>Metacognitive strategies</td>
<td>Metacognition (12)</td>
</tr>
<tr>
<td></td>
<td>Resource Management</td>
<td>Time/study management (8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Effort regulation (4)</td>
</tr>
</tbody>
</table>

Tested across multiple grade levels and content classrooms, consistently found to be valid and reliable

RTOP

- Measured using the Reformed Teaching Observation Protocol (RTOP)
- Quantifies classroom learning environment

0 Teacher Centered

- Instructor reminds students what they already know
- Student-student talk is < 10% of class time, if at all
- Instructor does not facilitate student-student talking
- Instructor may answer his/her own questions

100 Student Centered

- Students are asked to share what they already know about a topic
- Student-student talk occurs for >25% of class time
- Instructor moves about classroom during clicker questions
- Instructor waits for students to think about questions, does not take first response

Factors that influence learning

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   - (age, gender, academic rank, experience)

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3. **Student motivations**
   - (things that drive learning, e.g., task value, self-efficacy)

4. **Student self-regulation of learning**
   - (studying and/or learning behaviors, e.g., planning, monitoring, reflection)

5. **Course Outcomes**
   - (effort, interest, performance)

*adapted from Pintrich and Zusho, 2007*
Match the following activities with the corresponding estimate of how an average US college student spend their time during a typical week.

- Socializing/recreation: 9%
- Attending class/lab: 7%
- Sleeping: 51%
- Studying: 9%
- Working/volunteering: 24%

Improving Undergraduate Learning, SSRC-CLA Longitudinal Project, 2011.
Characteristics of Community College Students

Our students may lack some of the skills and require more attention to be successful

Our students are more diverse than 4 year colleges

Our students may lack the knowledge of how to navigate “the system”

Our students are many of the future K-12 teachers in our community

Factors that influence learning

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(age, gender, academic rank, experience)

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(studying and/or learning behaviors, e.g., planning, monitoring, reflection)

Course Outcomes
(effort, interest, performance)

adapted from Pintrich and Zusho, 2007
Course Context

The more student-centered the classroom, the greater the learning gains.

\( F(1, 12) = 6.726, p = .025 \)

\( R^2 = 0.38 \)
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  - (effort, interest, performance)

adapted from Pintrich and Zusho, 2007
Student Motivation Changes

When measuring change in motivation scores from the beginning of the semester to the end with students in:

- Large lectures (100+)
- Small lectures (<30)
- PhD granting institutions
- Liberal Arts Colleges
- Community Colleges
- Teacher Centered Classrooms
- Student Centered Classrooms

Decline
Student Motivations

RTOP buffers the decline in motivation
Optimal “Growing Conditions”: Support Self Regulation of Learning

- **Forethought, Planning, Goal Setting**: Engage students in thinking about what they already know, sets goals for a given task/topic, helps to minimize anxiety about the learning experience.
- **Reflection, Reaction**: When a student can reflect on what they learned, what they can improve upon for next time, it helps to restart the self-regulatory cycle.
- **Monitoring, Acting**: When students are engaged in a task, it requires that they monitor their learning process.
- **Regulation, Control**: When a student identifies a “problem” area/task (not comprehending, current strategy is not working), s/he will modify the behavior.

Zimmerman, 2001
Brief Conversation

• What are/were some (3) conditions/opportunities that you found as a student that made learning a success?
• Share with your neighbor
Factors that influence learning

Personal Characteristics of Student
(age, gender, academic rank, experience)

Course Context
(tasks, grading policy, pedagogy, instructional resources)

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Student self-regulation of learning
(studying and/or learning behaviors, e.g., planning, monitoring, reflection)

Course Outcomes
(effort, interest, performance)

adapted from Pintrich and Zusho, 2007
Acknowledgements

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• The 1000’s of participating students