

## **Studies of Student Engagement** <sup>[1]</sup>

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### **WHAT WE HAVE DONE SO FAR (SINCE AUGUST 2000)**

We started by listening to the stories of students and colleagues about what it means to be engaged, what engaged learners look like, and how students get engaged in a liberal arts mathematics class (Math 2000). We have about nine hours of audio taped interviews with students, in addition to responses to a variety of survey questions related to engagement, attitudes, and self-theories.

We collaborated on the teaching of Math 2000 with special attention to classroom activities and policies that might enhance student engagement. A manuscript based on this experience is currently under review for publication.

We designed and tested the Student Engagement Questionnaire (SEQ), which consists of 27 items. A manuscript describing the scale, along with validity and reliability statistics, is currently under review for publication.

As part of our testing of the SEQ, we collected data from 267 undergraduates in six different classes—upper and lower division classes in mathematics, political science, and psychology. Along with the data from Math 2000, we were able to demonstrate relationships between engagement and (a) grades, (b) self-theories, (c) learning goals, and (d) class level.

### **DEFINITION AND MEASUREMENT OF ENGAGEMENT**

#### **Student Engagement is a Multi-Faceted Phenomenon**

A factor analysis yielded SIX COMPONENTS OF ENGAGEMENT. Here we list each component and one or two representative items from the SEQ:

1. Skills Engagement. "Sitting toward the front of the class, where it's easier to pay attention." "Taking good notes in class."
2. Emotional Engagement. "Applying course material to my life." "Really desiring to learn the material."

3. Performance Engagement. "Getting a good grade." "Doing well on the tests."
4. Participation Engagement. "Asking questions when I don't understand the instructor."
5. Interaction Engagement. "Helping fellow students."
6. Fun Engagement. "Having fun in class."

Important Aspects of Engagement are Not Necessarily Observable, But They are Related to Other Aspects of the Learning Process

Notice that emotional engagement, interaction engagement, and fun engagement are not easily observable by faculty. However, they (and the other components of engagement) are related to the following:

Self-reports of engagement were related to emotional, interaction, and fun components of engagement. The self-reports were NOT related to the other, more observable, components of engagement. This is a prime reason why students and faculty may have different opinions about students' engagement!

Incremental and entity self-theories. Carol Dweck classified students according to whether they hold an entity or incremental theory of learning. Entity theorists believe they have a predetermined capacity for learning; the "container" may be large, but it is limited. Incremental theorists (who do better at various learning and life tasks) believe that the capacity for learning can be extended and that the container can be stretched in various directions. We found that incremental theorists were more likely to be engaged in terms of emotional and interaction engagement. The other components of engagement were not related to self-theories.

Learning and performance goals. Dweck proposed that some students set learning goals that are related to increasing their competence, and that other students set performance goals that are more concerned with gaining favorable judgments of their competence (but actually hinder learning). We found that engagement is related to goals: Students whose primary orientation was performance were more performance engaged, while students with a learning orientation were higher in emotional, participation, interaction, and fun engagement.

Students in upper-division courses were more interaction and fun engaged than students in lower-division courses. Clearly, engagement is different in different courses. We may also be seeing evidence of a developmental process whereby students master the more elemental aspects of engagement (e.g., participation, skills) in lower division courses, and develop other levels of engagement (e.g., their ability to relate to other students, relate to professors, and derive more fun from their courses) in more advanced courses.

Is engagement related to grades? Yes. In the Math 2000 class we found that skills and participation engagement were related to grades on homework assignments, performance and fun engagement were related to midterm grades, and participation engagement was related to final exam grades. (Also, see below.)

**Engagement is Not an Absolute Quantity**

How engaged students tell you they are may not be as important as how engaged they are relative to other classes. For example, students may report a high level of absolute engagement in your class, but not look very engaged. This may be because they are relatively less engaged in your class than in their other classes. Thus, if they have an extra hour, they will spend it on those other classes.

Students who were RELATIVELY more engaged in Math 2000 had higher grades. Interestingly, students' self-reported absolute engagement did not correlate with final grades, but those who were relatively more engaged had higher final exam grades ( $M = 86.0$ ) than did students who were relatively less engaged ( $M = 72.9$ ). There was also a significant difference on final course grades between those students who were relatively more ( $M = 93.0$ ) and relatively less ( $M = 87.4$ ) engaged.

### **The Future: Thoughts and Plans for Next Year**

Engagement is not a characteristic of an individual. It is a common mistake for us to over-attribute behavior to stable personality characteristics (in psychology, this is called the "fundamental attribution error"). Engagement may be more usefully thought of as a relationship among both internal and external factors, including:

- student, including internal attitudes, external behaviors, life situations, etc.
- faculty (who can also be characterized as having various levels of engagement)
- subject matter
- level of the class
- "context," or learning environment

Engagement implies relationships among all these things. It could be that non-optimal learning takes place when there's a discrepancy between what the students are engaged with and what the professors are engaged with. For example, some professors are very engaged with the course material, and they expect students to be as well. But some students are engaged with other students in the class or the class atmosphere, and are relatively less engaged with the material. Other professors are engaged on many levels in their teaching: with content, students, and methods.

We have begun to study FACULTY engagement. We have been collecting judgments, from faculty and students, about what characterizes a professor who is engaged in the class. We hope to develop a scale that reliably measures faculty course engagement.

### **Groups audience:**

President's Teaching Scholars Program

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**Source URL:** <https://www.cu.edu/ptsp/studies-student-engagement>

### **Links**

[1] <https://www.cu.edu/ptsp/studies-student-engagement>