Core/Pseudo-Core Experiences: Updates and Discussion

Inclusive Caltech Core Project
Mid-quarter Gathering
November 9, 2018

Caltech

Association of American Universities

CTLO

Plan for today

- Updates from the 2017 and 2018 entering 1st year classes / discussion
- Faculty ideas – new exam formats (physics), redesigning assignments (CS)
- TA ideas – Teaching Fellows in physics and CS
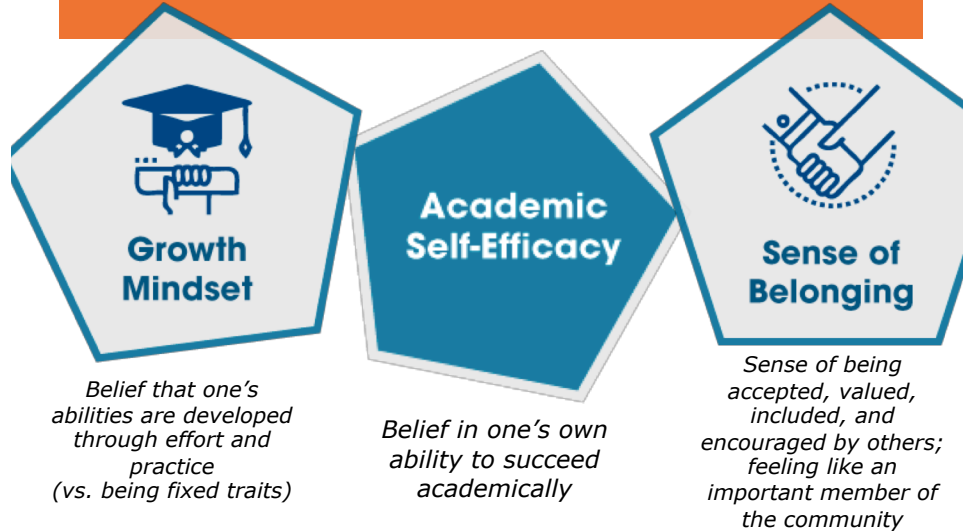- AAU Department Chairs Meeting Recap

Caltech

Student Updates So Far…

Term	Fall 2017 entering class	2018 entering class
Fall 2017	• **Mid-quarter feedback: Ma 1a, Ph 1a, Ch 1a** • **Overall questions** • **85% response rate**	
Winter 2018	• Mid-quarter feedback: Ma 1b, Ph 1b, Ch 1b • Overall questions • 68% response rate	
Spring 2018	• Mid-quarter feedback: Ma 1c, Ph 1c • Overall questions • 46% response rate	
Fall 2018	• **Mid-quarter feedback: Ma 2, Ph 2a** • **Overall questions** • **48% response rate**	• **Mid-quarter feedback: Ma 1a, Ph 1a, Ch 1a** • **Overall questions** • **90% response rate**

Topics we've discussed previously

- How do entering Caltech students experience changes in academic self-concept?
- Are those different for particular populations?
- What practices in classes are most helpful?
- What practices in advising are most helpful?

Malleable traits related to student success

Growth Mindset

Belief that one's abilities are developed through effort and practice (vs. being fixed traits)

Academic Self-Efficacy

Belief in one's own ability to succeed academically

Sense of Belonging

Sense of being accepted, valued, included, and encouraged by others; feeling like an important member of the community

https://www.nap.edu/resource/24697/interactive/

Following slides:
Early look at new data. More analysis coming!
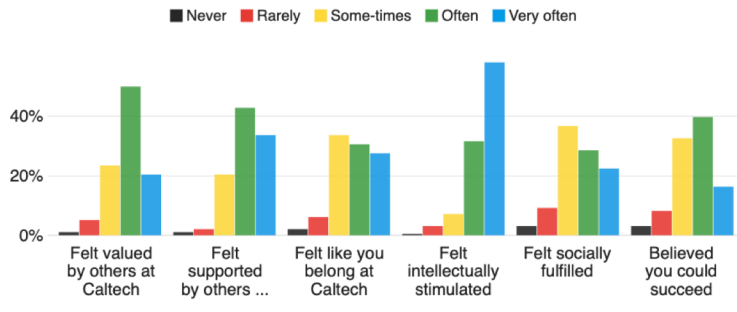
Population (e.g. gender) differences –
- No evidence that these are related to ability
- Some may exist prior to Caltech experience

→What are our hypotheses/possible interpretations?
→What else would we like to know or find out?

Fall 2018 – 1st year students

So far this quarter at Caltech, how often have you...

Legend: ■ Never ■ Rarely ■ Some-times ■ Often ■ Very often

Categories (x-axis): Felt valued by others at Caltech, Felt supported by others ..., Felt like you belong at Caltech, Felt intellectually stimulated, Felt socially fulfilled, Believed you could succeed
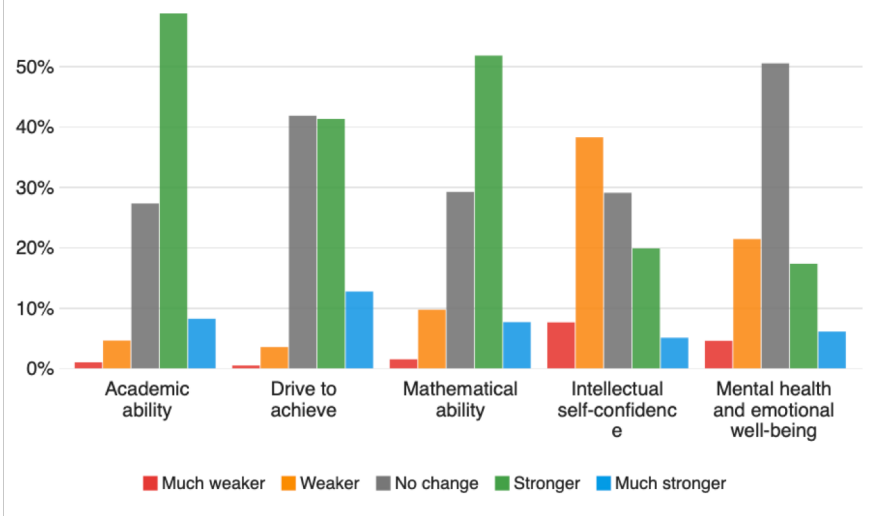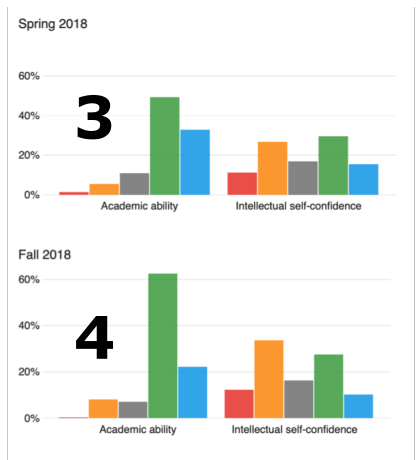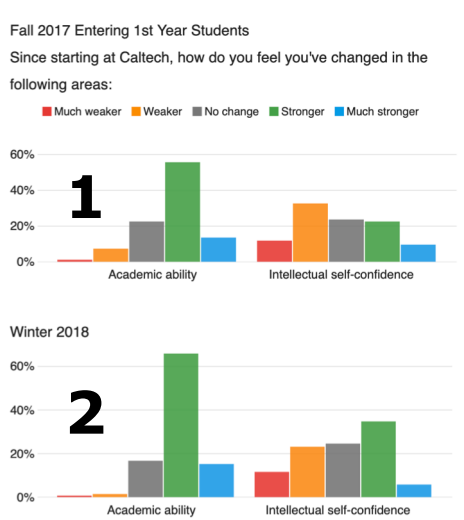
> It is amazing to be in an environment where we learn in such close proximity to the content of what we learn. It is inspiring to be in the midst of so many successful professors and fellow students. It encourages me to set higher goals for myself and explore more fields of science.

> I love it here. thanks a lot :)

Fall 2018 – 1st year students

Since starting at Caltech, how do you feel you've changed in the following areas:
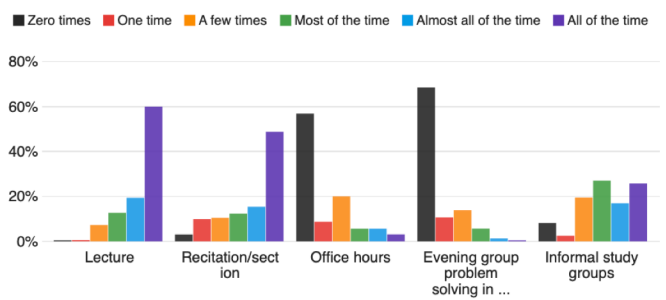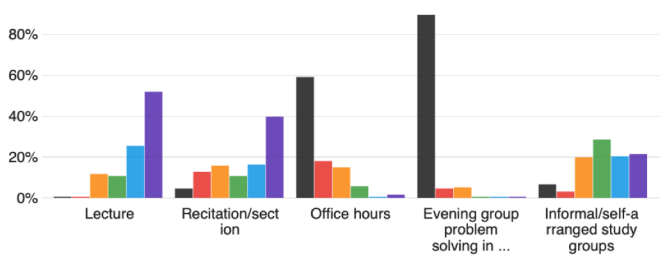
Categories (x-axis): Academic ability, Drive to achieve, Mathematical ability, Intellectual self-confidence, Mental health and emotional well-being

Legend: ■ Much weaker ■ Weaker ■ No change ■ Stronger ■ Much stronger

Fall 2017 Entering 1st Year Students

Since starting at Caltech, how do you feel you've changed in the following areas:

■ Much weaker ■ Weaker ■ No change ■ Stronger ■ Much stronger

1

Academic ability   Intellectual self-confidence

Winter 2018

2

Academic ability   Intellectual self-confidence

Spring 2018

3

Academic ability   Intellectual self-confidence

Fall 2018

4

Academic ability   Intellectual self-confidence

Use of academic resources:

Similar both years and across courses

Fall 2017 1st year students - Ma 1a

■ Zero times ■ One time ■ A few times ■ Most of the time ■ Almost all of the time ■ All of the time

Lecture   Recitation/section   Office hours   Evening group problem solving in ...   Informal study groups

Fall 2018 1st year students - Ma 1a

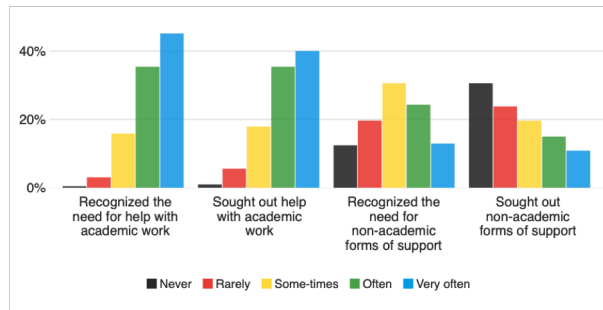Lecture   Recitation/section   Office hours   Evening group problem solving in ...   Informal/self-arranged study groups

Fall 2018 – 1st year students
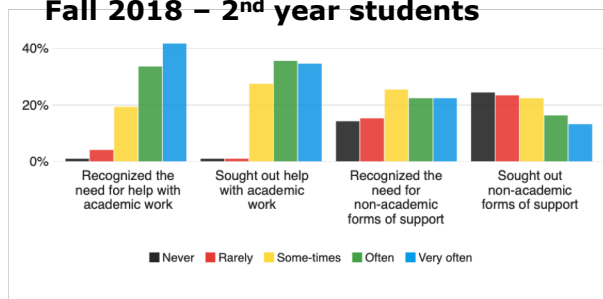

Perceived need for / seeking:

academic support

non-academic support

Fall 2018 – 2nd year students

There is very little instruction on how to find other people to collaborate with, which I would have (and still would) liked to learn instead of having to rely mostly on happenstance for collaboration.

Academically things are fine, but the issue is more to balancing other parts of life, and adjusting to a different culture. If anything, I've noticed that I have discovered that there are many hours in a day that can be used, and straight after this, I noticed that these hours aren't enough.

Discussion/questions?

→What are your hypotheses/possible interpretations?
→What else would you like to know or find out?

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AAU Department Chairs Meeting

Association of American Universities

Effective STEM Education:
The Role of the Academic Department and Department Chair

October 14-16, 2018

- Staffing models for introductory STEM courses
- Data to inform and assess curricular innovations
- Creating inclusive and welcoming learning environments
- Productive partnerships between academic departments and centers for teaching and learning
- Practices to value, evaluate, and reward teaching effectiveness