CNSM Faculty Learning Community (FLC)

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- In response to the **Highly Valued Degree Initiative (HVDI)**, a faculty development task force was developed that identified low completion rate courses in STEM disciplines as a primary area to be addressed. In addition to working at the student level, committee suggested improvements at the level of instruction .
- Rationales behind FLC:

∃ Faculty in STEM receive relatively little formal training in teaching, particularly in researching and evaluating teaching and learning.

∃ Faculty in STEM are rarely rewarded for conducting such research or implementing new student-centered pedagogical methods in their classrooms.
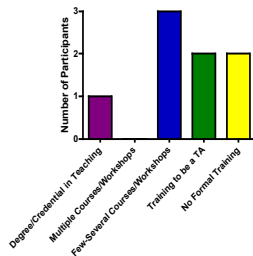


- The STEM FLC was originally designed by **Dr. Terre Allen** (FCPD) and **Dr. Kelly Young** (Biology) to encourage faculty to make sustainable changes in their teaching, and to foster a culture of teaching excellence throughout the college.
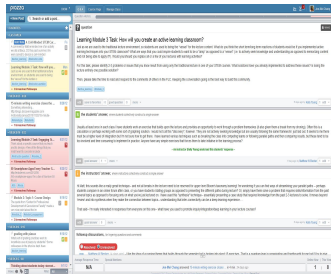
In Fall 2011, FLC was created to support CNSM faculty actively working to reduce failure rates in courses without reducing rigor .

- Semester I:

online resources

http://cnsmflcalpha.csulb.wikispaces.net/
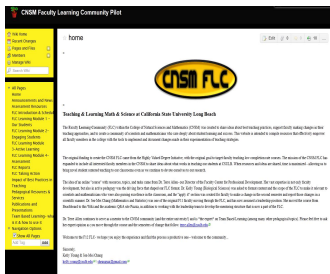
discussion

- Semester II: faculty implement change and collect data
- Semester III: mentoring of new FLC participants
- Semester IV/V (optional): lead FLC

- Current/Past/**Future** Participants

Math & Stat.	Biology	Physics	Chemistry	Geology	Sci. Ed.
Chang	Carter	Gredig	Berryhill	Becker	Zwiep
Li	Haas-Stapleton	Gu	Brazier	Landon	
Lee	Dillon	Bills	Derakhshan	Pernet	
Brevik	Eldon	Jaikumar	Slowinska		
Chesler	Deborah		Nakayama		
Zhou	Lee Fruman				
YOU					

- Limited funding is available for your commitment.
- Talk to Robert and/or Laura about suitability and timing.

Everyone
has something to contribute to our
community
of learning, teaching, & discovery

Does it Work?

Jen-Mei Chang + FLC + MATH {224, 247}
= ↑{ pass rates, exam scores, satisfaction}
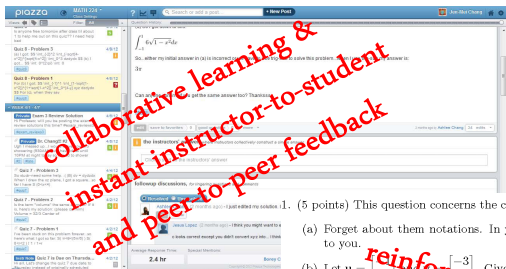
P. Rate Mean	T1	T2	T3	Final	M224 Overall
Fa11 (38)	38 / 64	67 / 70	69 / 75	58 / 70	63
Sp12 (39)	51 / 68	55 / 70	78 / 77	69 / 76	64

P. Rate Mean	T1	T2	Final	M247 Overall
Fa11 (38)	58 / 71	51 / 68	29 / 61	59
Sp12 (38)	66 / 75	69 / 76	50 / 68	71

collaborative learning &
instant instructor-to-student
and peer-to-peer feedback

reinforce conceptual understanding
& logical reasoning

1. (5 points) This question concerns the concept *linear combination*.

(a) Forget about them notations. In your own words, tell me what *linear combination* means to you.

(b) Let $\mathbf{u} = \begin{bmatrix} -1 \\ 2 \end{bmatrix}$ and $\mathbf{v} = \begin{bmatrix} -3 \\ 2 \end{bmatrix}$. Give three vectors that can be written as a linear combination of $\mathbf{u}$ and $\mathbf{v}$. How many more are there?

(c) If we collect all of the vectors that we can produce as the linear combinations of $\mathbf{u}$ and $\mathbf{v}$, what do we get geometrically?

(d) Is $\mathbf{b} = \begin{bmatrix} 4 \\ 3 \end{bmatrix}$ a linear combination of $\mathbf{u}$ and $\mathbf{v}$? Why or why not? Can you tell me without any calculation? Can you find a vector that is NOT a linear combination of $\mathbf{u}$ and $\mathbf{v}$? Why or why not?

(e) Give an example of $\mathbf{x}, \mathbf{y},$ and $\mathbf{z}$, all elements of $\mathbb{R}^3$, such that $\mathbf{z}$ is *not* a linear combination of $\mathbf{x}$ and $\mathbf{y}$. Justify your answers.

(f) Discuss what you learned from this exercise.

- NSCI 190A (Experience Student Success) will add a major section on note-taking.
- A college-wide website for best practices in teaching and learning is brewing.

CNSM Best Teaching Practices Abstract Submission Form

If you'd like to share more than one idea, please provide a new form for each.

Name:

Class Information:
In what course(s) do you use your assignment/technique? (provide course name and number)?

Is this/are these course(s) generally for majors or non majors?

How many students do you typically have in these/this course(s)?

Technique Category:
How would you categorize this technique? Is this technique an in-class activity/ in-class quiz or test technique/ out of class assignment or activity/ out of class interaction technique?

Brief Explanation of Teaching Technique:
Please include not only what you do, but how you do it - for example if you used groups—how did you form the groups, were they permanent, how many in the group? If you stop the lecture to ask students to discuss- how do you implement it, how do you know it is useful, and how do you encourage them to share their results?

Brief Reason Why You Use This Technique:
How have you observed that your technique helps students to engage with the material? Did test scores increase when you started using it? Did students suddenly "get" a concept that in previous semesters seemed to lose most of the class? Did you have comments on an evaluation or survey that suggest that students got something out of the technique?

Suggestions for Implementation- Including One Critical Piece!
This one is optional- but if you can think of a way that others could use your activity (everything appears discipline specific at first), please share that information. If you know that there is one key element to make this a success, include this as well.

Thank you so much for sharing and thanks for teaching for student success!

Study 36

3 hours/unit/week
www.cnsm.csulb.edu/study36

Figure: **Left:** Best teaching practices solicited from all faculty members to share ideas. **Right:** Collaboration with SAS Center and CNSM Advising Center resulted in Study36 after FLC discussion.

A **Brown Bag Lunch & Learn session** will take place

at noon on Friday, November 16 in HSCI-103 . Bring your own lunch.

Dessert and drinks , courtesy of the college, will be provided .

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	How to enhance student engagement in small classes	10.00	100.00	66.59	28.37	27
2	How to enhance student engagement in large classes	0.00	100.00	79.84	26.20	31
3	Using groups and team based learning in small classes	10.00	100.00	64.88	26.73	26
4	Using groups and team based learning in large classes	1.00	100.00	74.57	29.29	30
5	Writing exam questions that assess critical thinking while keeping the grading manageable	0.00	100.00	77.40	28.17	30
6	What is active learning and how to incorporate it	0.00	100.00	57.46	32.38	28
7	Innovative ways to teach beyond makers and whiteboards	0.00	100.00	64.39	31.04	28
8	What is a flipped classroom and its pros and cons?	0.00	100.00	67.07	30.49	29
9	Writing a midterm evaluation and make adjustments accordingly	0.00	100.00	51.59	33.39	27
10	Uses of real-time assessment of content and their effectiveness	0.00	100.00	55.31	31.61	29
11	How to incorporate out-of-class technology to stimulate curiosity and interest in subject matters	0.00	100.00	59.85	31.48	27
12	How to use in-class technology to enhance learning and time on task	0.00	100.00	67.15	30.62	27
13	Helping students get help: what resources does CSULB offer	10.00	100.00	62.64	25.85	25
14	Community service learning opportunities in CNSM	0.00	100.00	42.80	33.87	25
15	Incorporating your research into your teaching	0.00	100.00	50.61	36.04	23
16	How to write about assessment in your RTP file	0.00	96.00	34.59	35.20	22
17	How to conduct a classroom observation of peers	0.00	100.00	51.70	41.52	23

Figure: Based on the responses, the most popular theme is **how to enhance student engagement in large classes**, and hence the topic of discussion for the Lunch & Learn on November 16th.