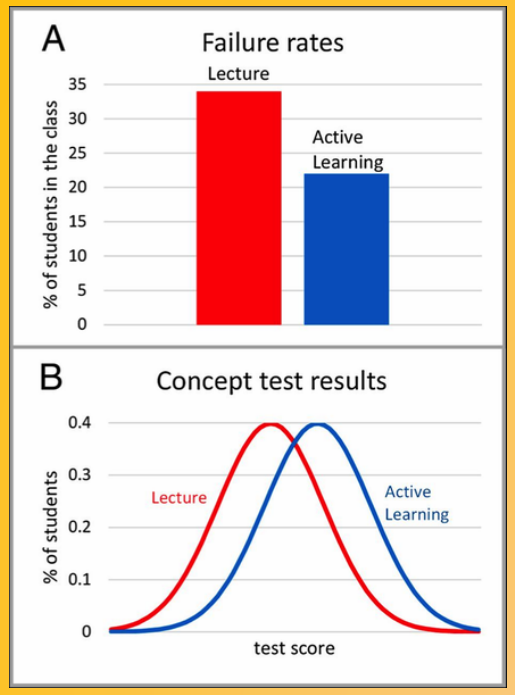
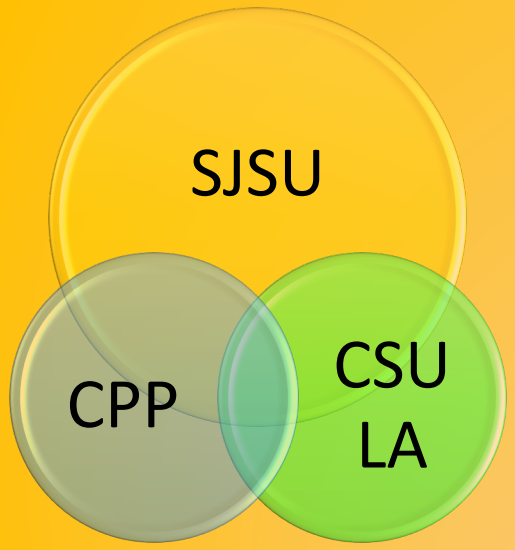

Facilitating a Culture of Transformative Pedagogical Change in STEM via Focused Faculty Development
Laura Sullivan-Green, Ravisha Mathur, Silvia Heubach, & Victoria Bhavsar

“Promoting Active Learning Strategies through the Flipped Class Model in STEM Courses”



- 7 gateway STEM courses
- Core faculty collaborate over 3 semesters:
  - Planning & development
  - Initial implementation
  - Reflection & modification
- Support via FLC
- Promotional activities and trainings
- Rich evaluation

Organizational structure & ideal faculty development structure



- Multi-level FLCs:
  - Core faculty FLC
  - Campus FLC
  - Cross-campus disciplinary FLC
- Workshops:
  - Two-day workshops for core: Jan. & June 2016
  - Campus workshops for STEM: June 2017 & 2018
  - Campus workshops for all faculty: June 2019
  - Calculus-specific training Fall 2017, Fall 2018

What about culture change?

Individual Core Class-Flipping & Calculus Flipping



Faculty Learning Communities



People flip their classes on schedule but do not work together much. Why?

Operational explanations:



- Significant project personnel “churn”

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- Campuses on different schedules and transitions to semesters, with multiple major initiatives

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- Significant project personnel “churn”
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- 3-yr flipping calendar for core courses

Year 1	Year 2	Year 3
Calculus I	Circuits	Physics II
Physics I	Computer Science I	Statics
		Discrete Math

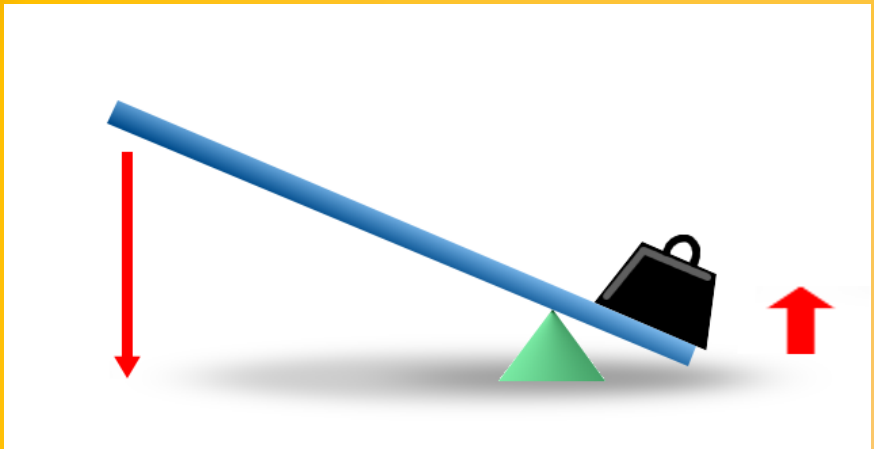
Operational explanations:

- Significant project personnel “churn”
- Campuses on different schedules and transitions to semesters, with multiple major initiatives
- 3-yr flipping calendar for core courses

- Rigid grant requirements



Theoretical explanations:

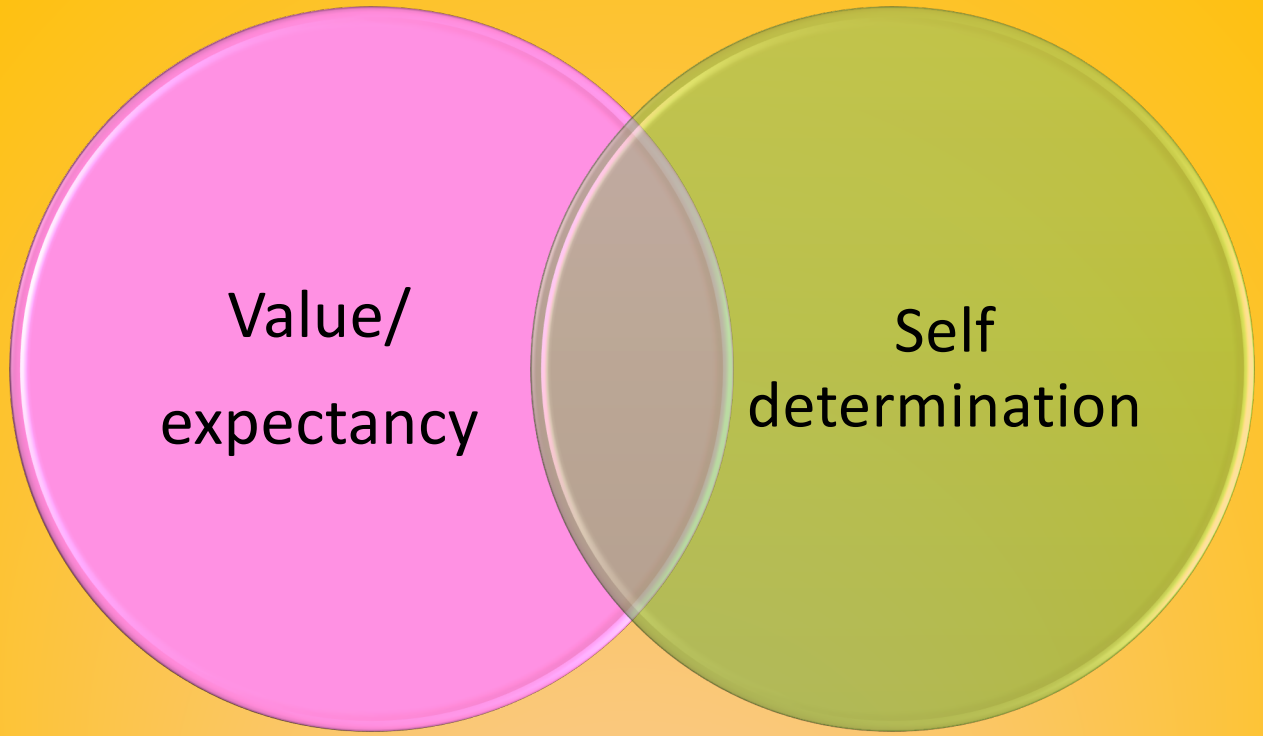


- FLC best practices
- Motivation to improve teaching

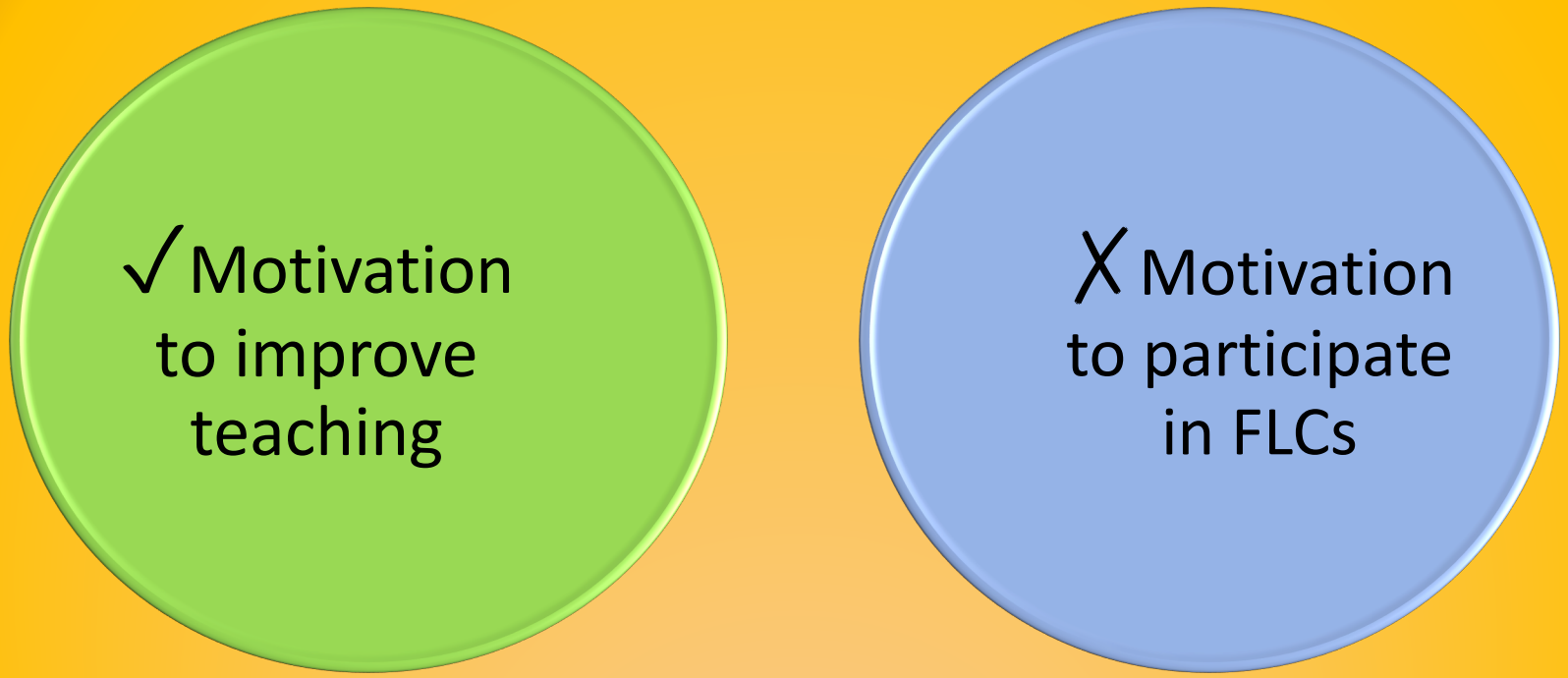
Recommendations for FLC design

✓✗	Workable size of 8 to 10
✓✗	Voluntary membership
✓✗	Multidisciplinary cohort, topic, goals, and membership
✗	Cohort reasonably similar in terms of skills*
✗	Meet every 3 weeks for 2 hours for one academic year*
✗	Determine meeting time at the point of member applications
✗	Provide social moments, community, and food at meetings
✗	Trained facilitator who is a key participating member
✗	Members determine objectives, topics, budget
✗	Focus on obtaining and maintaining FLC member commitment
✗	Include rewards, recognition, and a celebratory ending

Two theories of motivation:



Motivation in two domains:



One more motivation domain:
FLC coordinators Ravisha, Silvia, & Victoria







Conclusion

Will the flipping last? We don't know yet.

Depends on campus commitment and resources dedicated to activities and joint meetings

Should we conclude that FLCs are generally ineffective? No.

Campus FLCs have more autonomy and stronger accountability

Cross-campus FLCs need stronger support

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