

- Context
 - Honors Physics Course
 - Modeling Instruction Curriculum
- Teacher – “Lana”
 - 11 yrs teaching experience
 - FIU Modeling workshop 2008-2011
 - Science department chair
 - PhD in Biophysics
 - Enacted CMPLE in Spring 2012

Cogenerative Mediation Process for Learning Environments (**CMPLE**) is a three-step formative intervention designed to help teachers and students change their learning environment to make it more representative of their collective learning preferences^[1].

In the three steps, participants 1) reflect, 2) have a cogenerative dialogue, and 3) work towards their goals.

Teacher’s pedagogical changes:

- Equations on whiteboards
- Adding hints

Students participated in developing changes

Teacher and students valued change process

“What helps you to learn best?”

1. I like to work alone
2. I like to learn as my own
3. I like to ask questions over-time from after judgement
4. Small classroom
5. I like lectures rather than do participate.
6. Quiet

R
E
F
L
E
C
T

1) - I learn better when the teacher Shows and writes down the steps
2) - I like when the teacher Doesn't just give you the answer when you ask. Instead they lead to the answer
3) - I like being able to work with others
4) - I prefer larger class rooms and small amounts of people

Which aspects of the process did you enjoy (if any)? Why?
The ability to talk and write out my stability going over the equations slowly
How did being aware of your (and others) preferences help make group activities better (if at all)? (such as labs, whiteboarding, class discussions, etc.?)
We explained step by step to make it easier for the students & teacher to see our work. We were able to help other and ourselves in the process

ONGOING CHANGE

“CMPLE has forced me to sit there and look at my class and...reflect back on what we’re doing and what we should do differently. It’s made me think about the dynamic of the class and what I should and shouldn’t change.”

“So I’ll try to add those [hints] in. That’s what summers are for, right?”

“All they had to do was think about fields, and they got the right answer. As opposed to, “Oh I had to wait for the teacher to come tell me the answer.” If they can feel they figured it out on their own, it’s so good for their confidence.”

So, I guess, give me some thoughts on that. And what can we do in class to help you make that connection?

Rachel: maybe you like, make like what helps me is if you make little hint-offs, like about it,

Shawn: yeah, if like

Rachel: and then like, I go back to that little hint that you made before.

Teacher: I think I like this.

Rachel: yeah, and instead of like, an abrupt change it’s more like a gradual getting into the problem.

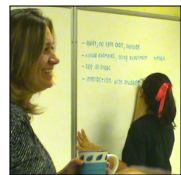


C
O
G
E
N
2

Chantelle: You know like, in math when you have like one lesson you have like, five examples.
Robert: Oh yeah.
Shawn: Yeah, but she does give us worksheets. Like, she gives us worksheets for the things that we’re on -
Chantelle: Yeah, but she doesn’t do the worksheet with you.
Shawn: Yeah, that’s true. But she does go around helping us.
Chantelle: Yeah, but if she did it in front of the class more, I would know it so much better...

C
O
G
E
N
1

A cogenerative dialogue is a class discussion in which “the goal is to reach agreement on changes to improve the learning environment”^[2].



Learning strategies

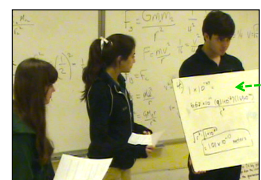
- Teacher led examples of problems before students attempt to work problems on their own.
- Show all steps when explaining solutions on white boards.
 - Write equation with variables before substituting in numbers.
 - Explain steps slowly.

Cogenerative Goals

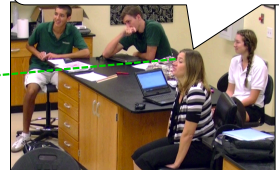


“I think as a student they’re much more likely to help their peers, than they are to comply with some rule that the teacher’s making them do.”

“Showing all steps...”



We all agreed that we would write the equation before we substituted in variables so that everybody could follow the steps that you used to solving the problem. (sing song-y...)



“[Now I can] say, “Hey we discussed this, and this was really helpful.” And it’s good that it came from them and not me. So that one was huge.”

WORKING TOWARDS GOALS / INSTRUCTIONAL CHANGE

[1] Samuels, N., Brewe, E. (2011). Classroom Reform with CMPL. In COERC conference proceedings (pp. 207-215). Miami: FIU.
[2] Tobin, K. (2008). Fostering science learning in diverse urban settings. 2008 PERC Proceedings (pp. 50-52). NY: AIP.