

# The Geometry of Learning Dynamics

Oregon State, UCLA, Texas A&M, Bora Architects

*Tales from the Learning Circle: First Lessons from Teaching-and-Learning-in-the-Round*



GOLD Study Circle - An inter-institutional collective studying the roles of classroom design and parameters on teaching and learning; first in OSU's LINC, then at other campuses with innovative classrooms.



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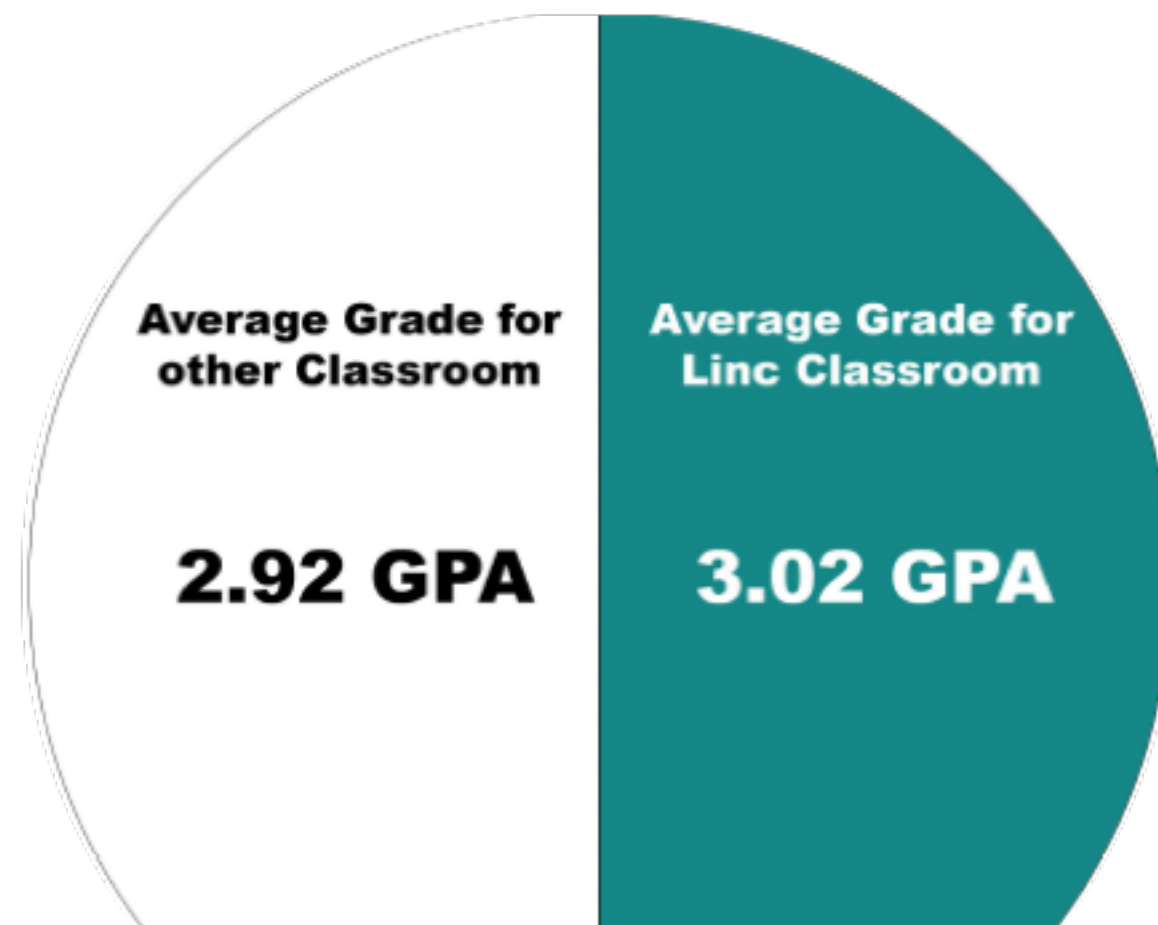
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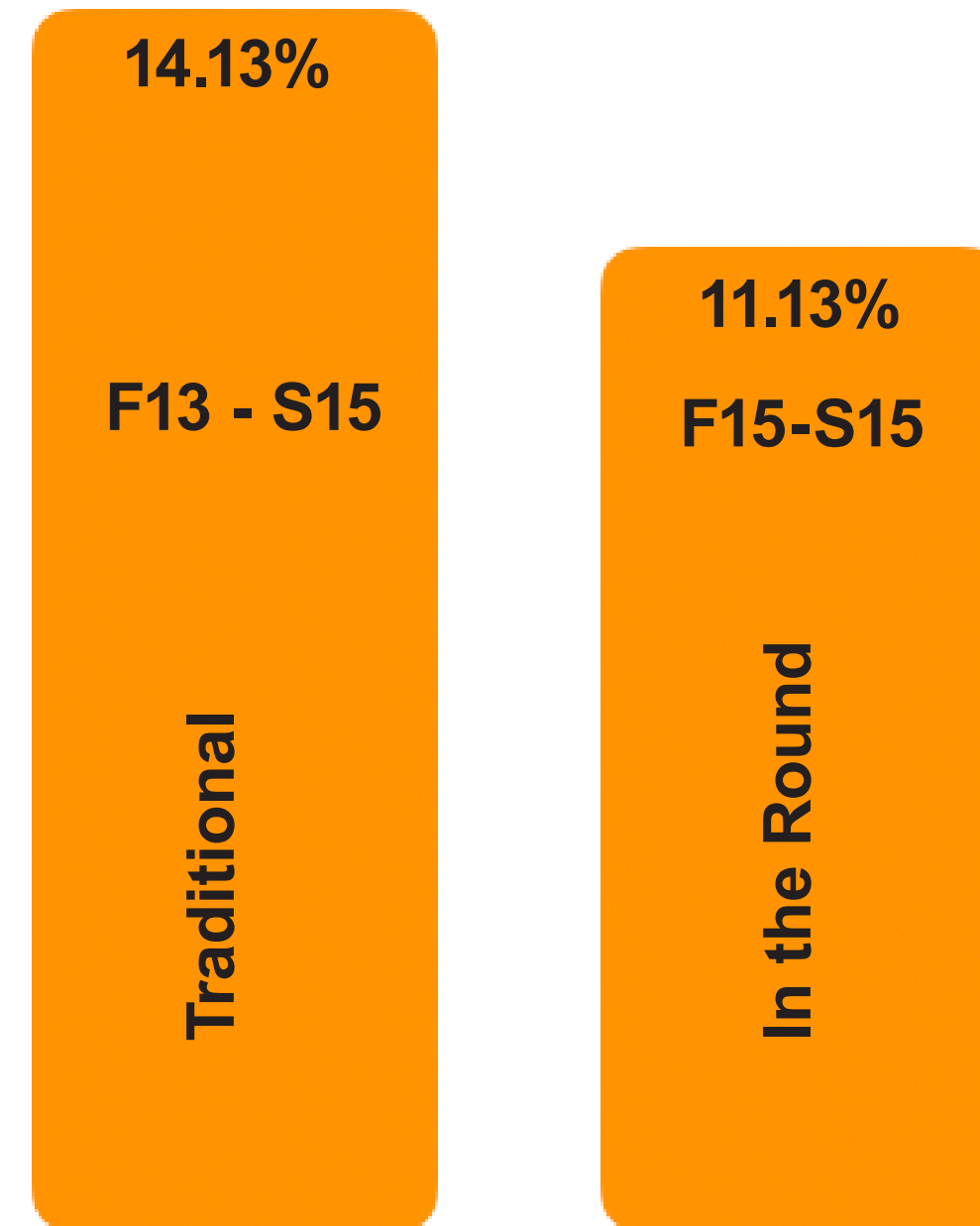
# AT THE CIRCUMFERENCE

Comparing institutional data from the first two years of LINC. Teaching-and-Learning-in-the-Round spaces vs. two prior years of the same courses taught in traditional spaces.

DFWU and Withdrawl rates changed significantly for the same courses from two years prior to LINC (F13 - S15) to the first two years in LINC (F15 - S17).



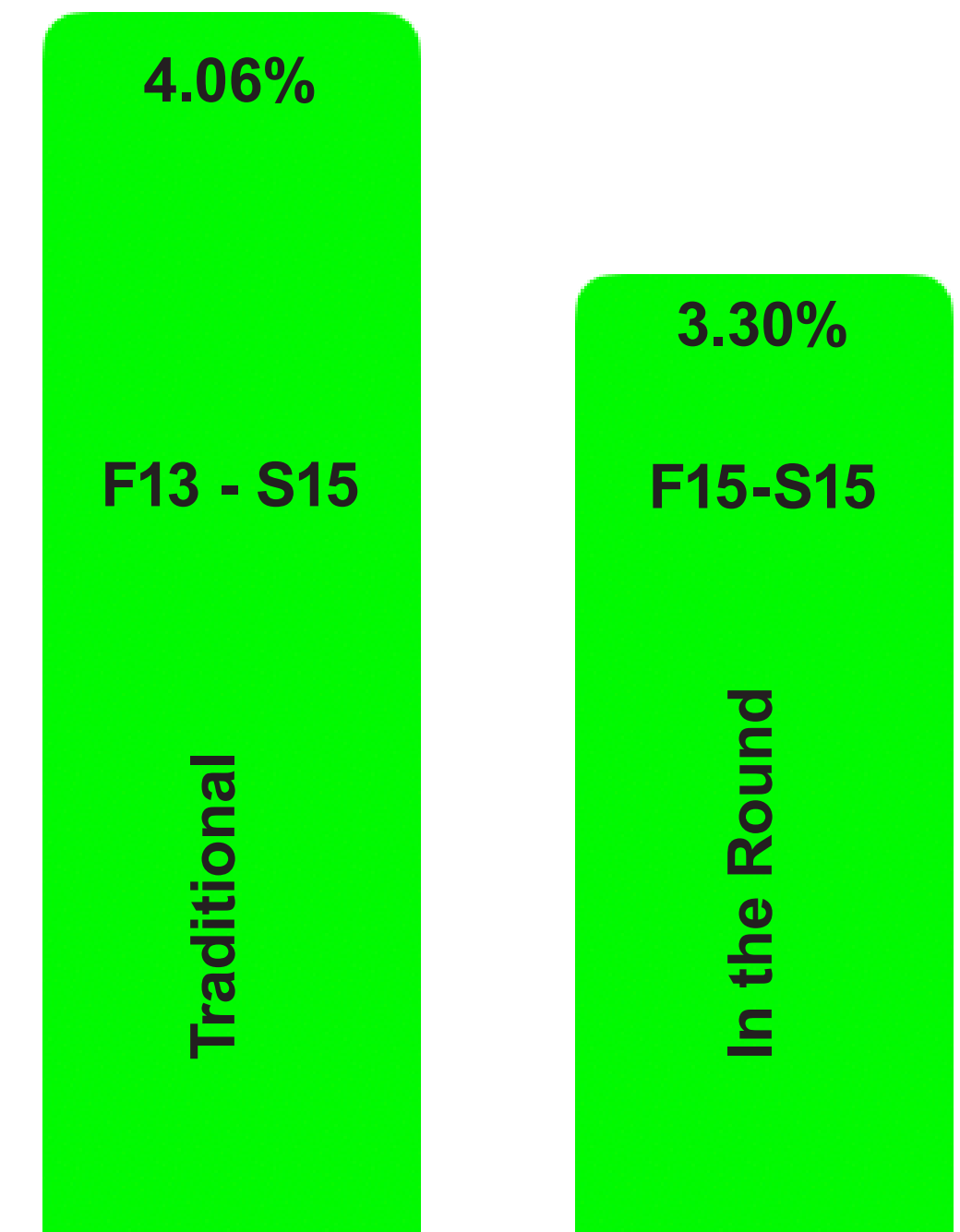
## DFWU Rates (%)



**DFWU Rate Down 21.2%**

(t-value=5.23; p-value <0.0000);  
95% Confidence Interval.

## Withdrawl Rates (%)



**Withdrawl Rate Down 18.7%**

(t-value=3.34; p-value <0.0004)  
95% Confidence Interval.

## Themes emerging from the interviews

Pedagogy

Engagement

Motion

Metaphor

Technique

## PEDAGOGY

**Definition:** Considerations made to teaching style that were impacted by design of space.

### Preliminary Findings:

- Change teaching strategy is not necessary for all faculty.
- Need for defined classroom norms/ground rules arose due to design of room for some faculty.

*So I said, "Okay, I'm going to go and do a PowerPoint type." I do, I use Keynote, but I'm going to **do a PowerPoint** type thing.*

*But in terms of the teaching component, it really **didn't differ** much for me.*

*So I don't set specifically **different ground rules** for that setting compared to any other.*

*What I would probably do on the second time around would be I would talk on day one about some of the **considerations of a round room** and maybe this is the ground rules that you're talking about. I'm not sure they'd be rules, but they would be, "Okay, here's what we've got to think about if we're going to make this happen."*

## ENGAGEMENT

**Definition:** The attention, motivation, interaction and communication expressed by learners in a large enrollment classroom session.

*Types of engagement studied*

- learner-to-content
- learner-to-learner
- learner-to-faculty

### Preliminary Findings:

- Faculty perceive their learners as
- more engaged in LINC100 than in other large classrooms.

*The features of the **room augmented our ability** to do these worksheets-- that made the class really, really **interactive***

*this was my **most interactive class** that I've had and ...interesting because it's also the largest class*

*A different feel and a different shape and a **different proximity** to students; it lends itself to **discussion***

*"you just kind of see a **trickling effect** when someone asks a question,... & someone else asks one, and it kind of builds on each other."*

## MOTION

**Definition:** Use of movement in the round classroom to accommodate the multi-directionality of the space.

### Preliminary Findings:

- Motion of instructor allows for increased engagement and individual attention.
- Anxiety surrounding obstacles in the room while in motion.

*"The way I actually talk is I **walk in a circle** and pretty much, and I've changed the direction a little bit and I go back into the middle to control things."*

*"Occasionally **walk out in the direction of somebody**, especially if they ask a question, where I could go out and like I'm sitting here with you, I'd be this close to you as I'm answering the question."*

*"I always tried to be out on the perimeter, so I'm walking in a circle, not a tight circle around the thing but really on the perimeter. And so at first I'm thinking, "Don't step off" and you're going to **step off and embarrass yourself.**"*

*"There are two sections that have no entrance upon the steps that have a bar, and I have **leaped that bar in a skirt**, I have gone under that bar in a skirt, and so there's no way to, you have to go all the way around and through this long road to get around and so that to me us a huge issue with the way they designed the space. Periodically, with the way the front chairs again are kind of loose makes it a little bit difficult to get around and to get in there."*

## METAPHOR

**Definition:** Expressing one kind of thing in terms of another kind of thing. Persistent metaphors imply ways of thinking about context, task, role, and action.

(Lakoff & Johnson, 1980)

### Preliminary Findings:

- Teaching is theater
- Teaching & Learning is Community

*...a big **story-telling** event.*

*...present the **story** and the content*

*I imagined it very similar to like watching a musical... where there is a round **stage***

*...like when you do **stage blocking**...*

*I'm in the front of the **house**, he is in the back of the **house**.*

*that's how we make the stronger **bonds***

*We want them to feel that they can do science on their own with their **family** and **friends***

*I like the **self-expression**, I like the experience of everybody **speaking and laughing together**. I especially think the round room is suited for that.*



## TECHNIQUE

**Definition:** Tools and techniques that facilitate Teaching-and-Learning-in-the-Round or require change in that classroom environment.

### Preliminary Findings:

- LINC100's presentation design supports complex visuals with more relationships among the information points. This change is a distinct pedagogical advantage. Some tools and techniques are not workable in the-the-round.
- Some traditional tools are no longer workable in-the-round; e.g. laser pointer.

you can actually **build a story on a single slide**, very different than going through a slide deck of multiple images and having like macros between, like this is ... Because we're really pushing for this idea of the experience in the room.

I think the biggest aspect has been the 3210 ratio in the screen. That's been a big thing, **we actually can build a more complete story visually on a single slide before you transition to the next slide.**

*[T]here's multiple screens, so like if you give directions **you can't** . . . **just point** to where they want to go because when you have multiple screens in a rotating room . . . it all goes to **different directions.***

# PRELIMINARY ASSESSMENT: TEACHING-AND-LEARNING-IN-THE-ROUND

## *Institutional Data*

DFWU Rate down 11.13%  
Withdrawal Rate Down 18.70%

## *Semi-Structure Faculty Interviews*

Theme	Opportunities	Challenges
Pedagogy	<i>Flexible to various teaching strategies and styles</i>	Need to learn and develop new norms and ground rules for class
Engagement	Learners are more alert and connected.	Stay in motion relative to learners
Motion	<i>Greater degree of motion allows for more attention to individual learners</i>	Physical features of the room create obstacles that limit degree of motion
Metaphor	<i>More powerful story-telling Community development</i>	Instructor situated above the learners adds distance
Technique	<i>Presentation media more effective</i>	Laser pointer ineffective

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