Periscope
Looking into learning
in best-practices physics classrooms
Periscope: Looking into learning

Lessons centered on video episodes from best-practices physics classrooms, to help instructors:

- enrich their experience with noticing and interpreting student behavior and
- practice applying lessons learned about teaching to actual teaching situations

**Primary aim:** To help instructors see authentic teaching events the way an expert educator does – to develop their “professional vision” (Goodwin, 1994).
Overview

- What is Periscope?
- Example 1: *What instructor behaviors facilitate student learning?*
- Example 2: *How can I assess students in a class emphasizing group work?*
Videos of exemplary instruction
A. A bed of nails is not especially comfortable. However, it's a lot more comfortable than draping your body over a single spike. Explain why this is, especially since the force involved (your weight) is the same in either case.

B. Lying on the floor is even more comfortable than lying on a bed of nails. Why? Draw a diagram to illustrate your answer.

C. Lying on a soft bed is the most comfortable of all. Why is it more comfortable than the floor? Again, draw a diagram to explain this phenomenon.

Episode: "Soft bed"

1. Benito: Why, because of the springs? I don’t know.
2. Alicia: Because there’s a nice cushiony softness. Or in the case of my bed, there’s memory foam. I guess there is-
3. Cass: Maybe it’s cause of the force.
4. Alicia: There’s force, cause the cushion of the bed is less force than the, or is it?
5. Cass: Cause, yeah, cause it sinks in so the force is less?
6. Alicia: Yeah, yeah…the exerting force.
7. Cass: I guess you, there’s more of the bed
8. Alicia: Well it has to do with density
9. Cass: Well, it’s greater area, cause more of the bed, more of the, your surface is on the bed, you know what I mean?
10. Alicia: Well not necessarily, I mean if you lay on the
11. Cass: Because if you are like on top of it, or if you’re like sunken into it
12. Alicia: Well I’m thinking like density, like the density of the bed is a lot less than the floor
13. Cass: But this doesn’t have anything with density
14. Benito: No, like even when you’re laying on the floor, not every single part of your body touching the
15. Cass: Right, but if you have a mattress that like
16. Alicia: So more of your body surface area is in contact with the bed than the floor?
Periscope has many uses

Use Periscope if you want to:

• Lead a weekly seminar on physics teaching and learning for TAs/LAs
• Share best practices in physics instruction with other faculty
• Prepare other faculty to train TAs/LAs
• Teach TAs/LAs what ideas students have about a particular physics topic
• …
Lesson topics

- What ideas do students have about (energy, forces, circuits, etc) and how do I address them?
- How can I best facilitate a student discussion?
- How do I bring out students’ physics ideas?
- When is it okay to leave students with the wrong answer?
- Does it matter if students are unhappy in my class?
- How can I assess students in a class emphasizing group work?
- What instructor behaviors facilitate student learning?
- How can I support underrepresented groups in succeeding in my class?
- How can I arrange my classroom physically to facilitate student learning?
- What kinds of tasks help students work together constructively?
- What is there to learn from students who don’t talk much?
Seeing like an expert educator

All university and college instructors need opportunities to observe, discuss, and reflect on teaching situations similar to the ones they themselves face in order to learn to see students’ ideas, questions, expectations, gestures, engagement, progress, and so on.

Particularly critical in an interactive classroom, in which instructors are expected to respond to students’ ideas and interactions as they unfold moment to moment.
Benefits of video

- Feeling like you are really there gives insight into what happened and why
- **Watching with others** reveals both unique and universal interpretations of the same events
- **Watching repeatedly** supports testing intuitions against evidence
- Discussion reveals the **principles and values** that motivate instructor and student behavior
- **Diverse, intimate examples** of what reform teaching really looks like
Periscope: Looking into Learning

What is Periscope?
A collection of lessons for faculty and LAs/TAs to:
- watch and discuss videos of best-practices physics classrooms
- apply lessons learned to actual teaching situations
- practice interpreting student behavior
- become more effective teachers

For details on how to implement Periscope lessons, see the Periscope Facilitator's Guide.

1 Watch classroom video
2 Discuss in small groups
3 Discuss with whole class

What do you want to do?

I want to lead a weekly seminar on physics teaching and learning for TAs/LAs

I want to lead a half-day workshop for physics TAs/LAs

I want to share best practices in physics instruction with other faculty
Questions?

Find the materials here:
https://www.physport.org/periscope/collection.cfm