

EE400D (Teaching Engineering): Classroom Observation

Faculty/Instructor: David Patrick Smith

Date/Time of Observation: 10/25/19

Observer: Victor Cannestro

Course Number (Course Title): PHYS 114 General Physics

Format Observed (Lecture, Lab, Quiz Section): Lecture

Number of Students Enrolled: 184

Number of Students Attending: 171 (45

left, 86 center, 34 right, +4 late)

Instructions

This observation worksheet contains both close-ended (Likert Scale) questions and open-ended (descriptive) questions regarding what the instructor is doing during the observed time period (session) and what the students are doing. Not all behaviors or activities are covered in the close-ended questions; those activities that are not included in the close-ended questions can be integrated into the open-ended questions. Please highlight your answers in a different, but legible color, minimize white space, and provide clean and consistent formatted in the completed observation.

<i>During the Observed Session:</i>	<i>Not at All</i>	<i>Somewhat</i>	<i>Satisfactory</i>	<i>Outstanding</i>
The instructor provides objectives for the class session (written, verbal, or both).	X			
The instructor relates the session content to learning outcomes for the course.	X			
The instructor uses visual aids that are clear, organized, and relevant.			X (The projections of the quiz papers were clear and integral to the class. Not much variation)	
The instructor uses practical, "real-world" examples to support teaching.		X (examples of a cat falling off a building and an E. coli bacterium swimming)		
The instructor refers to the relevant portions of the textbook, reading, or other supplement.	X			
The instructor uses humor effectively to promote student engagement and rapport.		X (The attempts didn't really work well)		
The instructor answers questions well and demonstrates knowledge of the subject.			X (He demonstrated	

			knowledge, but no students asked questions)	
The instructor shows clear interest or enthusiasm in teaching.		X (He showed interest but wasn't very animated in body language or vocal inflection)		
The instructor uses student names.	X			
The instructor asks specific questions.		X (He asked a very specific question as a question hint.)		
The instructor pauses after asking a question.		X (There was a long pause after the question)		
The instructor asks questions of students that result in responses from students.	X			
The instructor changes gears periodically from one style of teaching to another.	X			
The instructor engages students periodically through think/pair/share, problem solving, or other active learning exercises.			X (The class was mostly clicker questions)	
The instructor uses guided notes.	X			
The instructor involves students periodically in what is to be covered during the session.	X			

During the Observed Session:

*Not
at All*

Somewhat

Satisfactory

Outstanding

The instructor uses more than one way to explain problems or concepts.		X (He compared the cat falling off the building to him skydiving)		
The opening of the class session gets students' attention.		X (He talked about the midterm statistics, but students were		

		looking over their tests)		
The instructor provides a summary of what has been covered and accomplished at the end of the observed session.	X			
The instructor provides a preview of the next session or ideas of what to consider for the next class at the end of the observed session.		X (It ended with the final clicker question and the solution will be discussed more next session)		
The instructor could be easily heard.				X (mic)
The instructor moves around in the classroom and refrains from standing/sitting in one place.		X (Only once during the first clicker question)		
The instructor uses analogies or metaphors to relate the concepts to students' experience.		X (Once with the skydiving example)		
The instructor emphasizes key points throughout the observed session.		X (The slides with definitions and physical motivations were quickly cycled through)		
The instructor makes eye contact with students.			X (About half the time, between reading the clicker question statistics and writing hints)	
The instructor uses open (not closed) body language during the observed session.		X (Clasped hands observed often, but arms open at rest other times)		

The instructor engages in behaviors that develop rapport and trust with the students.		X (Attempts at humor)		
The instructor relates the material/concepts to personal or societal concerns.		X		
The instructor is available before class.				X (There for a full 10 minutes before class)
The instructor is available after class.				X (There for a full 10 minutes after class)

What types of visual aids (dry-erase board, chalkboard, powerpoint, etc) does the instructor use during the observed session? How are these visual aids used?

The instructor used PowerPoint slides for textbook concepts and pictures, then switched to a projector which displayed quiz hints he would write out by hand.

In your opinion, what was the best/most effective teaching moment observed in this session?

When he wrote down a specific question: "Assuming ____, what is required for speed to increase from ____ to ____", the percentage of correct answer increased dramatically afterwards.

In your opinion, what was the most unique teaching moment observed in this session?

He discussed that cats that fall off higher buildings have a lower rate of broken limbs because they reach terminal velocity and begin to relax. He then compared that to skydiving and many students laughed.

In an organized paragraph with complete sentences, describe what the instructor did throughout the session (150-250 words).

The instructor placed all the students' exams on tables in the front and told them to pick it up. He then talked about the statistics of the exam (the average was a 65 as it was said without emotional inflection), the regrade process, and how the solutions will be distributed. He asked, "Other exam questions?" then moved into the first topic of the lecture. He immediately moved into the solution of last class's clicker question #5 and discussed it. "Any questions?" He then began clicker question #1 (asking if a cat fell off a building would it reach terminal velocity) admitted its challenging, urged students to work with their neighbors, and looked at the incoming answers. During this time, he started writing out hints leading toward the solution, slowly, line by line. He then announced, "One more minute on this first try." After a countdown, he discussed the hints and wrote down a specific question: "Assuming ____, what is required for speed to increase from ____ to ____". The instructor walked up the right aisle asking some students in the back a question. He began another countdown. He admitted the question was hard again but defended its educational value, then continued writing out the solution. "Does anybody have any questions there?" He attempted a joke, saying this would be the scariest fall the cat would have unless it was strapped to a rocket booster. He then said, "Work on it from 40 more

seconds” and counted down. He discussed that cats that fall off higher buildings have a lower rate of broken limbs because they reach terminal velocity and begin to relax. He compared that to skydiving. Then he discussed drag at a low Reynold number via applications: bacterium moving, trains and cars. He began clicker question #2 (about an E. coli bacterium swimming) saying that the details are in the reading and quickly talked at a high level about the steps they’d need to take to reach the solution. He spoke about some important assumptions they’d need to make, then began a countdown. He discussed the solution then asked the students “What is 10^{-10} called? (looking for angstroms)? Do you remember it from Chemistry?” He skipped to clicker question #4 and students worked silently. He waited a minute, counted down, then discussed the solution strategy out loud. He asked, “Any questions?” at the end and made closing comments.

Overall, the regiment of consistent clicker questions worked to engage students to an extent, but there wasn’t much enthusiasm in the classroom. The one specific question was very successful, but questions of that type didn’t recur.

<i>During the Observed Session:</i>	<i>None</i>	<i>Few</i>	<i>Some</i>	<i>Many</i>	<i>Most</i>
Students maintain attention toward the instructor (for example – eye contact).				X (About half, though most looked at their computers or each other)	
Students remain awake and alert during the observed session.				X (Students were definitely awake but many did not look alert)	
Students are using their cell phones or other electronic devices in activities unrelated to class.		X (While everyone had a device, I could only see a few being overtly distracted)			
Students are over one minute late to class.		X			
Students pack up early at the end of class.					X (Almost everyone started to pack up at

					1:17 while he was talking)
Students are reading the newspaper or doing other non-electronic activities unrelated to class.		X			
Students interact with the instructor before class.	X				
Students interact with the instructor after class.		X (two students did)			
Students initiate questions.	X				
Students respond to questions posed by the instructor.	X				
Students ask follow up questions.	X				
Students participate in class when asked to do so by the instructor.					X (In the form of the clicker questions)
Students are taking notes.	X				

In your opinion, how would you best describe students' interest in the observed session?

Most students were engaged, but not alert. Many were speaking with their neighbors to solve the clicker questions; all of them had a laptop or phone to enter their answers.

In your opinion, how would you best describe students' affect (emotion) in the observed session?

Confused and flat affect was common during the session; some were even frustrated. Many had closed body language and were hunched over or leaning to the side with their palm on their head to hold them up.

In an organized paragraph with complete sentences, describe what the students were doing during the observed session (150-250 words).

Before class started, students picked up their midterm exams in a clamor. After class began, students continued to filter in, and a few in the back were having side conversations, though most were silent. During the overview of last lectures final clicker question there was silence from the students. Then, during clicker question #1 on students interacted with "learning|catalytics" online to submit their answers. Every student was quiet, most working on the question. About half looked up to follow along with his hint. Upon a countdown, student discussion increased from few to many. His handwriting was hard to read, and a student asked what he'd written. One student whispered to another "Were you following that?" expressing confusion and frustration. Overall, student discussion increased to a moderate clamor. No one laughed at his cat joke. A student in front asked another "What did he just

explain?" About 14 students were on their phones or playing on their computers. During the solution discussion, students laughed at his skydiving comparison. Students were mostly quiet, during clicker question #2; a few having side conversations in the back. About half looked up as he wrote out hints. Students nervously laughed and did not answer his question about angstroms. Some were having side conversations as he moved into lecture slides on ropes and tension. By then end of clicker question #4, many students were having conversations and laughing. Almost all students packed up early as he made closing comments. Two asked him a question after class.

Overall, students were engaged due to the graded clicker questions, but did not seem alert or invested. Confusion and flat affect were prevalent. Moreover, the lack of student questions was very noticeable.

Are there any items that you believe should be added to this classroom observations worksheet? If so, please describe.