



The Daily Question: Building Student Trust and Interest in Your Course



CDR Matthew Hawks, Permanent Military (Assistant) Professor of Mathematics
All images courtesy of the US Naval Academy Public Affairs Office



About the Speaker

- PMP, Mathematics (PhD Operations Research)
- Joined USNA Faculty for Fall '15 (AYE16)
- Previous Assignments:
 - Submarine
 - Recruiting Headquarters Staff
 - Engineering Duty (Shipyard, Program Office)
 - Humanitarian Construction
- No prior teaching experience



About the Talk

- Originally presented in June 2017 at the Association of Christians in the Mathematical Sciences conference at Charleston Southern University
- Peer-reviewed paper appears in the conference proceedings
 - A list of questions is in the appendix
- www.acmsonline.org



Outline

- Discussion Throughout!
- The Daily Question
- Motivation
- Setting
- Question Types
- Results
- Future





Example Question

- What is one thing that makes you happy today?





Motivation

- Trouble connecting with students
- Assigned to teach non-majors
- Desire to accommodate all learning styles
- Faculty Commons email
 - How to encourage risky writing through questions
 - www.facultycommons.org
- A Grander Story Hove & Holleman





Setting: USNA Academics

- Small sections (typically 17-21 students)
- Mandatory attendance
- Time pressure
- Peer competition
- Math requirements:
 - Core: Four courses.
 - Three Calculus, one other
 - STEM majors mostly take Differential Equations
 - Most humanities majors take Introductory Statistics or Probability with Naval Applications (SM219/SM230)





Daily Question Ground Rules

- Passing is always an option
- Answers stay in the classroom
- I answer questions too
- Course policies apply: (source: Dean Nardi)
 - The classroom is a place of mutual respect.
 - We won't belittle people for expressing opinions.
 - Debates and critical analysis are good; personal attacks are not.
 - We won't tolerate crude, sexually explicit or offensive jokes or remarks.
 - We won't use profanity.



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Question Types I:

Mating Questions and Topics

Topic	Question
Set Operations (Unions and Intersections)	Get in groups of three. What is the most bizarre thing you have in common?
Fundamental Counting Principle	What is your favorite home-cooked meal?
Measures of Relative Position	What were you known for in high school?
Independent Bernoulli Trials	What was your first job?
Hypothesis Testing	Describe a run-in with law enforcement or the USNA conduct system.
Central Limit Theorem	How tall are you?
Summarizing Data	How much sleep did you get last night? How many times did you take ACT/SAT?



Question Types II:

Questions to Establish Trust

- Do you have an irrational fear or strange addiction?
- Tell us something quirky about you.
- What is the funniest thing you did as a child that people still talk about?
- What is the story behind your name?
- What is your favorite way to procrastinate?
- What is your pet peeve?



Question Types III: Questions Revealing Identity

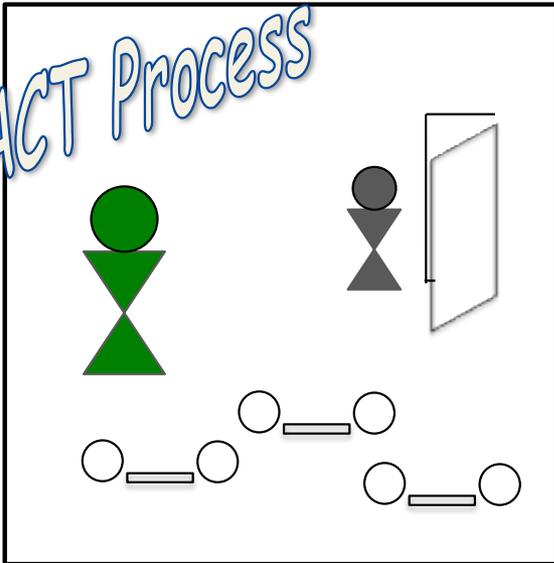
- What accomplishment are you most proud of?
- For what reason do others seek your help or advice?
- What is the kindest act you ever witnessed?
- Have you ever experienced something unexplained or supernatural?
- What is one thing that is important for other people to know about you?
- What is something you believe that most people might not believe?



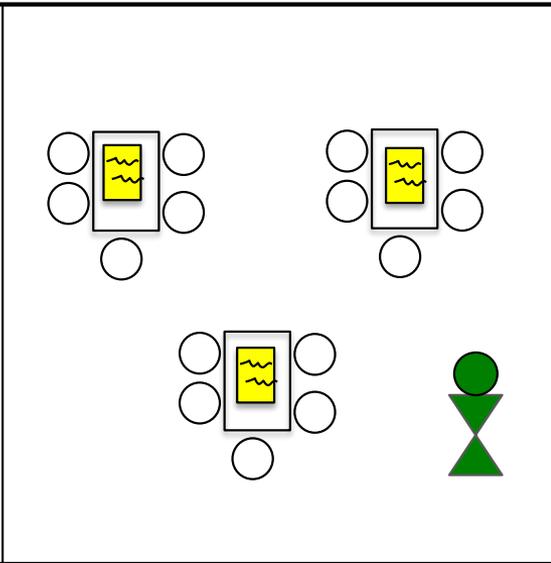
Preliminary Results

- Midterm assessments
 - FACT for one section
 - Anonymous midterm surveys for other sections
- End-of-semester student opinion forms

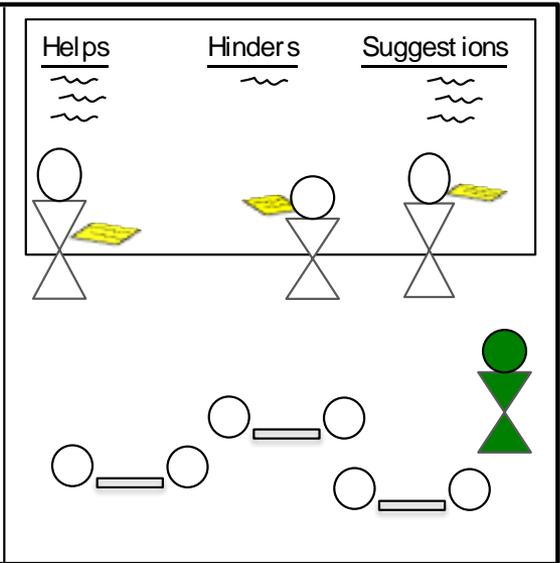
FACT PROCESS



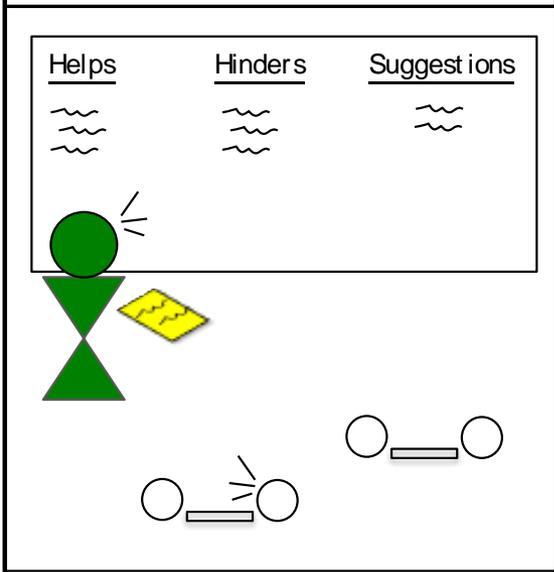
Prof leaves room 20 mins before the end of class.



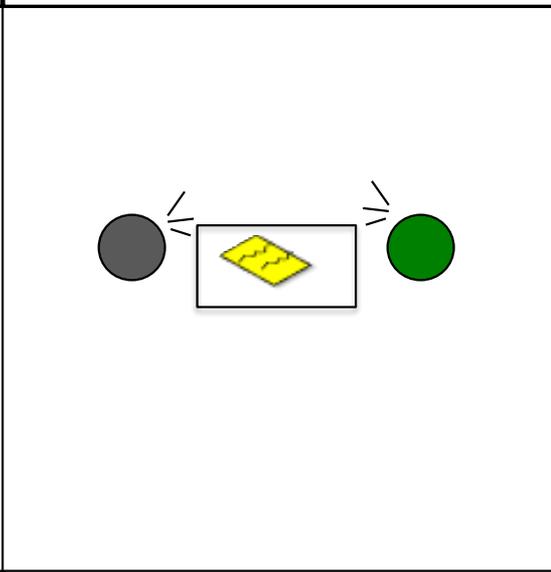
Students discuss in groups and record "Helps, Hinders, Suggestions"



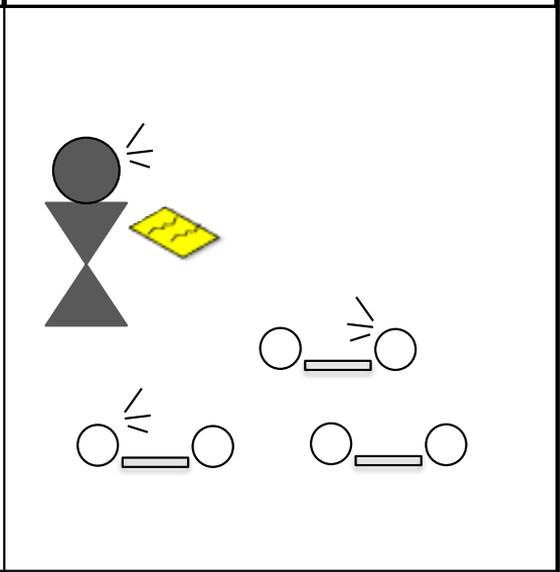
Students write on board their groups' "Helps, Hinders, Suggestions"



FACT Consultant asks for clarification



FACT Consultant gives the **only** list of "Helps, Hinders, Suggestions" to Prof



Prof discusses feedback with students



Benefits – Student Perspective

- Across 10 sections, 74 of 207 students (36%) directly mentioned the daily question in their end-of-semester Student Opinion Forms, all positively.
- *Warning* cherry-picked SOF quotes from each section follow.
- “Made the classroom a very comfortable environment. I like coming to this class. I learned a lot from the life questions he’d ask us.”
- “He fosters an atmosphere of community by asking daily questions. I was skeptical at first, but it doesn’t eat up our class time – we still learn all the knowledge we need to know + we now know more about each other than we would ever have known otherwise – people have come up to me outside of class to discuss my remarks in class with me.”
- “The use of personal questions of the day gave the classroom a relaxed atmosphere. Which is good in a math class – because math is stressful.”
- “[The] question of the day is great and gets the class to know each other and be involved.”
- “Best teacher I have had when it comes to atmosphere, relationship, and interest. I think the question of the day should be used in every classroom on the yard. It takes two minutes, and changes the dynamic of the entire classroom. I think every professor should adopt this.”
- “CDR Hawks was very close with the class and formed a close and professional relationship.”
- “He had a great relationship with us. he is approachable and created a great atmosphere in the class. His daily questions were very insightful and gave proof that he cared and was interested in all of us not just as students but as future naval officers.”
- “He has us answer daily questions that give us little insights about him and each other and he balances sharing enough, but not too much, information extremely well.”
- “Question of the day was awesome. I enjoyed it and it helped make a 75-minute period more bearable. Very personable and humorous.”
- “I love that he does ice breaker question in the beginning of class, i feel that it makes the class more connected as we get to know each other better. It creates an even more open environment that sparks class discussions and enthusiasm to do the work.”



Why Might the Daily Question Work?

- Provides opportunity for self-expression
- Communicates value for the individual
- Allows personal, professional sharing from the instructor

- It is a secret weapon:
 - It opens the aperture to learning



Some Caveats

- Champion civility
- Enforce class policies
- Be focused
- Maintain awareness of time
- Be honest

- Be ready for your classroom to become a community



Next steps

- Continue to incorporate in future courses
- Find more ways to integrate the daily question with course material
- Spread this practice!
 - USCOTS May 2019



QUESTIONS