



Augmenting Humans: Learning

1

Who are we?



Our Team



2

Our domain



recall

applicability

3

Interviews



Do you think what you do now **directly relates to** your academic workload that you've experienced in the past?

Do you have any hobbies or skills that you are proud of? How did you pick up these **skills?**

Are there any particularly **memorable courses** that you've taken? What sticks out to you about them?

Are there hobbies that you've **failed to pick up?** Why did these not stick?





Kian

from France

CS230 Instructor

Aarti- co-head TA

before office hours



Visualization and anticipation

“What we’re teaching you’re probably going to think that you’ll never use it again, but it builds your mind, it helps you understand things quicker.”

*Either know info, or know where to
point to find it*



Terry

Protestant campus minister

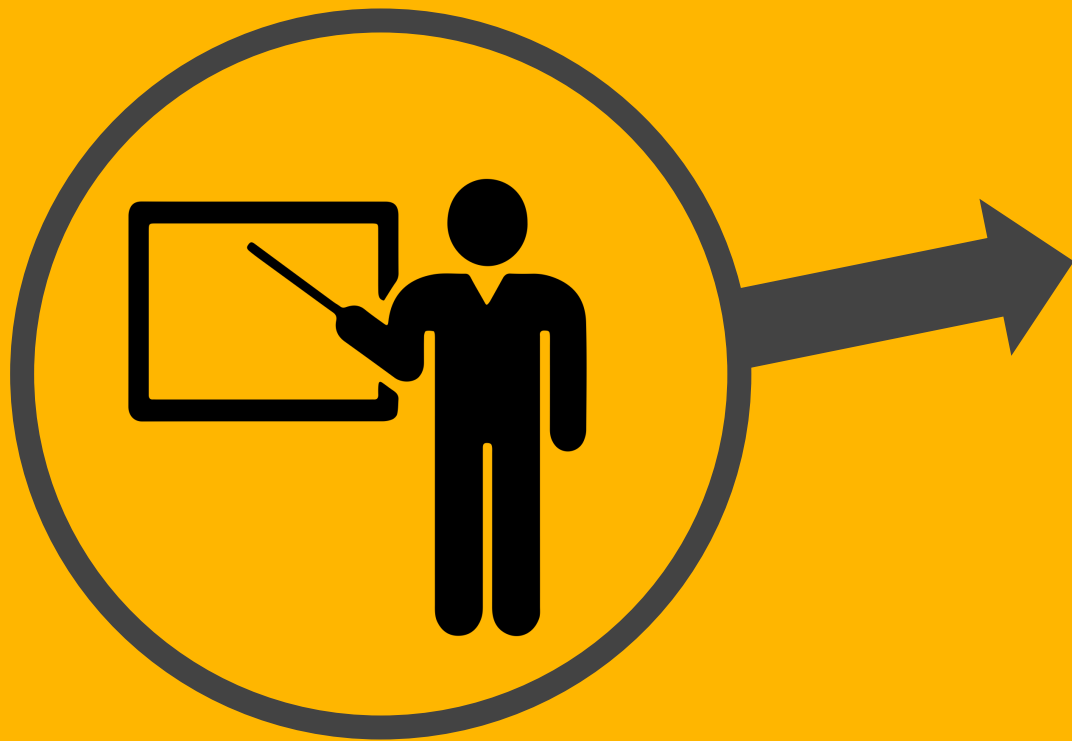
Philosophy professor

Recruited outside Tressider



The key to teaching is empathy.

*It's hard to approach a topic in
a way that works best for all
individuals.*





Scott

former Stanford physics PhD
candidate

Aarti's friend

Scott's living room

Enjoys blacksmithing

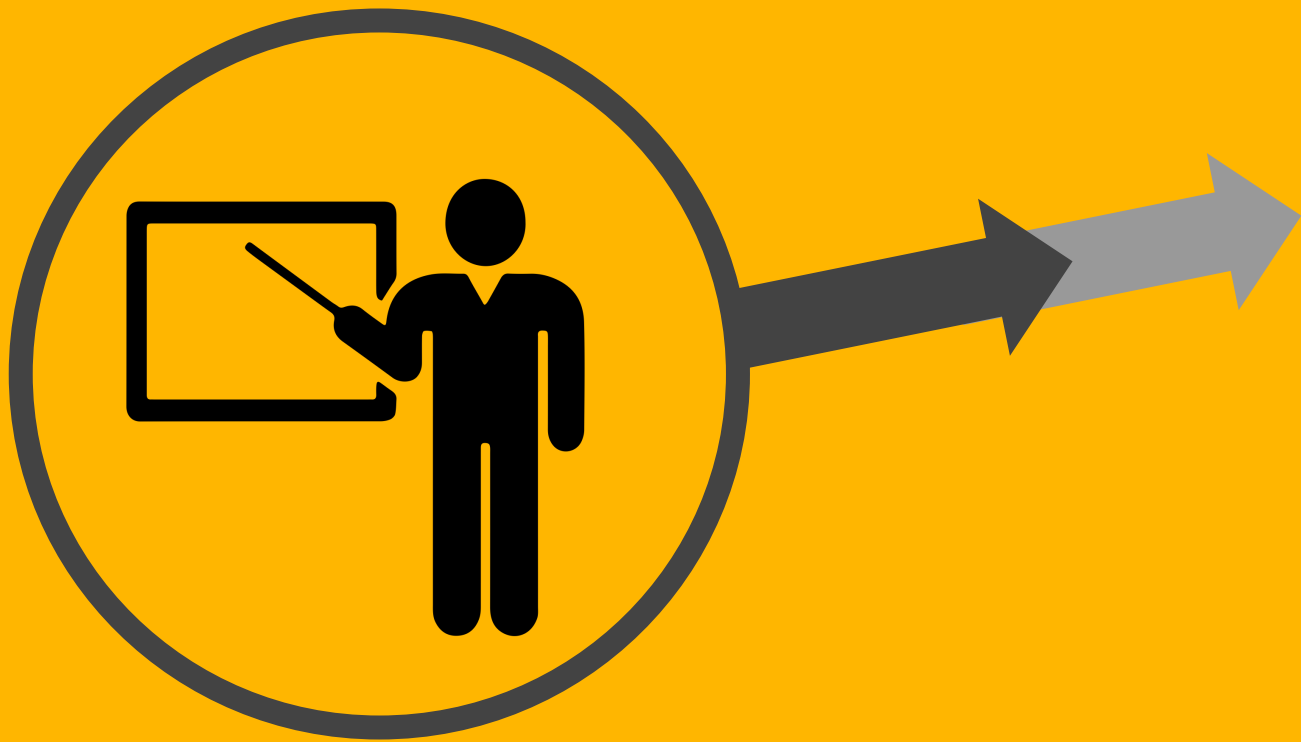
Recent classroom exposure



People use memory as a crutch.

The value of education is not memorizing, it's knowing where to look for the answer.

Education works better when you let people to discover on their own





Susan

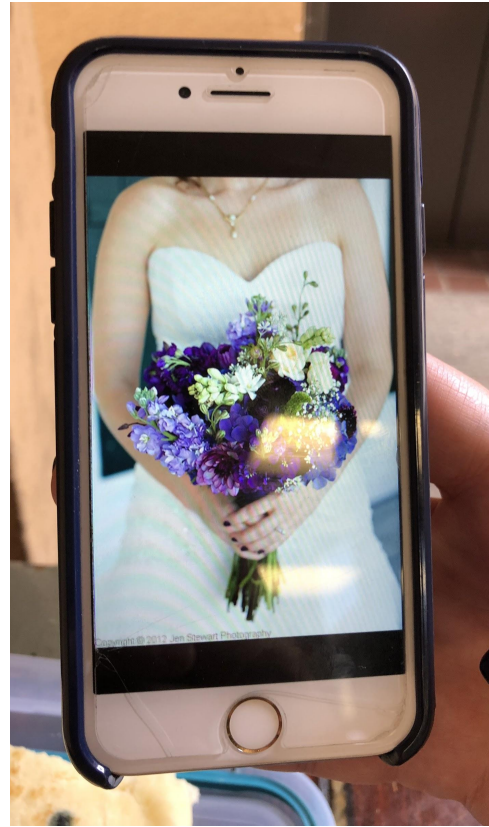
Front desk at dance studio

Recruited outside FedEx

Interviewed outside Tressider

Flower arranger

Mid-removed classroom exposure

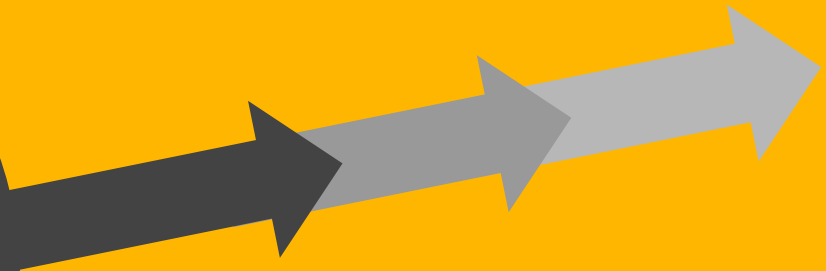




“Can you show me that like a hundred more times in slow motion?”

[about class called Marriage and the Family] Professor felt the need to teach a college class about the details of sex.

First flower arranging experience - WOW





Carmelo

Owner of Stanford Hair Salon

Recruited/interviewed outside
FedEx

Far-removed classroom exposure



“[Q: How did you build up that knowledge base of being able to do any hairstyle?]

Little by little[...]. You hear, you pick up every little gem and that's how you pick up your knowledge.”

*“I know every hairstyle...yeah,
and if I see a picture, I can
duplicate it”*

4

Identifying Needs

Empathy Map

Say

Think

[Blue sticky note: ...]
 [Purple sticky note: ...]
 [Purple sticky note: ...]
 [Yellow sticky note: ...]
 [Red sticky note: ...]
 [Purple sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Yellow sticky note: ...]
 [Yellow sticky note: ...]
 [Red sticky note: ...]
 [Red sticky note: ...]
 [Purple sticky note: ...]
 [Blue sticky note: ...]
 [Red sticky note: ...]

[Yellow sticky note: ...]
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 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Purple sticky note: ...]
 [Purple sticky note: ...]
 [Blue sticky note: ...]
 [Red sticky note: ...]
 [Red sticky note: ...]
 [Blue sticky note: ...]
 [Red sticky note: ...]
 [Red sticky note: ...]

Do

Feel

[Yellow sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Blue sticky note: ...]
 [Red sticky note: ...]
 [Red sticky note: ...]
 [Red sticky note: ...]
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[Red sticky note: ...]
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 [Purple sticky note: ...]
 [Red sticky note: ...]
 [Yellow sticky note: ...]



Say

Think

Do

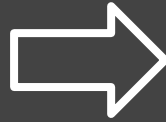
Feel

“Can you show me
that like a hundred
more times in **slow**
motion?”



Insight

People have
different
backgrounds and
needs



Need

tailor content to
promote
understanding for
many different
people's needs

Was **amazed** by first
flower arranging
experience.



Poor professors lead to
poor students.



Insight

Negative previous experiences can hinder learning new things. First impressions matter.



Need

Reset mindset → beginner's mind.
Wow in beginning of learning something new

Feels **unconfident** about running unless with a partner at equal level.



Difficult to find blacksmithing place so **dropped hobby** for bit.

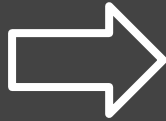


Travels 3 hours to go blacksmithing every week.



Insight

It can feel too difficult to start a new hobby.



Need

Make learning new things accessible to wide range of people. Encourage passion.

“I don't remember much...”

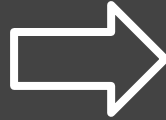


Tells an extremely detailed story with emotional impact



Insight

People remember stories better than actual content



Need

Harness emotional connection to enhance retention

Stanford physics labs > NYU
physics labs - less step-by-step
guidance

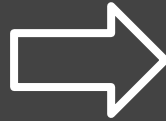


Enjoys open-studio style
blacksmithing



Insight

Students learn better
when exploring on
their own



Need

Promote
self-discovery and
problem generation
in learning process

Memory can be used as a
crutch.

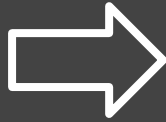


Uses memory as a
foundation for discovering
insights in math proof



Insight

Memory without
understanding is not
learning



Need

Build foundation for
developing insights



Thanks!

Any questions?

Elaborated Empathy Map



- "Education is learning where to look for things"
- "Memory can be a crutch"
- "Learning to learn"
- "Little gems"
- "Can you show me that like a hundred more times in slow motion?"
- "These are the best two razors in the world... if you don't pass you should pick up something else like plumbing."
- "Learning is building intuition for something"
- "You can spend too much time on anything. Limit yourself."
- "Memorizing gets in the way of learning for lots of people"
- Contradiction: "I won't remember much" → remembers extremely detailed story
-



- Perfectionism in flower arranging
- Travels 3 hours to do blacksmithing every week
- Asked interviewers to start Habitat for Humanity at Stanford
- Laughed when explained that he was just learning how to write his raps
- Asks domain experts for list of readings and the learns
- Learns from Twitter, reddit, students, lab work
- Follows intuition when writing rap
- Uses analogies and concrete examples when teaching



- Remember negative previous experiences with skill/activity
- Husband knows guitar so she thinks "what's the point?"
- Challenged to come up with problem and solution on own
- Contradiction - She is not deterred by her friend's expertise but is by her husband's
- People more interested in what they have to say
- Deconstructing what people actually want in their hairstyles
- French system in setting up foundation is good to have before learning the actual skills used in the workforce
- Memory serves to help draw connections
- Wants to do things she's bad at with people who are also bad
- In digital age, not worth to memorize things
- Anticipates where the formula comes from
- Quality of professors greatly affects quality of students
- Many professors aren't trained to teach
- Important to be self aware when learning to teach



- Wants to feel less intimidated when picking up new skill
- Entertained by conservative Japanese professor
- Feels confident in haircutting ability
- Amazed by first floral arrangement experience
- Husband is close to her, his skills are accessible to her
- Humans like to be able to predict a song and feel confident, but the song should not be too predictable
- Feels privilege to understand the new words rappers use
- Enjoys open-studio style blacksmithing