

# Cultivating a culture of uncertainty in the classroom

FASS Learning Community

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# Today's talk



Theoretical basis  
for argument

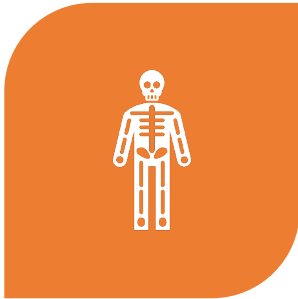


Some preliminary  
data



Discussion

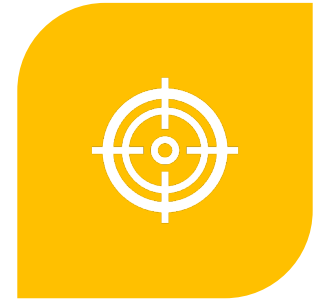
# Certainty in Psychology



BASIC HUMAN MOTIVE (NEED FOR POSITIVE SELF-IMAGE, NEED TO BE AFFILIATED, NEED FOR ACCURACY) – SOCIAL COGNITION



COGNITIVE MISERS – WE RELY ON SCHEMAS AND HEURISTICS (MENTAL SHORTCUTS)




HIGHLY MOTIVATED TO ACHIEVE CERTAINTY, BUT NOT NECESSARILY AS A RESULT OF EXHAUSTING INFORMATION

# Certainty in Morality

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Research on moral judgments – can achieve certainty about wrongness of action based on two lines of information (e.g., dead pet dog)



Ceiling effect of certainty meant either:

No interest in further information


Interest in only judgment-sustaining information as opposed to potentially judgment-reversing or mitigating information

# Certainty in the Classroom

Anecdotal – students seem very interested in certainty



Frustration with multiple theoretical explanations and the uncertainty that shouldn't come with what is supposed to be an objective evidence-based approach



Became vested in rattling their certainty to get them to:

Understand the field accurately

Pursue more questioning and healthy skepticism (critical thinking)

# This is especially important given the climate...

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PSYCHOLOGY IS FACING A  
REPRODUCIBILITY CRISIS



PARTLY BECAUSE WE BECAME OVERLY  
VESTED IN ACHIEVING OUR OWN  
CERTAINTY – PROVING OUR  
HYPOTHESES RATHER THAN TESTING  
THEM



CAUSES US TO ENGAGE IN BAD  
PRACTICE – P-HACKING, INFLATING  
CLAIMS AND INTERPRETATIONS,  
IGNORING RESULTS

# My Argument

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CERTAINTY IS A FEELING  
MORE THAN AN END STATE,  
AND SO WE SHOULD PUSH  
PAST IT TO PRIORITIZE  
REASONING OVER FEELINGS



STUDENTS NEED TO BECOME  
COMFORTABLE WITH  
UNCERTAINTY



EMPLOYERS WANT PEOPLE  
WHO ARE COMFORTABLE  
WITH UNCERTAINTY



MAY BE REASON TO BELIEVE  
CERTAINTY IS PROBLEMATIC  
IN LEARNING

# Some Preliminary Findings

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Pilot data from two  
modules: PL1101E and  
PL4235



Disclaimer – this talk is  
going to get very meta



Had to challenge my  
own certainty about  
certainty...!



Mixed findings...



# Certainty – PL4235

N = 71

From Week 1 to Week 13 – less certain overall

Week 13 - High interest, curiosity, engagement, reading (ceiling on 5-point scale)

No correlation between certainty and other constructs (interest, curiosity, engagement, reading)



# Curiosity

Arguably a construct  
that challenges certainty

Positively correlated  
with interest, plans to  
pursue further study,  
and level of engagement  
with readings (Week 13)

# Certainty - PL1101E

N = 201

Week 13 only

No correlation  
between certainty and  
other constructs

Certainty in Week 13  
was positively  
correlated with  
midterm exam mark...!

# Curiosity

Arguably a construct  
that challenges  
certainty

Positive correlation  
between curiosity,  
interest, and plans to  
pursue further study

# What does it all mean?



I'm not sure...! All I can safely say is that certainty at the end doesn't make a difference to curiosity, interest, engagement and plans to pursue further knowledge, except with respect to midterm marks in one module



Theoretically and based on research in other areas of judgment/decision-making, there's reason to believe that certainty can be problematic



I made them less certain in PL4235, but their interest, curiosity, engagement, reading are high... (didn't damage this, might have improved it)

# Some thoughts

Perhaps certainty is not the right term to use in asking students to reflect on an unfounded sense of knowing (the opposite of curious?) Perhaps it's more about a need for absolutism (those students that just want to know the "answer")

Midterms in PL1101E aren't exactly great for measuring critical thinking – perhaps more relevant for upper-level modules and critical thinking assessments (e.g., essays). Useful for absolute knowledge

Need a better T1 to T2 comparison (Week 1 - Week 13)

# Discussion

Do you think certainty can be a barrier to learning/critical thinking?

Do you have any experience with challenging students' need for certainty?