



Can we teach curiosity?

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TLC19
Teaching & Learning Conference

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Elon University

**WHAT DO YOU WANT YOUR STUDENTS TO BE
CURIOUS ABOUT?**

HOW DO YOU KNOW WHEN THEY ARE CURIOUS?

WHAT IS CURIOSITY?

HOW COULD WE TEACH CURIOSITY?

HOW WOULD WE KNOW IF OUR TEACHING WORKS?

“THE ASKING OF QUESTIONS IS IN ITSELF THE CORRECT RITE.”

(CONFUCIUS, *THE ANALECTS*, III:15)

“THE IMPULSE TOWARDS BETTER COGNITION”

(JAMES, 1899)

“PERCEPTUAL VERSUS EPISTEMIC” AND “SPECIFIC VERSUS DIVERSIVE”

(BERLYNE, 1954)

WANTING NEW INFORMATION *AND* LIKING NOVELTY/LEARNING

(LITMAN, 2005)

**A DRIVE FOR INFORMATION THAT ARISES FROM A VARIETY OF
REASONS, ALL OF WHICH MOTIVATE LEARNING**

(KIDD & HAYDEN, 2015)

CURIOSITY “HIGHLY” CORRELATES WITH:

ACADEMIC ENGAGEMENT

EDUCATIONAL ATTAINMENT

WORK SATISFACTION AND INCOME

LIFE SATISFACTION

(REEVES, VENATOR, & HOWARD, 2014)

“ACHIEVEMENT TESTS DO NOT ADEQUATELY CAPTURE CHARACTER SKILLS SUCH AS ... **CURIOSITY**, WHICH ARE VALUED IN THE LABOR MARKET, IN SCHOOL, AND IN MANY OTHER DOMAINS. UNTIL RECENTLY THESE SKILLS HAVE LARGELY BEEN IGNORED. HOWEVER, IN RECENT RESEARCH ECONOMISTS AND PSYCHOLOGISTS HAVE CONSTRUCTED MEASURES OF THESE SKILLS AND PROVIDE EVIDENCE THAT THEY ... PREDICT MEANINGFUL LIFE OUTCOMES.

THESE SKILLS ARE NOT SET IN STONE AT BIRTH. THEY **CAN BE IMPROVED**. COGNITIVE AND CHARACTER SKILLS CHANGE WITH AGE AND WITH INSTRUCTION.... IMPORTANTLY, CHARACTER SKILLS ARE MORE MALLEABLE AT LATER AGES.”

(HECKMAN & KAUTZ, 2013, P. 3-4)

“WE ACQUIRE [VIRTUES] BY FIRST HAVING THEM PUT INTO ACTION.... WE BECOME JUST BY THE PRACTICE OF JUST ACTIONS, SELF-CONTROLLING BY EXERCISING SELF-CONTROL.”

(ARISTOTLE, *NICOMACHEAN ETHICS*, p. 34)

“ASSUME A VIRTUE, IF YOU HAVE IT NOT.”

(SHAKESPEARE, *HAMLET*, ACT 3, SCENE 4)

**“YOU KNOW, I’VE LEARNED ONE THING IN THIS CLASS —
I DON’T ALWAYS HAVE SUCH GREAT IDEAS.”**

(“ALEC” QUOTED IN DUCKWORTH, 2006, P. 67)

WHAT IS CURIOSITY?

HOW COULD WE TEACH CURIOSITY?

HOW WOULD WE KNOW IF OUR TEACHING WORKS?

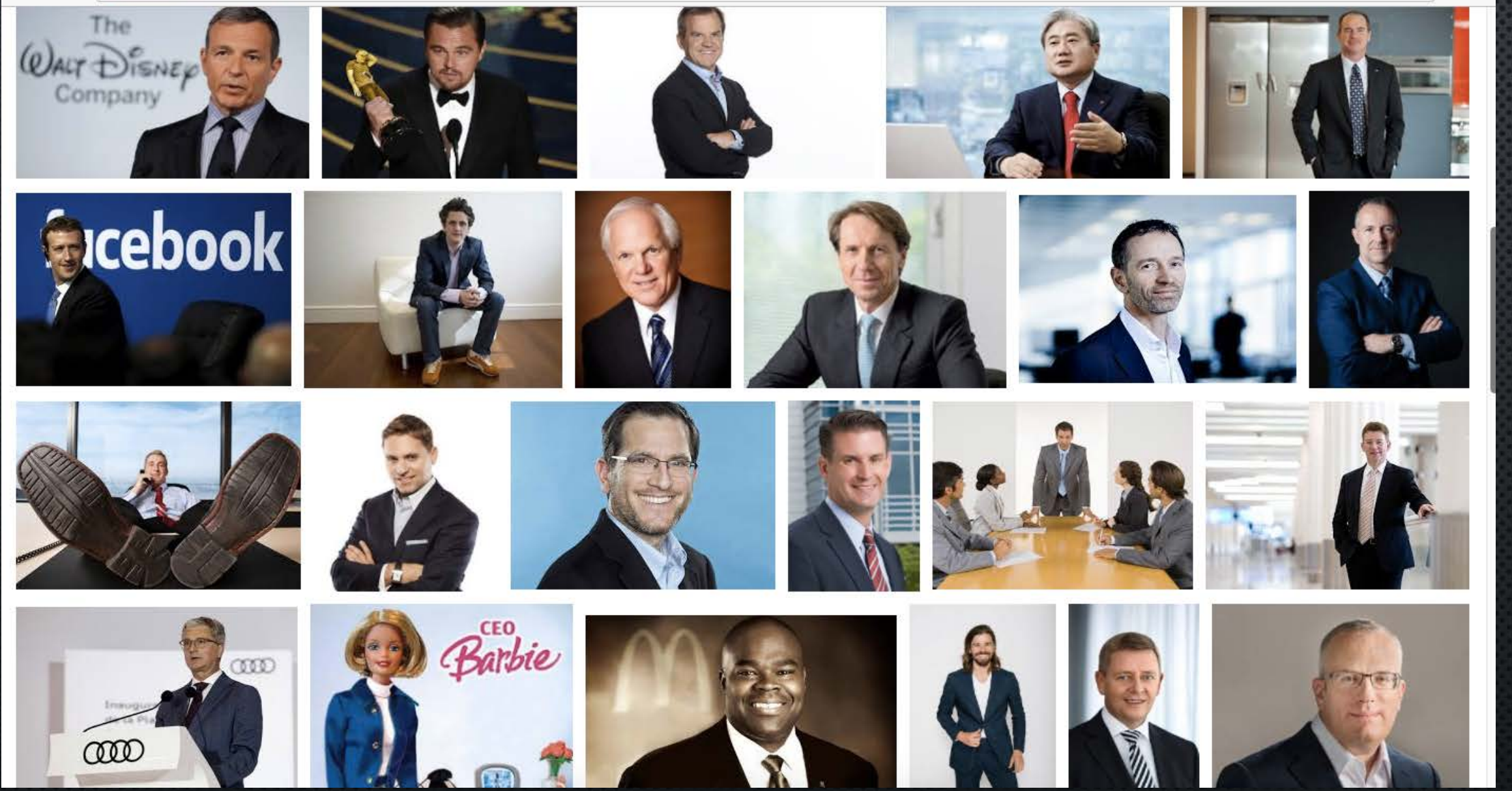


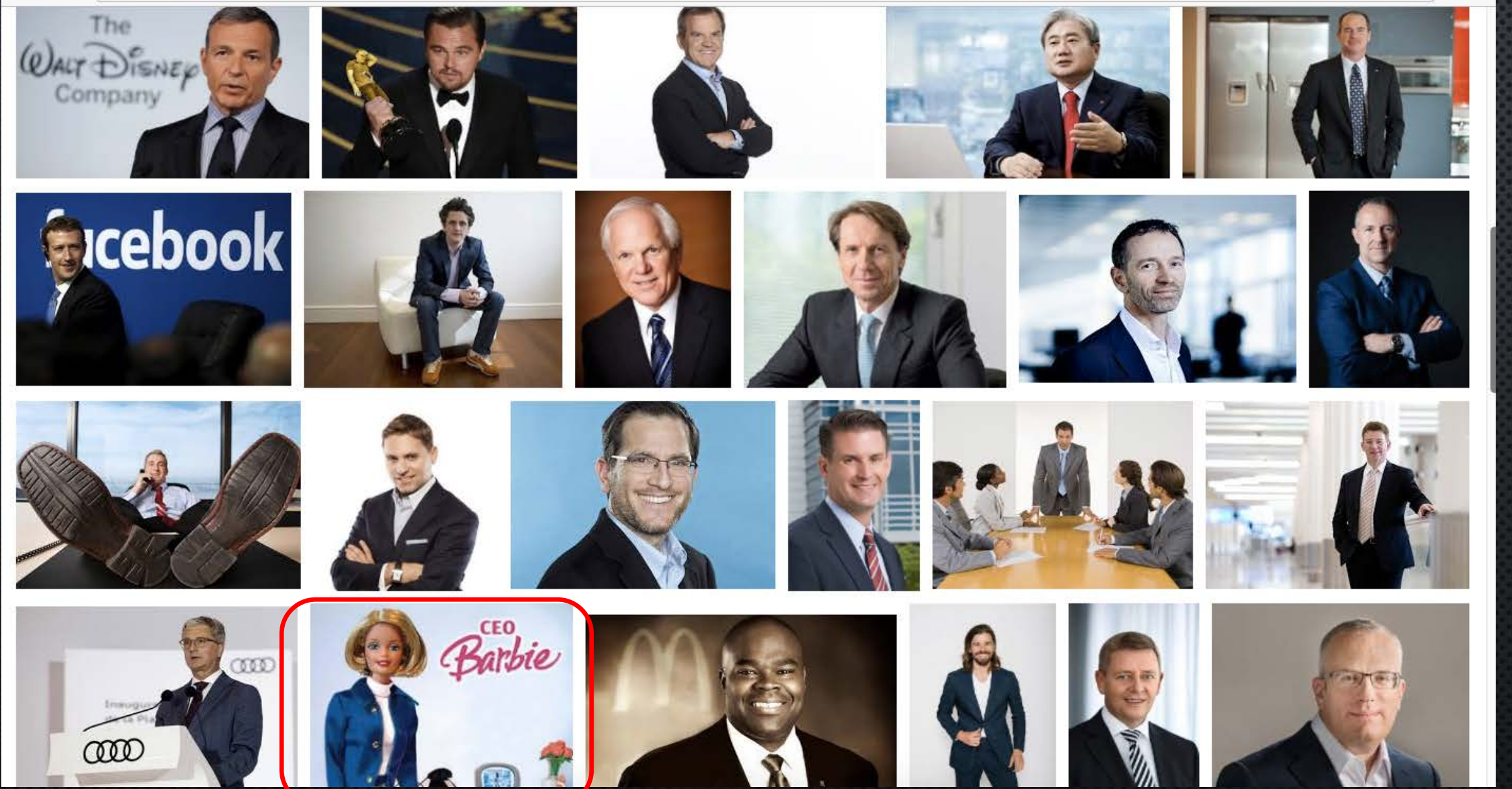
C.E.O.



MARCH 26, 2017







“LEARNING RESULTS FROM WHAT THE STUDENT DOES AND THINKS AND ONLY FROM WHAT THE STUDENT DOES AND THINKS.

THE TEACHER CAN ADVANCE LEARNING ONLY BY INFLUENCING WHAT THE STUDENT DOES TO LEARN.”

(H. SIMON QUOTED IN AMBROSE ET AL, 2010)

PRACTICING CURIOSITY

ENCOURAGE STUDENTS TO BE (AND VALUE BEING) CURIOUS

MAKE CURIOSITY LOW-STAKES

PROVIDE FEEDBACK ABOUT AND GUIDANCE ON CURIOSITY

PROMPT STUDENTS TO REFLECT ON THEIR OWN CURIOSITY

**WHEN DO STUDENTS PRACTICE BEING
CURIOUS IN YOUR COURSE?**




**WHEN IS YOUR CURIOSITY VISIBLE IN
YOUR COURSE?**

2 EXAMPLES



MISSING CALL FBI

THE FBI IS SEEKING INFORMATION CONCERNING THE DISAPPEARANCE AT PHILADELPHIA, MISSISSIPPI, OF THESE THREE INDIVIDUALS ON JUNE 21, 1964. EXTENSIVE INVESTIGATION IS BEING CONDUCTED TO LOCATE GOODMAN, CHANEY, AND SCHWERNER, WHO ARE DESCRIBED AS FOLLOWS:

| ANDREW GOODMAN | JAMES EARL CHANEY | MICHAEL HENRY SCHWERNER |
|--|---|---|
|  |  |  |
| RACE: White SEX: Male DPOB: November 23, 1943 POB: New York City AGE: 20 years HEIGHT: 5'10" WEIGHT: 150 pounds HAIR: Dark brown; wavy EYES: Brown TEETH: Good; none SCARS AND MARKS: 1 inch cut | RACE: Black SEX: Male DPOB: May 20, 1943 POB: Madison, Mississippi AGE: 21 years HEIGHT: 5'7" WEIGHT: 175 to 180 pounds HAIR: Black EYES: Brown TEETH: Good; none SCARS AND MARKS: 1 inch cut | RACE: White SEX: Male DPOB: November 6, 1939 POB: New York City AGE: 24 years HEIGHT: 5'9" to 5'10" WEIGHT: 170 to 180 pounds HAIR: Brown EYES: Brown TEETH: Good; none SCARS AND MARKS: 1 inch cut |

SHOULD YOU HAVE OR IN T
 CONCERNING THE WHEREAB
 REQUESTED TO NOTIFY ME O
 TELEPHONE NUMBER IS LISTE

June 29, 1964






SEQUENCING THE '60s

(FELTEN, 2005)



MISSING CALL FBI

THE FBI IS SEEKING INFORMATION CONCERNING THE DISAPPEARANCE AT PHILADELPHIA, MISSISSIPPI, OF THESE THREE INDIVIDUALS ON JUNE 21, 1964. EXTENSIVE INVESTIGATION IS BEING CONDUCTED TO LOCATE GOODMAN, CHANEY, AND SCHWERNER, WHO ARE DESCRIBED AS FOLLOWS.

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|---|--|--|
|  |  |  |
| RACE: White SEX: Male DOB: November 23, 1943 POB: New York City AGE: 21 years HEIGHT: 5'10" WEIGHT: 150 pounds HAIR: Dark brown; wavy EYES: Brown TEETH: Good; none missing SCARS AND MARKS: 1 inch cut over 2 inches above | RACE: White SEX: Male DOB: May 30, 1943 POB: Madison, Mississippi AGE: 21 years HEIGHT: 5'7" WEIGHT: 135 to 140 pounds HAIR: Black EYES: Brown TEETH: Good; none missing SCARS AND MARKS: 1 inch cut over 2 inches above | RACE: White SEX: Male DOB: November 6, 1939 POB: New York City AGE: 24 years HEIGHT: 5'9" to 5'10" WEIGHT: 170 to 180 pounds HAIR: Brown EYES: Brown TEETH: Good; none missing SCARS AND MARKS: 1 inch cut over 2 inches above |

SHOULD YOU HAVE OR IN THE FUTURE CONCERNING THE WHEREABOUTS OF REQUESTED TO NOTIFY ME OR THE NEAREST TELEPHONE NUMBER IS LISTED BELOW.

June 29, 1964



1. WHAT DO YOU KNOW?
2. HOW DO YOU KNOW?
3. WHAT DON'T YOU KNOW?



CURE-all: Large Scale Implementation of Authentic DNA Barcoding Research into First-Year Biology Curriculum

Oliver Hyman*, James Madison University | Elizabeth Doyle, James Madison University | Joseph Harsh, Jai State University | Andrea Pesce, James Madison University | Bejan Rasoul, James Madison University | K. James Madison University

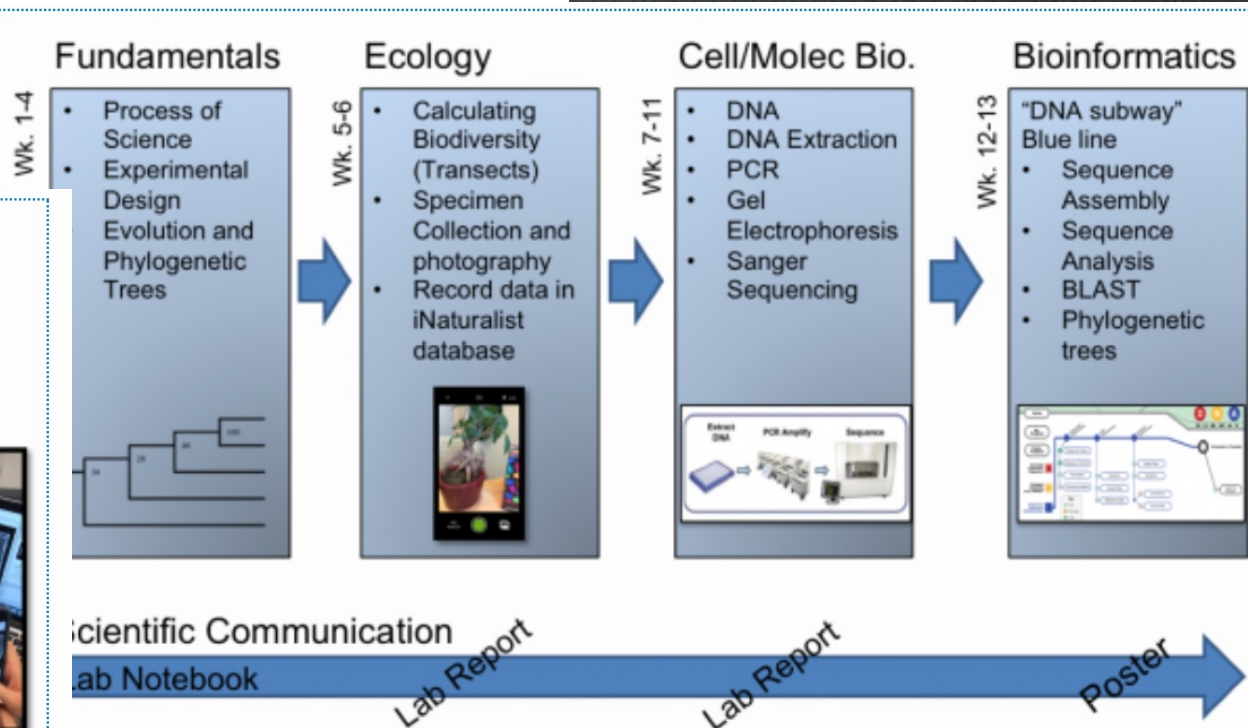
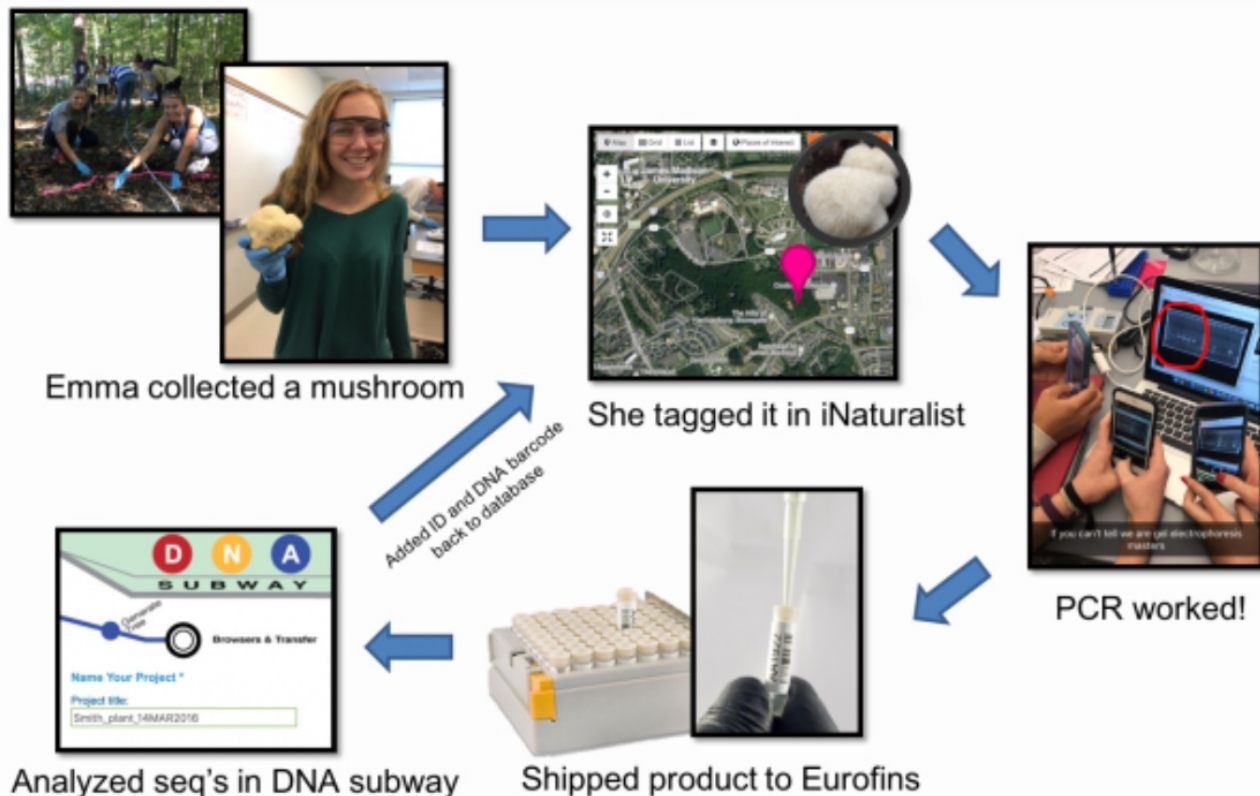


Figure 1. Overview of the topics covered during this semester-long DNA barcoding lab experience

Figure 2: Lab workflow from the perspective of an individual student

WHAT IS CURIOSITY?

HOW COULD WE TEACH CURIOSITY?

HOW WOULD WE KNOW IF OUR TEACHING WORKS?

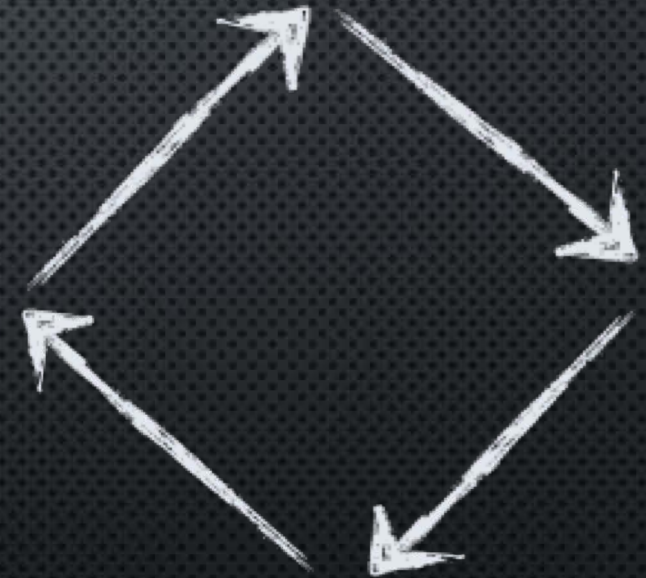
TEACHING AS A SCHOLARLY ACTIVITY

1.ASKING QUESTIONS ABOUT STUDENT LEARNING

2.BUILDING ON WHAT IS KNOWN

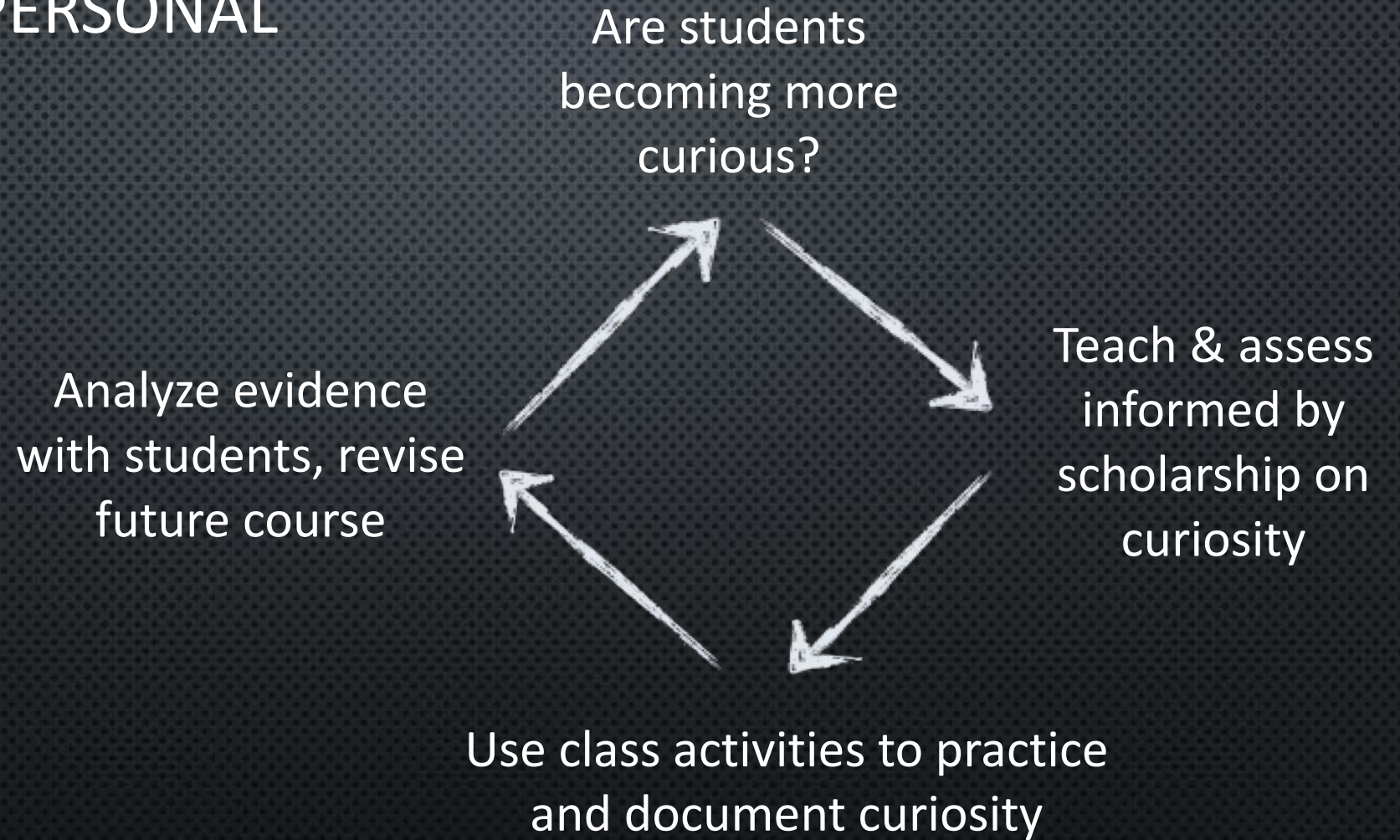
3.COLLECTING AND ANALYZING EVIDENCE

4.USING AND SHARING WHAT YOU HAVE LEARNED



(FELTEN, 2013)

GOAL = DEVELOP BOTH
SCHOLARLY AND PERSONAL
CURIOSITY



Curiosity and Exploration Inventory (CEI-II)

Instructions: Rate the statements below for how accurately they reflect the way you generally feel and behave. Do not rate what you think you should do, or wish you do, or things you no longer do. Please be as honest as possible.

| | | Very Slightly or Not At All | A Little | Moderately | Quite a Bit | Extremely |
|----|---|-----------------------------|----------|------------|-------------|-----------|
| 1. | I actively seek as much information as I can in new situations. | 1 | 2 | 3 | 4 | 5 |
| 2. | I am the type of person who really enjoys the uncertainty of everyday life. | 1 | 2 | 3 | 4 | 5 |
| 3. | I am at my best when doing something that is complex or challenging. | 1 | 2 | 3 | 4 | 5 |
| 4. | Everywhere I go, I am out looking for new things or experiences. | 1 | 2 | 3 | 4 | 5 |

STUDENT JOURNAL WRITING: AT LEAST 3 TIMES EACH WEEK, WRITE A PARAGRAPH OR TWO ABOUT QUESTIONS THAT ARE ON YOUR MIND AT THAT MOMENT.

(GRADED FOR COMPLETION)

STUDENT REFLECTIVE ESSAY: LOOKING BACK AT YOUR JOURNAL WRITING, HOW AND WHY DID YOUR QUESTIONS CHANGE (OR REMAIN THE SAME) DURING THIS COURSE?

(GRADED FOR ANALYSIS)

FACULTY JOURNAL: EACH CLASS SESSION NOTE WHEN AND WHY STUDENTS SEEM TO BE MOST CURIOUS AND ENGAGED. WHAT ARE THEY CURIOUS ABOUT?

(NOT GRADED)

ANALYZING CURIOSITY – WITH STUDENTS

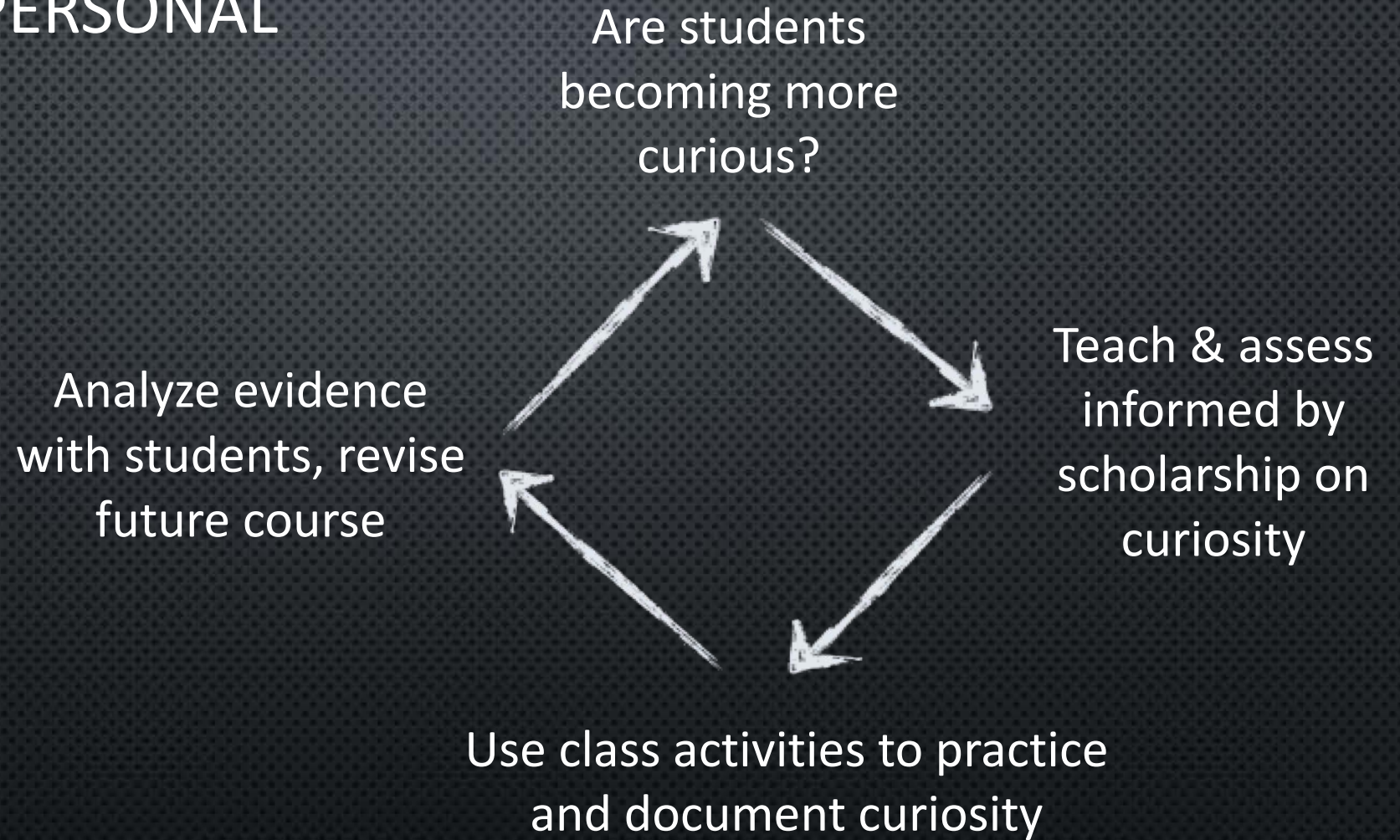
PRE/POST CURIOSITY INVENTORY (AGGREGATED)

STUDENT JOURNAL WRITING (INDIVIDUAL)

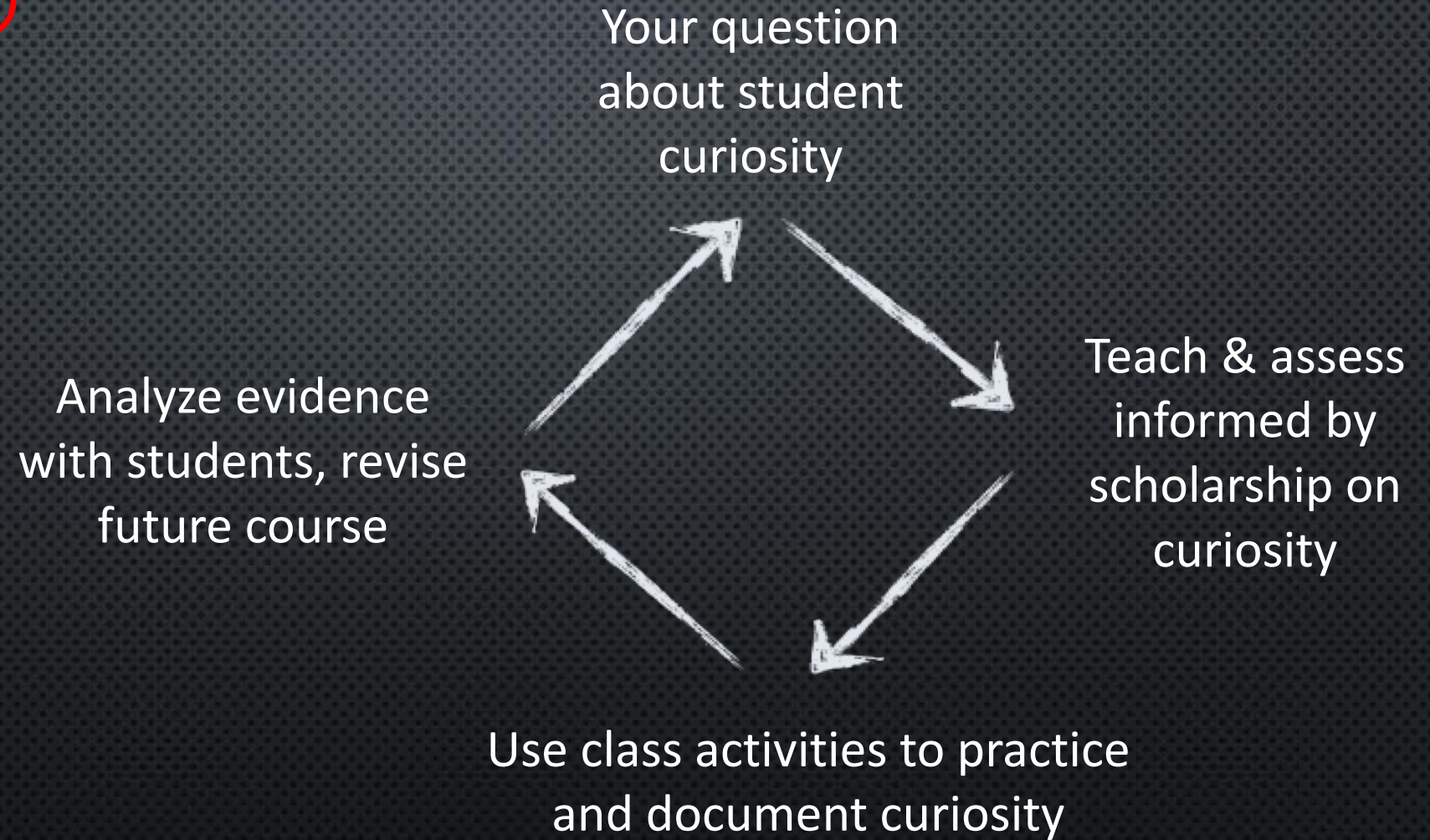
STUDENT REFLECTIVE ESSAY (ALL)

FACULTY JOURNAL (EXCERPTS)

GOAL = DEVELOP BOTH
SCHOLARLY AND PERSONAL
CURIOSITY



YOUR GOAL =



***“PARADOXICAL CURIOSITY* APPROACHES SOCIAL REALITIES WITH AN ABIDING RESPECT FOR COMPLEXITY, A REFUSAL TO FALL PREY TO THE PRESSURES OF FORCED DUALISTIC CATEGORIES OF TRUTH, AND AN INQUISITIVENESS ABOUT WHAT MAY HOLD TOGETHER SEEMINGLY CONTRADICTORY SOCIAL ENERGIES IN A GREATER WHOLE.”**

(LEDERACH, 2005, p. 36)

“WITH RESPECT THEN TO CURIOSITY, THE TEACHER HAS USUALLY MORE TO LEARN THAN TO TEACH.... [THE] TASK IS TO KEEP ALIVE THE SACRED SPARK OF WONDER AND TO FAN THE FLAME THAT ALREADY GLOWS. [THE] PROBLEM IS TO PROTECT THE SPIRIT OF INQUIRY, TO KEEP IT FROM BECOMING BLASÉ FROM OVEREXCITEMENT, WOODEN FROM ROUTINE, FOSSILIZED THROUGH DOGMATIC INSTRUCTION, OR DISSIPATED BY RANDOM EXERCISE UPON TRIVIAL THINGS.”

(DEWEY, 1910)

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