The One Question that Changed My Teaching Methods

Kirsten Hope Walker, M.A. Ed., M.S. Ed.
Quotes

- All life is an experiment. The more experiments you make the better. – Ralph Waldo Emerson
- The true method of knowledge is experiment. - William Blake
- I have always been more interested in experiment, than in accomplishment. – Orson Welles
Danielson Framework

#4 Develop skills to engage all students in challenging learning activities.
Today’s objectives

- Adapt curriculum to be more relevant to your students’ world view.
- Explore the many ways interdisciplinary content can be incorporated into all lessons.
- Appraise the knowledge gained through stewardship opportunities, discussions, and debates.
Who am I to say?

How does my background and experiences play into this?
Childhood aspirations
Paths to teaching

Success

what people think it looks like

Success

what it really looks like
My Formal Education

Prescott College

Eastern Illinois Panthers

Roosevelt University

Northern Illinois Huskies
Formal, Non-formal, Informal
(Know the difference)
The Question

Why it changed the way I approached teaching.
The answer
I didn’t want to give her.
My research/answer
Adapt curriculum to be more relevant to students’ worldview

What did I do?
Science is Everywhere!

Challenge: Tell me the science of whatever you want.
Pre-service Teachers

- Capstone environmental education class
- Incorporate technology to lessons
- History, physical education, reading, problem solving, alliteration, and fun!
- NIU Geocache Race!
Prairie Research Institute Science Camp 2013

- 12 students, 50+ scientists
- Rising high school juniors, seniors, and recent graduates
- Exposure to work by scientists
- Instills the value of science education
- Opportunity to job shadow the next year.
Prairie Research Institute Science Camp 2014

- 12 students, 30 scientists
- Rising high school juniors, seniors, and recent graduates
- Exposure to work by scientists
- Instills the value of science education
- Opportunity to job shadow the next year.
R/V Lake Guardian
Lake Michigan
Shipboard Science Workshop

- Opportunity for 15 teachers/year
- Week-long trip one of the Great Lakes
- Work with scientists on research
- Great Lakes issues
- Use experience to make science relevant to their students
  - Experiments
  - Scientist connections
  - Hydrolab
The Medicine Chest

http://www.iisgcp.org/medicinechest/

- Metacognitive vocabulary
- Flipped classroom
- NGSS aligned
Explore ways interdisciplinary content can be incorporated into all lessons.

Even the Pythagorean theorem?
Why do I need to know $a^2 + b^2 = c^2$?

- Build houses, decks, buildings, and put windows, doors and floors in.
- Baseball diamond
- Art
- Anything that requires a right angle.
Don’t stop there! Tell the story!

- Greek History
- Psychology

- Pythagoras (560-500 B.C.E)
- Secret Brotherhood of Pythagoreans, devoted to the study of mathematics (cult-like)
- “Numbers rule the universe!”
- After completion, sacrificed 100 oxen
ESL Biology
(interdisciplinary approach)

- Cultural Biomes = Cultural and Environmental Awareness
Appraising knowledge gained through stewardship opportunities, discussions, and debates

Testing long-term knowledge and not whether or not your students can guess correctly on a scantron
More of this

“In school, you can’t always talk about things. In debate, I am free to argue and express my attitude.”
– Charisma
Not this
How?

- Start from the first day of class.
  - Short essays with specific talking points.
  - Build with stewardship, discussions, and debates
  - Insist on including relevance in life.
- Make the tests shorter, but more meaningful.
- The final essay is comprehensive and personal.
- Have your students evaluate the class as to how much they feel they have learned and how they will use it.
- Incorporate NGSS thinking
Your turn: Why do I need to know this?

- Distributive law
- Optics
- Pablo Picasso
- Bacteria or viruses
- Civil War
- Isotopes
- Acids and bases
- Geologic time
- Drama
- Waves

- Story structure
- Biomes
- Balancing a budget
- Ecology
- Abnormal Psychology
- Others…

- Give rationale, approach (teaching methods), possible outcomes
Share time
Final Quotes

I learned this, at least, by my experiment; that if one advances confidently in the direction of his dreams, and endeavors to live the life which he has imagined, he will meet with a success unexpected in common hours. - Henry David Thoreau

When teachers complain about your class having “too much fun” during school and it’s making them look bad, respond with “You are the only person that can make you look bad.” – Dr. Robert Carter (NIU)
Questions?

Contact information: walkerkirstenhope@gmail.com or khw@illinois.edu

Thank you for your time and participation.