

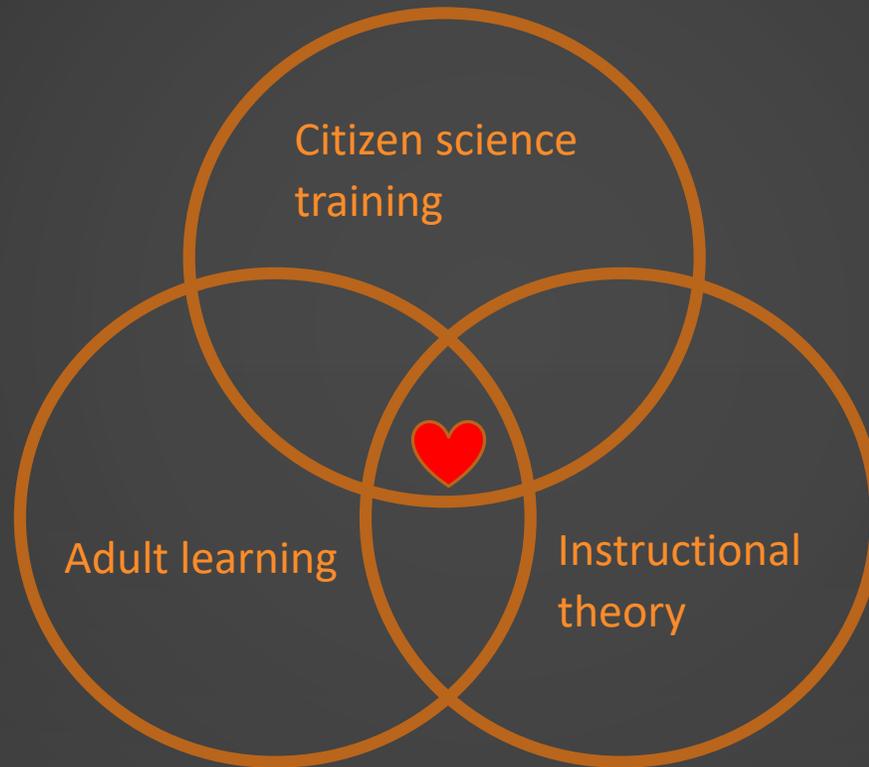
CITIZEN SCIENCE TRAINING

Describe the research problem

Citizen volunteers are required to collect the ecological data necessary to maintain healthy, functioning ecosystems because federal and philanthropic funds available to employ scientists are decreasing. Simultaneously, the need for ecological monitoring is increasing due to anthropogenic environmental change.

Citizen science training is often conducted by scientists who manage and research the natural landscapes in question. This practice does not rely on education theory and this might be one reason why the quality of citizen-collected data is in question. A deeper understanding of the citizen science volunteer training experience is needed to strengthen the quality of citizen science efforts. This study will investigate the instructional strategies employed in training opportunities for citizen scientists engaging in weed management programs in Colorado, USA.

VENN DIAGRAM



RESEARCH QUESTION AND SUB QUESTIONS

- In the state of Colorado, what instructional strategies are used in training opportunities for citizen scientists engaging in weed management programs in Colorado, USA?
 - Are these techniques aligned with instructional theory?
 - Are these techniques aligned with andragogy (adult learning)?

Research questions- focus of the case, boundaries, and unit of analysis

MIXED METHODS

- **Mixed methods survey** - administered to training developers at various non-profits to investigate what instructional techniques will be employed during the training. Describe the experience of the training, some questions open, some with Likert scale design
- **Qualitative observation** - Observe a subset of trainings and code instructional techniques according to theoretical categories (didactic, inquiry-based, problem-based, field experience, etc.)
 - Is this part necessary? If I go to the training, am I just another person having the “experience?”
- **Mixed methods survey** – administered to participants after the trainings to ascertain whether or not they thought the learning experience was 1) a comfortable learning experience (theoretically aligned with andragogy), 2) effective, ie will result in improved performance in the volunteer role. Describe the experience of the training, some questions open, some with Likert scale design

CASE STUDY DESIGN

- Post-IRB approval: By posting bulletins in local environmental publications, I will solicit participation from non-profits who are running or plan to run weed management trainings for citizen scientists (purposive sample of willing participants)
 - Weed Network
 - Colorado Watershed Association
 - The Tamarisk Coalition
- Training criteria for inclusion
 - Involves weed management
 - Volunteer training
 - Non-profit or government agency run

Notes on **Case Study Design**- Yin, 2009 – real-life, contemporary context or setting, interpretative but endeavors to present a holistic, in depth description of a total system or cases

Intensive description and analysis of phenomenon

The case is a bounded, integrated, system (Stake, 1995; Merriam 1998) or multiple bounded systems

Unit of analysis – each training

Studied through detailed, in-depth, data collection involving interviews, surveys, and document review

WHAT HAVE YOU LEARNED THIS WEEK?

- I made significant progress in framing my dissertation topic.
- I met very interesting people.
- I learned about the new writing center opportunities and subsequently, I am encouraged to engage the writing center.
- I organized a lot of literature for my literature review.

WHAT ARE YOUR NEXT STEPS?

- I just started a course that facilitates my continued work on these very same processes in the next five weeks. The course work involves framing a “curriculum issue/support system solution OR an instructional strategy” and annotating relevant literature.
- I am eager to do some research to identify what trainings I might include in my dissertation project. Since I won't actually collect the data until next spring, this spring and summer season could really help me test out the concept. I have worked in this arena in Colorado since 2003 so I have strong understanding of what non-profit organizations I should seek out.
- I would like to write the surveys. Of course they will change dramatically, but I think this will help me move towards validity with my methods.

**P.S. WOULD YOU LIKE TO SEE WHAT I AM
TALKING ABOUT?**

**[HTTPS://DRIVE.GOOGLE.COM/FILE/D/0BYAQE6X0TEQDNMDGCG44ULPADG
C/VIEW?USP=SHARING](https://drive.google.com/file/d/0BYAQE6X0TEQDNMDGCG44ULPADGC/view?usp=sharing)**