# Teaching in non-traditional classroom contexts

Alexandra Tamerius & Katherine Simeon

Northwestern

SEARLE CENTER FOR ADVANCING LEARNING AND TEACHING

# Teaching in non-traditional classroom contexts: Warm Up

Independently, identify a non-traditional classroom context that you will be leading or would like to lead.

*On an index card, write down:*

1. What motivates you to teach in this setting?
2. What questions do you have about teaching in this format?

# In pairs

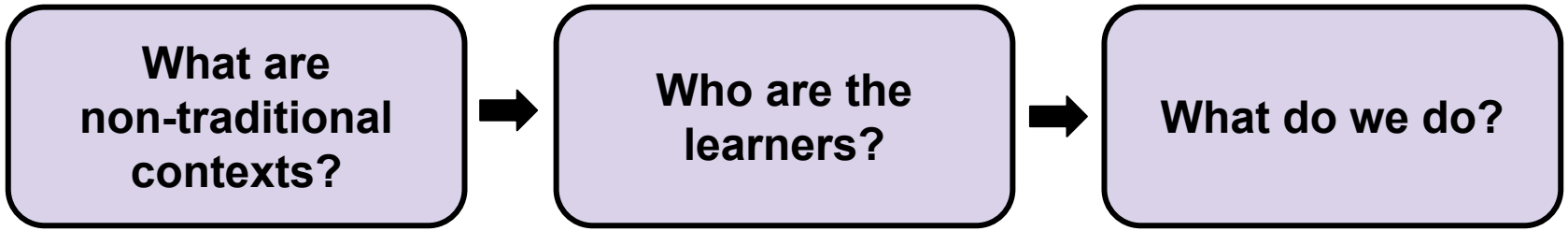
1. Introduce yourselves!
2. Briefly describe your **teaching context** to your partner
3. Describe **intended audience** of your teaching context

# Learning Objectives

By the end of this workshop, participants will be able to:

1. Identify different non-traditional classroom contexts and their corresponding audiences.
2. Formulate specific, learner-centered learning objectives for a chosen non-traditional classroom context.
3. Design learner-centered activities for a chosen non-traditional classroom context.

# Workshop Road Map

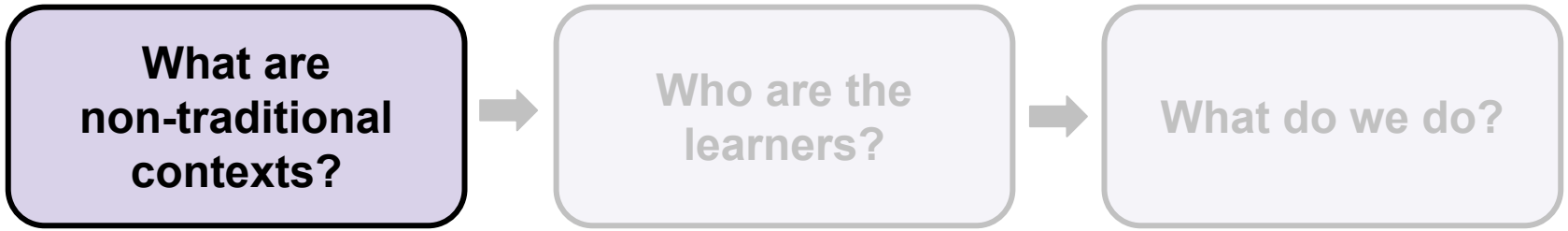



**Activity 1**: Non-traditional context matrix

Creating learner profiles & achievable learning objectives

**Activity 2**: Developing a plan for my context

# Workshop Road Map

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# What is a non-traditional context?

Any learning format that isn't a semester or quarter-long class

- Workshops & Tutorials
  - NU Research Computing Services Trainings
  - Searle Workshops!
- Outreach (Libraries, museums, K-12 students & teachers)
  - NU Science Club, NU Brain Awareness
- One-on-one: Mentoring, Tutoring
- Journal Clubs, Lunch & Learn

# Advantages of Non-Traditional Teaching and Learning

- Opportunity for creative hands-on and creative activities
- Explore unique topics
- Low-stakes learning environment
- Establishes learning communities
- Can address specific needs or raise awareness on specific topics
- Great professional development experience for teachers and learners
    - Independent teaching experience and leadership
    - Opportunity to tailor to different types of audiences and purposes

# Challenges and Considerations

- Limited time and resources
- Types of activities possible in various formats
- Varying learning profiles
  - Different student backgrounds can be difficult to tailor to
- Student commitment is variable
  - What can you hold students accountable to?
  - What is the major learning objective?

# Activity 1: Comparing Non-Traditional Contexts

*Independently:*

1. Select the learning format that best matches your identified non-traditional classroom context
    a. Alternatively, use the last row to discuss a learning format that is not listed.

2. Fill out the corresponding row on the matrix for your specific context. You only need to fill out one row!

# Activity 1: Comparing Non-Traditional Contexts

You will need to identify the following for a given learning format:

1. **Potential Topic**
2. **Audience**
3. **Potential Activities & Strengths**
4. **Challenges & Considerations**

# Activity 1: Comparing Non-Traditional Contexts

| **Learning Format** | **Lunch & Learn** |
| --- | --- |
| **Potential Topic** | A specialized research technique (e.g., eye-tracking, crystallography) |
| **Audience** | Fellow graduate students and postdocs |
| **Potential Activities & Strengths** | *Potential activity*: establish a learning agenda together.<br>*Pros:* Establish a learning community to ask questions. |
| **Challenges & Considerations** | Responsibility to learn is on the learners.<br>Limited time and resources for advanced topics. |

# Activity 1: Comparing Non-Traditional Contexts

*In groups:*

1. Share your responses to fellow group members.

2. Discuss:
    a. If you chose the same row as another group member: How do your contexts compare?
    b. Are there common benefits or challenges?

# Activity 1: Workshops

| | |
|---|---|
| **Learning Format** | **Workshop (2 hours)** |
| **Potential Topic** | Data visualization in R |
| **Audience** | Academic researchers (graduate students, postdocs) |
| **Potential Activities & Strengths** | *Potential activity*: Run a script line-by-line and determine what each line accomplishes.<br>*Pros:* Hands-on, active learning throughout the entire session. |
| **Challenges & Considerations** | True proficiency in R will depend on continued practice after the workshop is over. |

# Activity 1: Outreach

| | |
|---|---|
| **Learning Format** | *10 min hands on stations* |
| **Potential Topic** | *Simple machines: pulleys* |
| **Audience** | *4th Graders* |
| **Potential Activities & Strengths** | *Potential activity*: Pulleys to lift books<br>*Pros:* visual, hands-on, memorable |
| **Challenges & Considerations** | Appropriate space for setup, short turnover time, student accountability, student focus |

# Activity 1: Mentoring undergraduates in your lab

| | |
|---|---|
| **Learning Format** | **One-on-one mentorship** |
| **Potential Topic** | Submitting an undergraduate research grant application |
| **Audience** | Experienced undergraduate research assistant |
| **Potential Activities & Strengths** | *Potential activity*: Discuss application drafts together.<br>*Pros:* Developing a feedback-practice cycle and communication skills |
| **Challenges & Considerations** | Can be time-intensive; Approach may need to be tailored to student's motivation and reception to feedback. |

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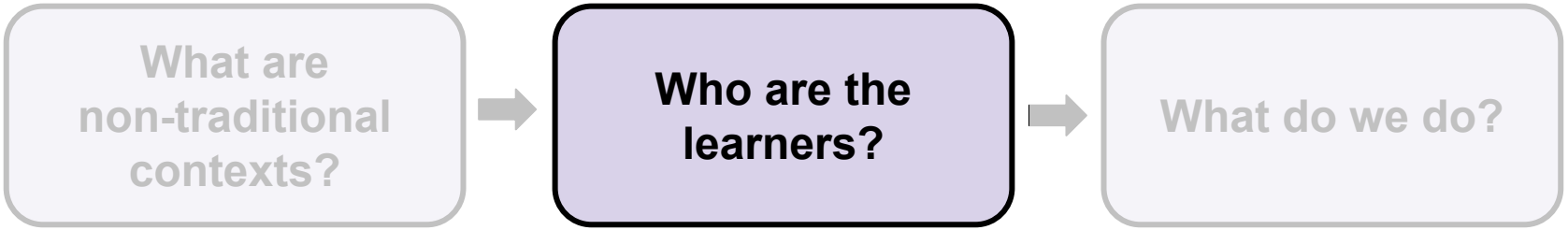


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# Given the learning format...

| | Traditional Class | Non-Traditional Format |
|---|---|---|
| **Audience** | Students | ***Anyone!*** |
| **Learning Objective** | Multiple goals that build up to skill mastery | To introduce people to new information |
| **Format Features** | ● Recurring meetings over multiple months<br>● Homework assignments | ● Short term; fewer meetings<br>● Likely can't give homework |

# Learner Profiles

What is the learner's **background** & **interests**?

What is their **previous experience** with the topic?

**Why** are they attending your teaching context?

**How** can they benefit from this experience?

# Learner Profiles

| | Workshop (Intro to R) | Outreach (Pulley) |
|---|---|---|
| **Background & Interests** | | |
| **Previous Experience** | | |
| **Why are they here?** | | |
| **How could they benefit?** | | |

# Learner Profiles

| | Workshop (Intro to R) | Outreach (Pulley) |
|---|---|---|
| **Background & Interests** | Researchers who have little prior coding experience (*establish expectations*) | |
| **Previous Experience** | Experience with Excel and SPSS *(use familiar framework)* | |
| **Why are they here?** | Need R for a specific use case | |
| **How could they benefit?** | Obtain resources for continued learning | |

# Learner Profiles

| | Workshop (Intro to R) | Outreach (Pulley) |
|---|---|---|
| **Background & Interests** | Researchers who have little prior coding experience (*establish expectations*) | Widely varying (*take time to ask students how activity relates)* |
| **Previous Experience** | Experience with Excel and SPSS *(use familiar framework)* | Limited (focus on real world examples) |
| **Why are they here?** | Need R for a specific use case | School/parents |
| **How could they benefit?** | Obtain resources for continued learning | Building basic real world knowledge |

# SMART Learning Objectives

**S**pecific

**M**easurable

**A**ttainable

**R**elevant

**T**ime-bound

# SMART Learning Objectives

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**R**elevant

**T**ime-bound

Scale your objectives to be **attainable** given **time** and **logistical** constraints.

Objectives can also streamline your activities so that they are **learner-centered**.

# Given the time constraints...

*In a class*

**Write** a script that loads and cleans data in R.

**Describe** crystal growth parameters and mechanism.

*In a workshop/activity*

**Recognize** parts of an R script.

**Observe/Conduct** crystal growth experiment.

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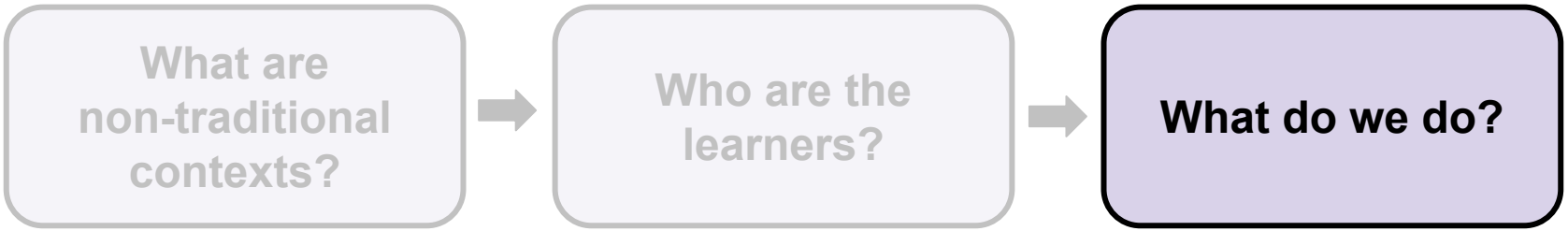


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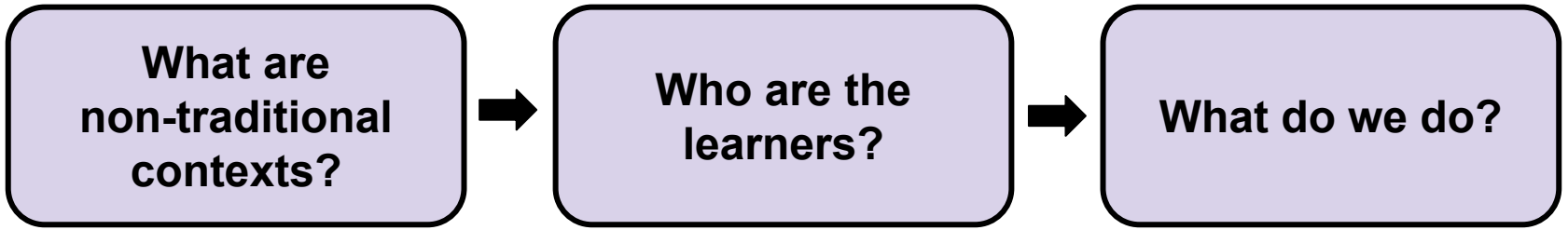
# Activity 2

*Independently, on the worksheet:*

1. Identify your non-traditional classroom context.
2. Create a learner profile for a participant in your context.
3. Brainstorm a potential activity for your context:
    a. Write a learning objective that would be addressed in your activity.
    b. Draft activity instructions.

# Workshop Debrief & Takeaways




Learning formats that are ***not*** a traditional, semester-long course.

A great way to creatively present your area of expertise to different audiences!

Your learners may not be traditional students!

Be thoughtful about who is in your non-traditional classroom by thinking about **learner profiles**.

Create **specific, time-bound** learning objectives.

Be **realistic** about what you can accomplish and consider the learners' motivations & interests.

**Wrap Up:**
Questions?
Post-Workshop Survey

***Thank you!***