



# Real Partners for Real Analysis

Dr. Abigail Higgins & Dr. Sayonita Ghosh Hajra  
Department of Mathematics & Statistics

## Introduction

In undergraduate advanced mathematics classes...

### Challenges

- Each student brings a unique set of talents and learning needs.
- Students tend to be passive during class
- Students typically do not share specifics about their struggles in the course.

### Goals

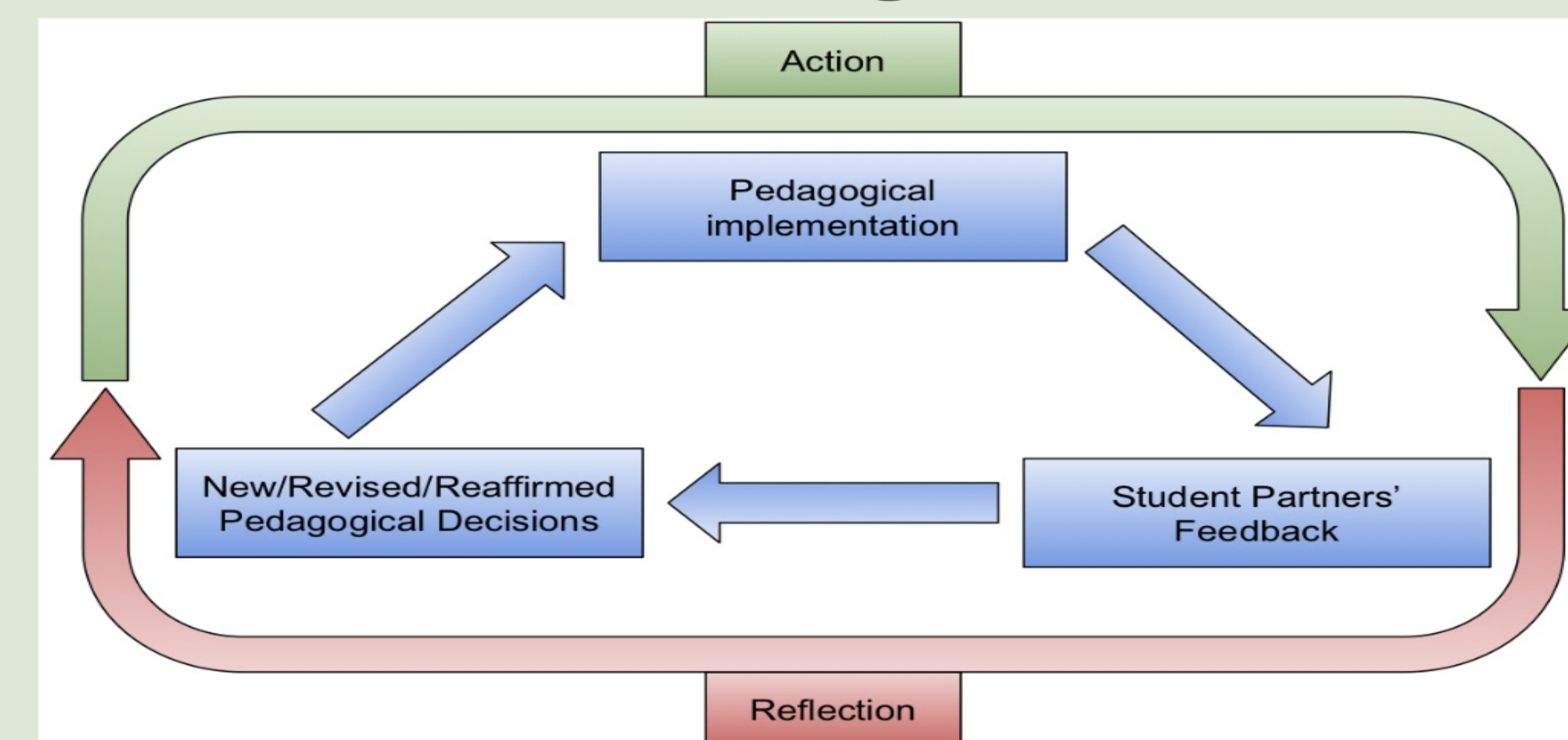
- Leverage students' talents/learning needs to create inclusive classroom.
- Increase student participation.
- Students provide feedback on their learning experiences.

## Real Partners for Real Analysis at Sac State

### Real Partners Program at Sac State

- Introduced in Fall 2020, Supported by DHSI INSPIRE 2020-2021 Mini-grant
- Two Student Partners (SPs) were hired for 10 weeks in Fall semester and paid for their time/work
- Student Partners met with instructor and program directors weekly and held weekly office hours for their classmates

### How the Program Works



Alvarado, Ghosh Hajra, Higgins, 2020

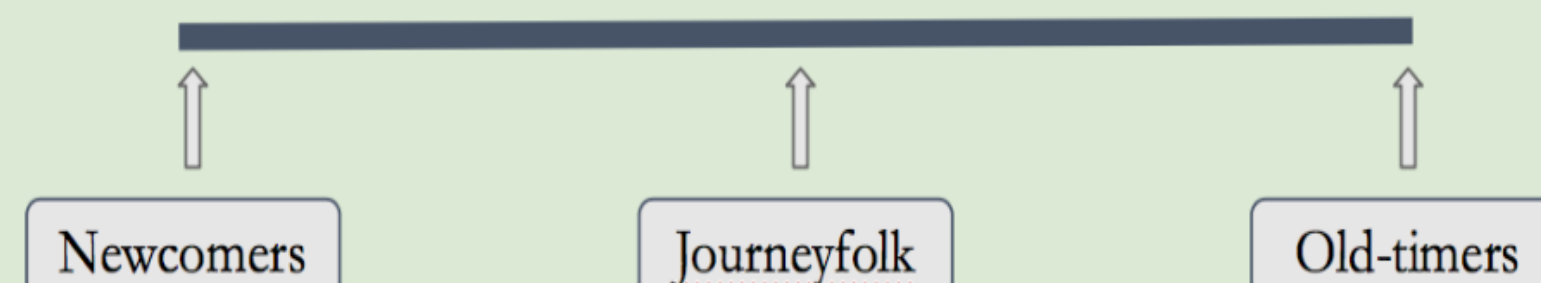
## Background and Literature

### Community of Practice

*Situated Learning*  
(Lave & Wenger, 1991)

- "Learning involves the construction of identities," p. 52
- Community of Practice
- Legitimate peripheral participation

"Rather than a teacher/learner dyad, this points to a richly diverse field of essential actors and, with it, other forms of relationships of participation." p. 56



### Validation of Existing Instructional Design

Instructor: "... So they tell me that, 'Oh like in the class on Monday it's good that you said this, because you know then some students, actually asked questions in the chat and other students responded in the chat, like so. You don't even have to actually answer, students answer each other's questions and so on.'"

### Suggestions from Student Partners

- Increase wait times after questions asked by the instructor
- Rephrase questions when no one is answering
- Ask for student help in completing the proofs
- Make videos available more often

## Data Collection

### Data Collection

- Participants
  - 35 undergraduate students (2 Student Partners)
  - 1 instructor
- Student survey (administered in the 13th week)
- Student partner weekly reflections
- Pre- and post-semester interviews with instructor
- Post-semester interviews with student partners

## Real Partners Programs

### Real Partners Program Objectives:

- Create inclusive learning community
- Promote student growth

### Achieve these objectives by:

- Actively involving students in shaping the course.
- Lifting the curtain: allowing students to see the process of developing and delivering a course.
- Developing metacognitive skills.
- Refining communication skills and encouraging active community participation.

## Fall and Spring Information

### Fall Implementation

- Office hours: Feedback sessions
- One student survey administered in the 13th week
- Post-semester interview with Student Partners
- No interviews with other students

### Spring Implementation Plans

- Office hours: Study sessions
- Gather early- and late-semester student surveys
- Pre- and post-semester interviews with Student Partners
- Post-semester interviews with other students

## Acknowledgments

Thank you to DHSI Minigrant for funding this project.



### Contact Information

[abigail.higgins@csus.edu](mailto:abigail.higgins@csus.edu)  
[sayonita.ghoshhajra@csus.edu](mailto:sayonita.ghoshhajra@csus.edu)