Cultivating Youth Scientists with Youth Participatory Action Research

Our Experiences from the ANR Grant Project: Developing a Culturally-Relevant Civic Science Approach to Improving Scientific Literacy for Latino Youth

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Goal: Develop, pilot, and evaluate a culturally-responsive form of civic science – *youth participatory action research (YPAR)* – to help marginalized youth improve their scientific literacy, their positive youth development, and their civic engagement.
Our Approach and Informing Literature

Scientific Literacy and Informal Science Education + Positive Youth Development + Science-Related Civic Engagement = Youth achieving community impact.

Supporting marginalized youth to utilize scientific data to advocate for practices important to their communities.
Research Questions

• What do educators and youth report as key project elements that engaged and motivated young people in a YPAR project?

• What do youth report about their understanding and awareness of relevant science-related issues in their communities? What do youth report about their capabilities and confidence to affect science-related community change?

• What do adult educators describe as their own growth and development through facilitating a YPAR project?
YPAR Model

A form of civic science that start with forming the research foci and collecting, analyzing, and interpreting data in order to bring about collective action for positive community change.
Community Futures
Community Lore
Stepping Stones

1. GET TO KNOW OUR PROJECT & TEAM
   - Lead our team identity & relationships
   - Team norms: decide how we will work together
   - Welcome team members for our project & YPAR

2. CHOOSE A FOCUS: WHAT DO WE WANT TO CHANGES?
   - Learn about past and present issues in our community
   - Reflect on what is that we can change
   - Select the focus for our project

3. GET READY FOR OUR PROJECT
   - Learn more about Participatory Action Research (PAR) and the values behind it
   - Assess our community & program's readiness to do a PAR project
   - Plan & prepare for our project & assert our team

4. PRACTICE RESEARCH SKILLS
   - Learn & practice core research skills
   - Develop specialized research skills
   - Try out & strengthen our research tools

5. DEVELOP OUR RESEARCH PLAN
   - Develop our research questions
   - Choose the type of research needed
   - Create our research tool(s)

6. CONDUCT RESEARCH
   - Finalize our research plan
   - Develop systems to support each other
   - Collect data

7. ANALYZE OUR DATA
   - Figure out what we learned from our research
   - Develop findings & recommendations
   - Connect our work to the bigger picture

8. CREATE & SHARE FINAL PRODUCT
   - Identify goals and strategies to share our work with target audiences
   - Create our final product & present it
   - Organize informational and/or events to share our work
   - Reflect & celebrate!

9. TAKE ACTION
   - Identify gaps and strategies to help improve our work
   - Choose action strategies
   - Create & implement action plan

UC DAVIS
Center for Regional Change
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School of Education
ypar.cfl.ucdavis.edu
Stepping Stone 1: Get Ready for our Project

• Learn more about YPAR
• Assess community & organizational readiness
• Plan & prepare for project
• Assemble our team

• Training with UCD Center for Regional Change (Brandon Louie)
• 3-County YPAR Team – Getting to know each other
• Hiring Staff
• Identifying Sites
Stepping Stone 2: Get to Know Our Project and Team

- Build our team identity & deepen relationships
- Team norms
- Become familiar with YPAR
- Humboldt County Middle School
  - Vice-Principal buy-in and actively recruited students
  - DELAC (District-level English Learner Advisory Committee) support and place for parent recruitment and buy-in
  - Play football to build team relationships
Stepping Stone 3: Choose a Focus: What do we want to change?

- Learn about past and present community issues
- Reflect on what we care about
- Define the focus for our project

- Humboldt County Middle School
  - Youth brainstormed what would be their ideal community and their ideal school
  - They focused on their ideal school, specifically the issue of “real food”
  - They wanted to have more “real food” cafeteria options
Stepping Stone 4: Develop our Research Plan

- Develop our research question(s)
- Choose methods
- Create research tool(s)

- Humboldt County Middle School
  - Youth wanted to ask their classmates about the cafeteria food and talk with key stakeholders
  - Youth developed a 3-S survey
    - Soup, Sandwiches, Salad
  - Youth developed interview questions and practiced the interview process
Stepping Stone 5: Practice Research Skills

• Learn and practice core research skills
• Develop specialized research skills
• Try out and strengthen our tool

Humboldt County Middle School
• Youth Surveyed
  • Grades 3-8
• Youth interviewed
  • County Office of Education Nutritionist
  • School Principal
  • School Cafeteria Manager

Pacific Union Triple “S” Lunch Survey

Sandwiches
1. Did you know you can order individual sandwiches from our school cafeteria?
   a. □ Yes 😊
   b. □ No 😞

2. Would you ever order an individual sandwich from our school cafeteria?
   a. □ Yes 😊
   b. □ No 😞
   c. □ Maybe 😐
Stepping Stone 6: Conduct Research

• Finalize research plan
• Develop a system to support each other
• Collect data

• Sonoma County High School
• Served 22, 9-11th grade students
• Research question: How do English Learners prefer to practice English during after school?
• Data collection involved surveys of 170 peers.
Stepping Stone 7: Analyze our Data

• Figure out what we learned
• Develop findings and recommendations
• Connect our work to larger contexts

• Sonoma site found that English Learners preferred to learn informally, by socializing with peers.
• The cohort recommended a formalized afterschool club be formed to meet every other week to talk in English about movies, music, and other topics.
Stepping Stone 8: Create and Share Final Product

• Identify goals and strategies to share our work
• Create final product/report
• Organize presentations
• Reflect and celebrate

• Sonoma – decided to test their model in year 2.
• Plan to present both their original findings and data on their tested model to administrators in spring 2020.
Stepping Stone 9: Take Action

• Identify goals to create change
• Choose action strategies
• Create and implement action plan

Youth reflection Sonoma:
*What I’ve learned from this, is kind of – what it’s like to have more confidence in my classmates so I learned some things from them that I didn’t know.*
One piece of advice I would give myself is to get the best information possible, since we are not the only ones trying to learn English and there are people who have already been through this, and they have achieved it with effort, and because of that is the survey. And it is better to do this survey with people who have learned than with those who have not, than with those who already know how to talk.
Year 2: The Road Ahead

Expanding to five sites – continuing research on YPAR
Resources

• http://yparhub.berkeley.edu/ 

• https://regionalchange.ucdavis.edu/publication/moving-serving-youth-engaging-youth 

• https://education.ucdavis.edu/center-community-and-citizen-science