

Lessons from Building a Legacy in Engineering: Developing Projects WITH Community Members

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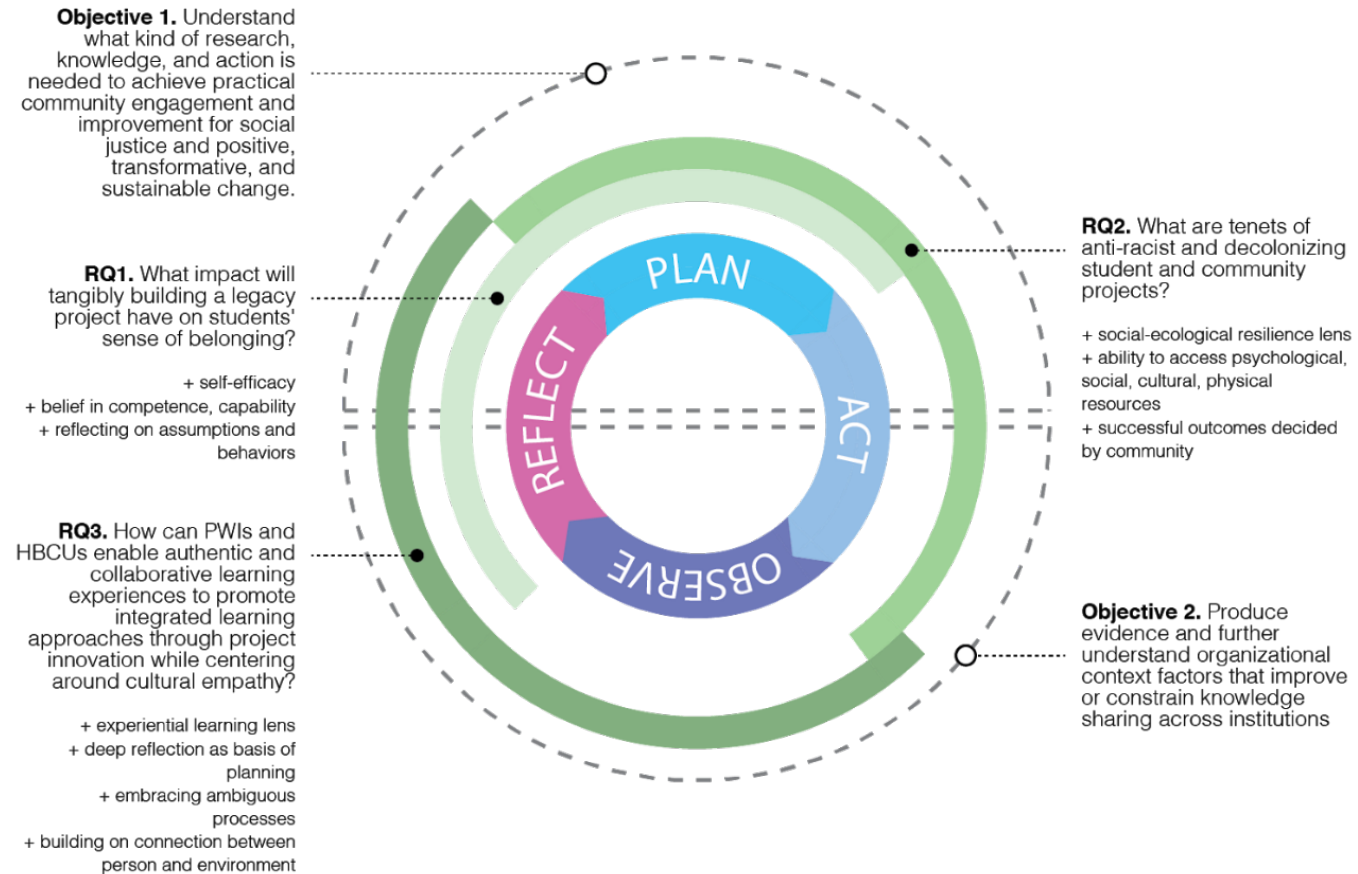
Engineering & Applied Science
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Building a Legacy In Engineering

- NSF Grant #2142149
- Hypothesis: *Inter-institution approach to educational transformation, one centered on democratizing the practice of innovation across institutional boundaries, will effectively prepare next generation innovators and engineers to address systemic and institutional racism and whiteness within STEM by challenging educational norms in higher education.*



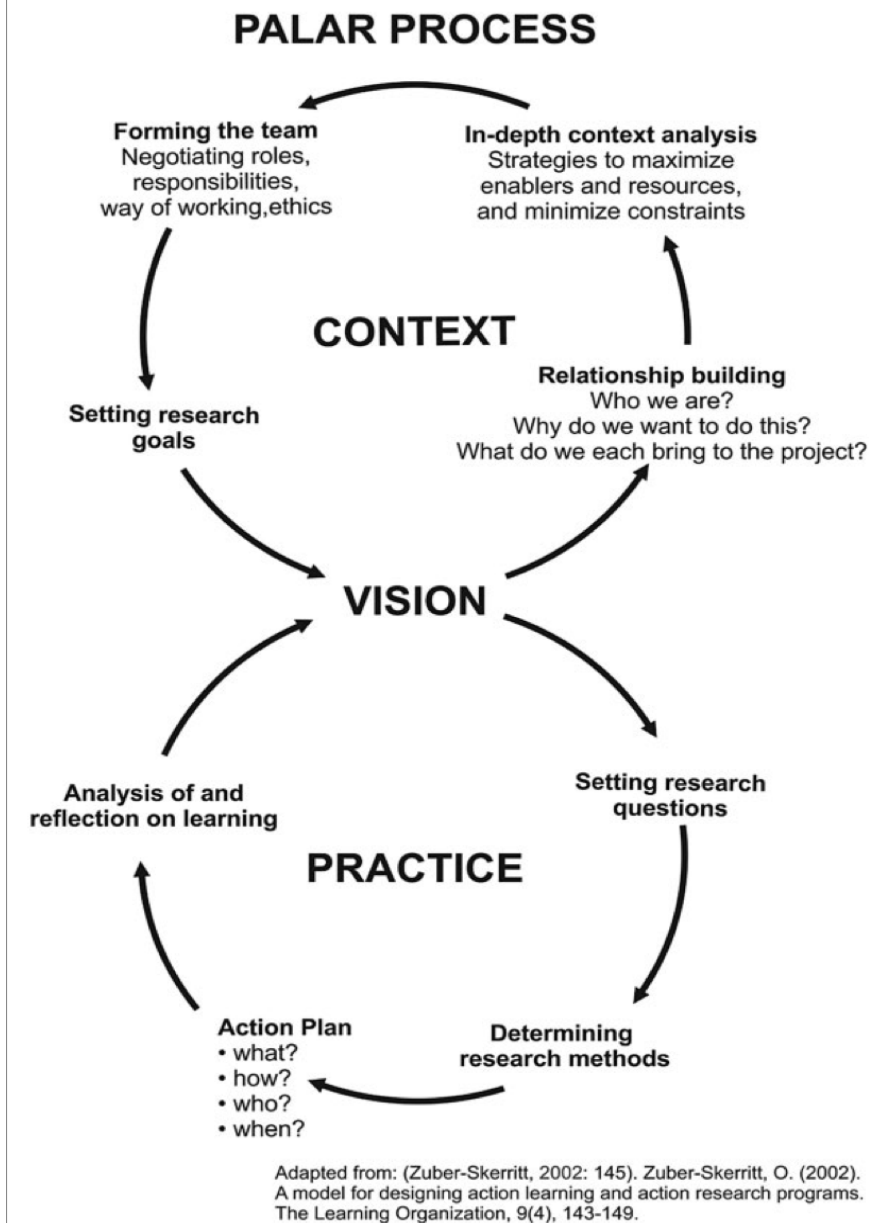
Building Legacy in Engineering Objectives and Questions through PALAR stages



PALAR Framework

Participatory Action Learning and Action Research

- Project- and process-based paradigm and theory of learning
- Regular reflection and reevaluation
- Faculty researchers serve primarily as guidance instead of authority



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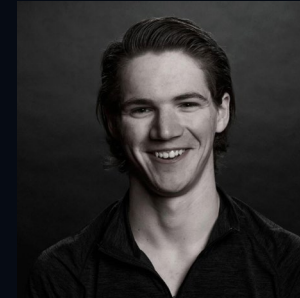
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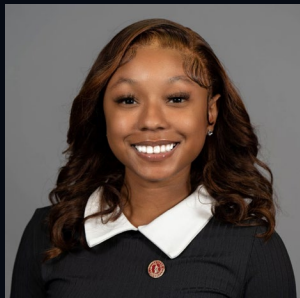
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Lessons Learned: Use of PALAR

- **PI:** *The PALAR model offers an alternative learning paradigm compared with other informal learning systems. PALAR, as a facilitation process, has included, among other processes, needs analysis, reflection diary or journal, mentoring, coaching, and learning by doing and critically reflecting on the self and others. Faculty members facilitate the process through a questioning (Socratic) approach and a system by which the learner decides the direction based on community needs. Faculty members are also process moderators who ensure that the learning for everyone is experiential, gradual, and systematic.*
- **GA:** *One of the more nuanced aspects of working with a PALAR project was the establishment of roles and relationships. As the intermediary between faculty and students, the graduate research assistant has unique access to candid thoughts and interactions. Initially, the student cohort faced confusion, unsure whether to treat the graduate student or the faculty as an authority figure. They are accustomed to traditional classroom organizations and hierarchies, making establishing the students as their leaders difficult.*
- **UR:** *Because the PALAR approach is so different from what we are used to, it initially creates an uncomfortable feeling of "What do we do?". This initial uncertainty leads to a deeper level of questioning of the project's goals, what everyone's strengths are, and what is the most effective way to learn and move forward.*



Lessons Learned: Intentional Community Engagement

- **PI:** *A vital resource that will assist the research team in developing authentic relationships with the community is our primary community partner. The members of the local non-profit have been in the community for over one hundred years. To ensure a successful partnership, the research team will always come from a place of empathy and reverence to communicate with the community.*
- **GA:** *A vital aspect of this project derives from the location. Only half of the project team is present in the area where the tangible aspects will be built. This detail requires much traveling, remote communication, and delegation. Off-location participants must learn and understand the local community and history to contribute and engage. Correspondingly, it is helpful to budget and plan trips to visit the location and speak with relevant community leaders.*
- **CM:** ***This STEM-focused community-engaged project is committed to the community's long-term health, social, economic, and environmental well-being. The rural low-income and underserved communities are open to the students creating and designing value-added products to share the ways of knowing and doing things that will improve their long-term health and well-being.***



Lessons Learned: Genuine Inter-institutional Relationships

- **PI:** *We are cognizant of equitably distributing not only the work of the project but also various forms of power in the project between participants from both schools. Finally, equitable redistribution of power in this project will be a core segment of our evaluation of project success and an anticipated theme of focus in our publications.*
- **GA:** *Time spent in full company is vital in establishing meaningful relationships. Group activities that are seemingly mundane, like icebreakers and team-building exercises, are vital in identifying common ground and building mutual respect. It is also essential to establish relationships between the project cohort and community members rather than just among participating students.*
- **UR:** *As with any collaborative effort, accountability is crucial. By doing individual reflection work to identify biases and showing a willingness to engage in genuine conversation with peers, students communicate to each other that they can be trusted to bring their ideas and understand the bias and privilege behind them.*
- **CM:** *The opportunity to share the vision with two (2) higher learning institutions and participate in all critical phases of the education transformation will be an inspiring and enlightening partnership.*





Next Steps

Investing Time to Outline Roles and Responsibilities

- Community Members True Involvement
- Ongoing Perspectives from UG Students

