

Examining community of practice formation within a new informal art and physics program

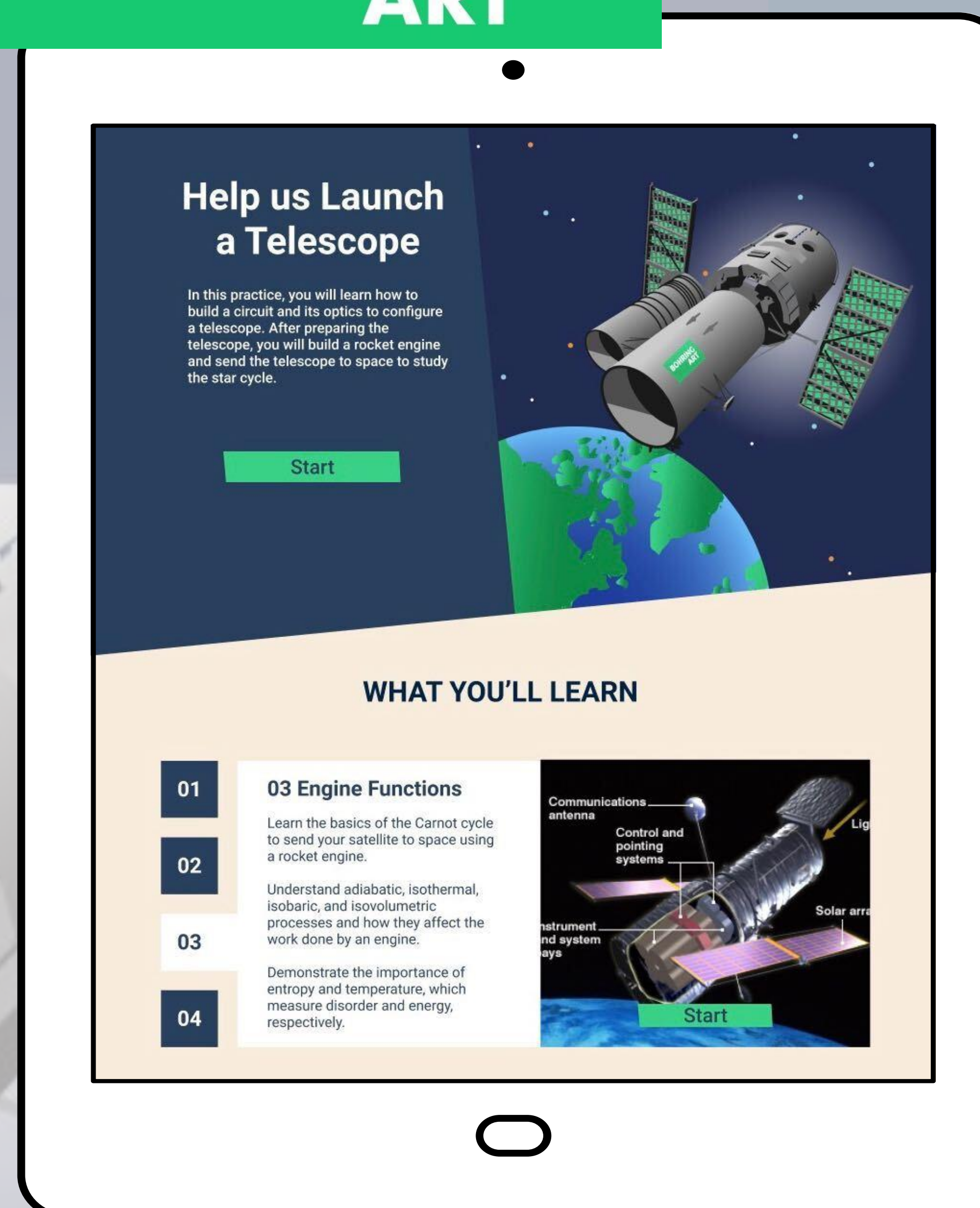
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Project Overview

- A physics postdoc research secured funding through Science Gallery Detroit to contribute to the Future Present exhibition
- Physics postdoc partners with graphic design faculty member to conceptualize the project
- 4 undergraduate students (2 majoring in physics, and 2 in graphic design) are hired to work with the postdoc and faculty member for 10 weeks over the summer
- Due to the COVID-19 pandemic, the project team met virtually and decided to contribute to the exhibition with a website (BohringArt.com) that would aesthetically teach physics concepts
- Throughout this project, a physics graduate student collected data from the students and facilitators to examine if and how a community of practice formed within this project

Research Questions: To what extent did a community of practice form throughout the duration of the Bohring Art project? What impact did this interdisciplinary experience have on project participants' identity development?

BOHRING ART



I think the [website visitors] will really like the website.... I kind of just want to put this science interest in them that'll make them go and want to learn more about it and see that, "Oh, this is really interesting." ... So I hope that ... it'll break the stereotypes off of a lot of science stuff where it's like there's no way that ... you can make learning about this interesting. -physics student

Establishing the domain

And by relationship, I guess, I mean the comfort level, where you're not afraid to say, "No, I actually think that's wrong." Or you're not afraid to like, "What if we did blah, blah, blah?" and give your opinion. -physics student

I think some of the highlights of the summer were kind of learning about the topics that [the physics students] were teaching us and how we can incorporate them in a fun aspect. -design student

Developing the community

One interesting discovery I made was that physics and art are more interconnected than I previously imagined. I realize that while the methodologies and requirements ... are very different, the tasks are really the same. Both physics and art try to capture the essence of the universe in some sort of way, whether it be via equations or drawings of objects. - design student

Engaging in practices

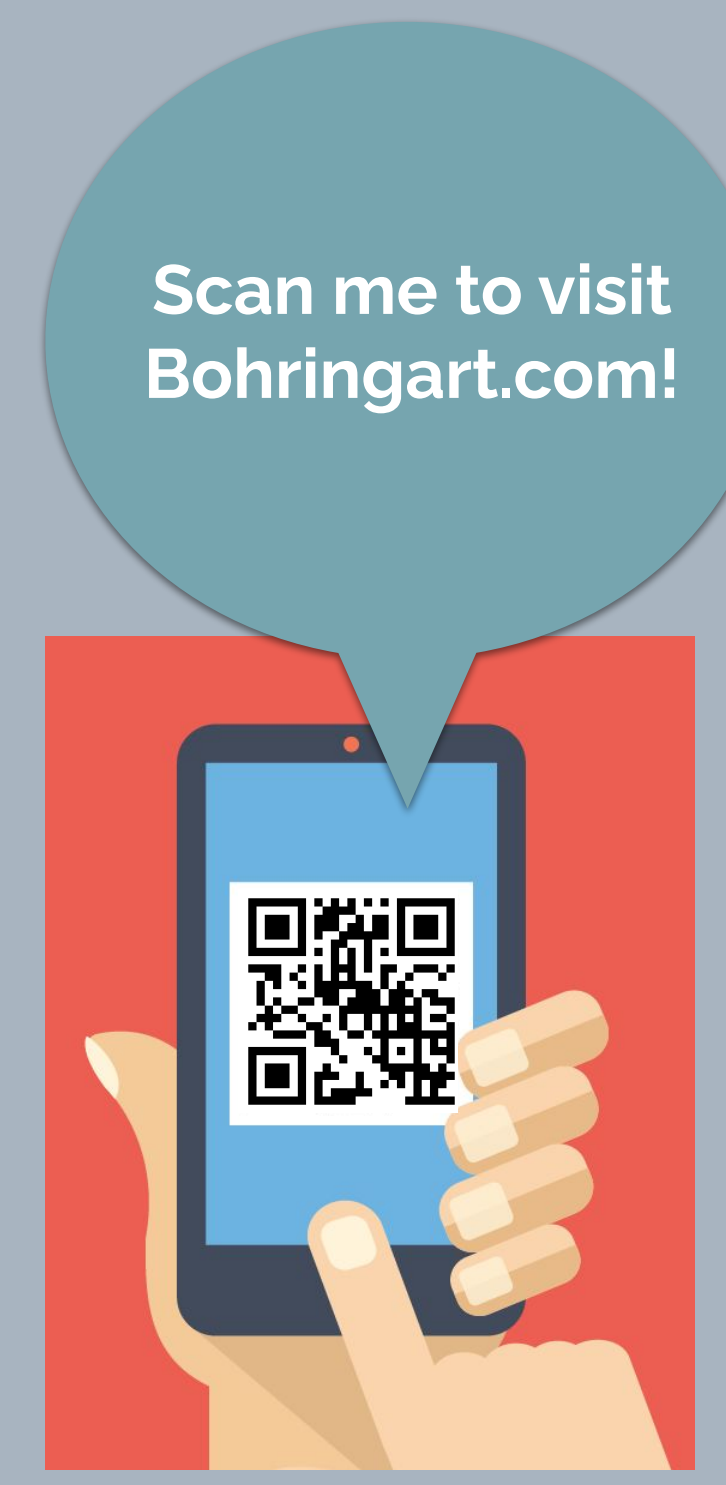
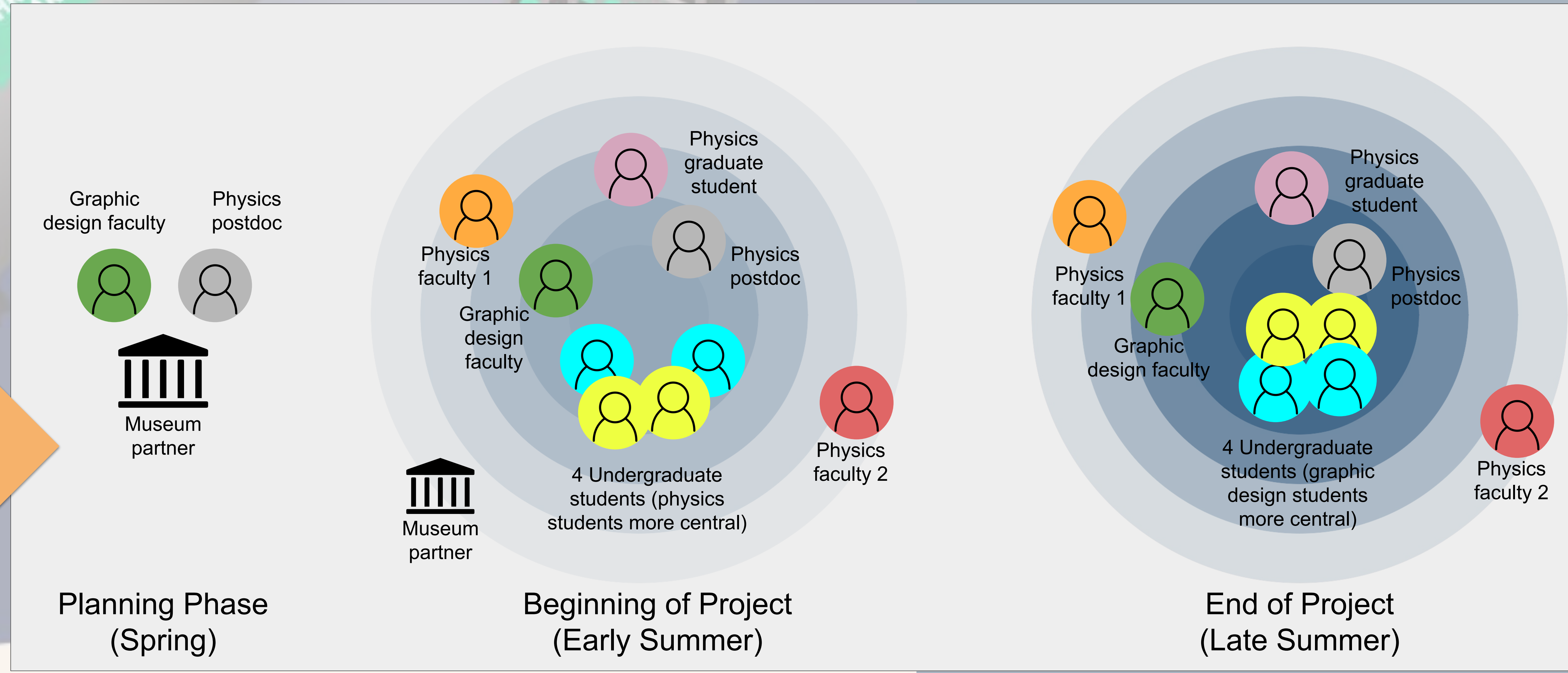
The three essential elements of a community of practice: Domain, Community, and Practices



Data collection

- Beginning and end of Summer interviews
- Short written weekly reflections from each student
- Observations and recordings of all project meetings
- Interview with facilitator/PI of the project
- Reflections from all members of leadership team

Visualization of three phases of the project (from top to bottom): 1) Planning Phase - the graphic design faculty member and the physics postdoc met with the community partner to intentionally design the experience for the students. 2) Beginning of Project - individual's initial roles and degrees of membership are indicated; this early stage of the community is signified by the lighter color background circles. 3) End of Project - the community of practice is more established with the students positioned centrally, the co-developers and supportive members positions more peripherally, and the absence of the museum partner.



Special thanks to tall of those who participating in the Bohrिंग Art project.