OUR PLACE IN RESEARCH: UNDERSTANDING SOCIAL PRODUCTIONS OF

KNOWLEDGE USING DIGITAL SPACES

By

Allison Iafrate

A Project Presented to

The Faculty of California State Polytechnic University, Humboldt

In Partial Fulfillment of the Requirements for the Degree

Master of Arts in English: Applied English Studies

Committee Membership

Dr. Janelle Adsit, Committee Chair

Kimberly Stelter, Committee Member

Dr. Janet Winston, Program Graduate Coordinator

May 2022

ABSTRACT

OUR PLACE IN RESEARCH: UNDERSTANDING SOCIAL PRODUCTIONS OF
KNOWLEDGE USING DIGITAL SPACES

Allison Iafrate

Academic research and research-writing are increasingly being recognized across disciplines as social and collaborative processes, involving many different voices and perspectives in the negotiation of meaning. However, within the context of the university classroom, research is often framed as an individualized process where students learn and perform research skills as single authors. This project approaches this discrepancy with a critical eye towards change by introducing digital spaces as a tool for reframing student perceptions of academic research. A selected review of literature is offered, which touches on topics such as critical research pedagogy, language varieties and language-play, multimodality and genres for "valid" scholarship, social capital and emotional risk-taking, and the importance of incorporating lived experiences in student research spaces. Also introduced is a digital prototype space which was informed by the scholarship reviewed here. This digital space is designed to help us visualize how collaborative approaches might be scaffolded in order to help university students perceive academic research as a social and engaging process involving many voices and interwoven identities.

TABLE OF CONTENTS

TABLE OF FIGURES

INTRODUCTION

In academia, we (scholars, writers, researchers) conceptualize research and academic knowledge as a kind of conversation – one where authors speak to authors, and readers *become* authors in a cyclical generation of ideas. As we interact with each other, we collaboratively produce knowledge that gets forged and reforged with every new contribution. This conversation is often the way scholars visualize their work as they respond to other scholars, synthesize arguments, and perhaps seek out feedback or co-authorship for their own research projects.

The university plays a central role in the development of research. Many of the faculty and staff who work at universities are also scholars and researchers who publish work in a variety of different subjects in addition to their other duties on the university campus. University students are also either beginning or continuing to develop their research skills, and many of the university's disciplines will assess students' abilities based on their success with research practices. Students are given grades (and degrees) based on how well they can write an essay, give a presentation, synthesize scientific findings – all of which will rely on research. It's unlikely that any student will complete their general education and major courses without learning, and being tested on, their ability to design and complete original research projects.

My project takes up the understanding that research is an inherently social activity, and strives to make that sociality more present in the way that all scholars – but especially student scholars – visualize the process of doing academic research. I ask us to

examine our preconceptions of what research looks like – is allowed to look like – and suspend some of those restrictions. I want us to imagine research as a process of social connection where scholars are invited to seek out collaboration and support, embody themselves and their experiences in their academic voice, and use a wide variety of informal and formal language varieties to pursue important work in their fields. The question that will be driving our discussion forward then, is "How might digital spaces help us understand – or make explicit for us – the ways in which we already conduct academic research in informal and deeply social ways?"

One part of that question points to the growing scholarship that supports the idea that research is social and dynamic. Another part relies on the idea of student and scholar perceptions of research, and how those perceptions may not reflect the social interactions essential to many research processes. Lastly, this question asks us to incorporate digital technology so that we can explore how digital spaces might shift perceptions of research away from isolation and towards something a little more collaborative and community-based.

In the chapters that follow, I offer a selected review of scholarship on how digital spaces shape collaboration between professional researchers, some of the ways that university students might benefit from using digital spaces to find research support, and the implications of suggesting that digital spaces should be used to do this work. These selected pieces of dialogue will provide examples and give us new ideas to consider as we examine the potential of online research collaboration. Let me preface this by saying that this discussion is not meant to be comprehensive, but it should raise questions,

generate ideas, and engage in interesting concepts. In addition to writing the chapters of this project, I will also introduce a prototype digital space which I built based on the concepts highlighted in this project. I call the prototype a 'digital space' for particular reasons, as we will see later, but for all intents and purposes, the space is actually a forum. The idea was to create a 'rough draft' version of something that I think would be, well, maybe not revolutionary, but important to how we might use digital technology to show university students that research is social. A forum allows users to talk to one another, either in real time or asynchronously. My hope is that it could allow students to have conversations where they exchange ideas, research topics, resources, and less tangible valuables like validation and encouragement. That experience of social interaction could very well shift their perceptions of what research looks like, how they can find support, and whether it's okay to work with other people as they produce knowledge. I will not be publishing this prototype forum due to the scope of this project, but I hope that it will be reiterated in further research so that it can give that space of research conversation to Cal Poly Humboldt students. I will be discussing the advantages, drawbacks, and purposeful design of this prototype in the section that follows this project's chapters.

Because I will be talking about terms like "research," "collaboration," and "conversation," it seems like a good idea to start with some working definitions for those terms. Here, we will think of *research* as the practice of seeking out ideas, processing them, exploring or experimenting with them, and finally reflecting on those ideas and their significance. It's a process that ultimately generates knowledge and helps people

make sense of ideas. Academic research usually has procedures for "valid" ways to make knowledge, which will look differently depending on the discipline. It will be an important part of my argument to understand that many research practices are deeply collaborative.

John B. Smith describes *collaboration* as a kind of "collective intelligence" where many minds and perspectives merge together to achieve a shared goal. By contrast, he points to cooperation, which he defines as a collection of separate intelligences that interact, but do not combine in the same way that collective ones do (*Collective Intelligence*). This definition of collaboration is somewhat too surreal for me; it makes me picture minds melding together like globs of paint. However, I think that the direction Smith takes is an important one. Collaboration involves more than just working together, doesn't it? It has some intangible *stuff* that electrifies the research process and makes powerful co-construction of knowledge possible. For our working definition, let's consider collaboration to consist of the following ingredients: one or more participants, shared ideas and perspectives, a stance of openness and vulnerability, intellectual support (in terms of labor, resources, or validation), and a negotiation of ideas that works towards a shared goal. What we're describing here is a meaningful relationship between people (in our case researchers) that is founded on respect and a desire to say or create something together.

It's important to note that long-term collaboration is not possible without acknowledging and voicing the place of power in a research relationship. Power is never missing from a negotiation of perspectives, but research can hold special risks for its

participants. I am drawing on the work of Linda Tuhiwai Smith and her book

Decolonizing Methodologies when I say that research, particularly Western academic

research, is built on a foundation of exploitation and oppression. If co-researchers do not

recognize and voice discrepancies of power within their working relationship, then all

members of the team risk some level of harm. Tuhiwai Smith expands on the risks faced

by indigenous researchers and communities, who have been historically treated as the

object of research. Culture, identity, and privilege shape the risks present for each

researcher. Successful long-term collaboration demands that those risks be acknowledged

and confronted. However, Tuhiwai Smith also describes research as an activity of hope

and curiosity, and a search for knowledge for the benefit of all (202). This project seeks

to recognize the violent history behind the word *research*, and hopes to disrupt colonial,

positivist understanding of knowledge in favor of one that, instead, embraces curiosity

and collaboration.

Our final working definition is for the term *conversation.* Conversations are

exactly what we think they are – when we interact with another person(s) by listening,

reflecting on their ideas, and then responding to them. In academia, responses are usually

written and multiple. An author might use one scholar's ideas to respond to ideas from

another, and another. In any case, a kind of conversation takes place around topics.

This definition is important because it helps us distinguish conversation from

collaboration, but it also helps me clarify the goals I have for the digital prototype of this

project. The forum space will be a place of <u>conversation</u> that *could* lead to <u>collaborative</u>

<u>research</u>. I can't claim that this will be a place of collaboration because our working

definition of collaboration outlines ingredients that may not be present in the space. But collaboration has to start somewhere, and a conversation about research interests is as good a place as any.

Literature Review

In writing studies, there is a long-standing conversation around the collaborative nature of writing and research practices. One of the earliest voices in this conversation is Kenneth Bruffee, whose work reframes our concept of writing away from the idea of an individual writer who transcribes their unique thoughts onto paper, and towards the idea of a writer participating in an ongoing conversation of ideas with many people and themselves. The trope of the "lone writer" is in fact an early idea that many scholars in writing studies have worked to interrogate and dismantle. Theories that have resulted from this work include cooperative learning, collaborative writing, and "writing as a social process." These and other waves of thought in writing studies have encouraged the field to consider the historical and cultural contexts behind the idea of the "lone writer," and to deconstruct its naturalness in academia.

In his 1984 article "Collaboration and the 'Conversation of Mankind'" Kenneth Bruffee discusses the idea that even when we create knowledge in the most internal and individual of ways – by thinking to ourselves – we are still organizing our thoughts in a framework that mimics the verbal conversations we have with other people. He argues that all forms of human knowledge-production – even the ones that seem individual – are forms of conversation. Academic research is no different, and contrary to thinking to

ourselves, research is often more explicitly collaborative in its process. Depending on the

field, research practices might include collaborating with lab partners, librarians,

peers/scholars, mentors, students, assistants, colleagues, etc. Research processes will also

likely generate an academic product (an article, a report, a scholarly contribution of some

kind), which joins the existing works and voices that swirl around that topic or discipline.

In the decades following Bruffee's work on the 'Conversation of Mankind,' many

scholars, teachers, and researchers began more and more to use ideas like 'conversation'

and 'collaboration' in their academic work. The emerging focus on how we work

together to produce knowledge in academia introduced new social dimensions to the way

we understand research and writing processes.

> *Here is a short sample of article and book titles to illustrate the interest in*
> *collaboration beginning to blossom in the Humanities and Social Sciences*
> *following Bruffee's work in 1984.*

- "Collaboration and Concepts of Authorship"
- "Writing as Collaboration"
- "Collaboration as Reflexive Dialogue: A Knowing 'Deeper Than Reason'"
- "Collaborative Learning and Composition: Boon or Bane?"
- "A Single Good Mind: Collaboration, Cooperation, and the Writing Self"
- "Toward a Working Definition of Collaborative Writing"

In these and other works we see a recurring emphasis on the social, spatial, and

political ecologies present in writing, research, and scholarship production. However,

despite its increasing popularity, academic 'collaboration' has been critiqued as an

intangible framework for scholarship and pedagogy. In his 2014 article "Collaboration

(in) Theory," William Duffy responds to this increasing focus on the social dimensions of

scholarship by addressing what he sees as an unfortunate inclination in English Writing

Composition (and beyond?) to use amorphous terms like 'collaboration' and 'conversation' without properly defining them. 'Collaboration,' he says, is inadequate for what takes place between co-authors and researchers. Duffy emphasizes the need, not for nebulous terms that describe-but-don't-describe social interactions between writer-researchers, but a careful analysis of what collaboration consists of in each particular network of ecologies and constraints. Despite his critique of these terms, Duffy joins many other scholars in acknowledging that collaboration is, and perhaps always has been, a key component of writing and researching practices.

Joining Duffy and Bruffee in social critiques of writing practices are Lisa Ede and Andrea Lunsford, who discuss in their book *Singular Texts/Plural Authors* the need to confront and interrogate the construction of singular authorship in academia. Using interviews as snapshots, Lunsford and Ede try to understand authorship as it is conceptualized in different disciplines, and to interrogate the role(s) that collaboration plays in academic writing. They confront the unnaturalness of the "lone writer" and establish that collaboration – in its many forms – can always be found in academic writing. Ede and Lunsford introduce the composition classroom as a site of struggle where theory meets practice, and call for more consideration into how the classroom might help students and scholars challenge dominant perceptions of authorship.

In her book chapter "Collaborative Pedagogy," Rebecca Moore Howard responds directly to this call for research by discussing different ways to introduce collaborative writing into the composition classroom. Her work highlights perceptions of the "singular author" in writing studies, and in particular, the academic dispute between

"collaboration" and "plagiarism." Howard explores classroom practices based on collaborative learning, including large and small group discussions. She explains that these practices can do work to decenter the classroom's hierarchical structure, and make students active participants rather than just performers. She also makes a point of acknowledging that writing instructors must balance their infusion of collaborative pedagogy with an awareness of academia's view on plagiarism.

The conversation outlined here is an important one because the persistence of the "lone writer" trope has many negative effects on both scholars and students of academia. If we think of existing scholars as geniuses who are just writing down the revolutionary ideas that come to them, then writers and researchers who are already disadvantaged by the academic system may find it even harder to visualize themselves doing that work. It becomes a question of ability – of natural talent. Students who are just learning to write and produce research are discouraged from trying to become scholars, because scholarship seems like less of a process of becoming, and more of an evaluation that says "you either have it or you don't." This significantly narrows the diversity of voices able to contribute to academic knowledge, it hinders students' ability to see themselves as scholars and researchers, and it also denies the multiple voices that are always in dialogue with one another in writing and researching processes.

As the authors here point out, there is more work to be done in supporting students as researchers and collaborators. This project seeks to contribute to this work by identifying a space where the sociality of writing and researching can be put into practice, and by developing a digital prototype forum that can help students connect and share

their research in conversation with one another. In order to do this, I acknowledge that concepts like collaborative pedagogy and "writing as a social process" come from particular conversations in writing studies, but choose to orient myself and this project in an outward-facing stance that recognizes the different ways that other disciplines come to this conversation as well. The way that collaboration interacts with academic research writing is a topic of increasing interest across many subject areas, though each discipline may call it something different based on unique systems of understanding. By incorporating an interdisciplinary lens, I hope to understand the relationship between research and collaboration more broadly.

In many academic fields, multi-authored research articles are on the rise while single-authored articles are declining in number (Huang; Yu et al.; Stokols; Wuchty et al.). Within and beyond the boundaries of academia, studies also continue to reveal the benefits of collaborative research. For instance, research collaboration can lead to better visibility, more accessible funding opportunities, increased productivity, and higher-quality work (Lee and Bozeman; Wuchty et al.; Abramo et al.; Cronin et al.; Youtie et al.). The increase in visibility that high-profile collaborative projects receive also leads to an increase in scrutiny and the speed with which they are reported for shaky or fraudulent findings (Furman et al.; Tang et al.), which may make them more credible in the conclusions they draw. Researchers who collaboratively share knowledge with one another are more likely to create an environment of increased research effectiveness (Adams et al.), and scientific productivity is likely to draw direct benefits from academic

collaboration (a finding which some authors believe should be given more attention on institutional and national levels) (Landry et al.; Lee and Bozeman).

In their 2020 article "Beyond Research Method to Research Collaboration," Louise Young and Per Vagn Freytag assert that researchers frequently collaborate with practitioners and other nonexpert audiences in order to produce effective and meaningful research. They describe collaboration as a necessary and enriching characteristic of research, but they are also careful to point out that not all situations of collaboration are successful or beneficial for the participants. Young and Freytag illustrate research collaboration as a risky business, full of challenges including friction between researchers, conflicting discipline-specific paradigms, differing priorities or goals, and shifting research designs.

Marco Tortoriello et al. elaborate on these challenges by studying the communication across cultural or intellectual barriers in what they call 'transfer of knowledge' within research groups. They focus on the idea that in order to collaborate, researchers may find themselves trying to transfer knowledge from their own field to another one. The specialized language that eases collaboration *within* a group will likely be one of many challenges in trying to share knowledge *across* multiple groups. Beyond the language researchers use to communicate with one another, other difficulties lie in transferring knowledge across paradigms, purposes, and perspectives in order to produce refreshing and meaningful research ("Bridging the Knowledge Gap").

Gaps in communication may also lead to a term that Li Tang et al. borrow from Social Psychology in their article "Retraction: The 'Other Face' of Research

Collaboration?", called "diffusion of responsibility." When responsibility is diffused within a research team, each researcher may be less likely to take charge of every research activity because they assume someone else will do it. This unclear division of labor leads to holes in the research process, and in some cases, weak or fraudulent findings. Tang et al. set out in their article to ask whether co-authored research was more likely to be retracted after publication, and in what ways the retraction time differed between co-published and individually authored research. Their findings suggest that while the majority of retracted papers *are* multi-authored, this could be due to other factors such as the increased scrutiny high-profile co-authored projects receive. Tang et al. also found that collaborative research is less likely to be scientifically false, and that there could be reason to believe that the increased rate of retraction is due to a heightened sense of responsibility and morality within a collaborative research environment (1698-700).

Within a group of researchers, collective senses of responsibility or morality are paired with many other shared feelings. Or at least, a successful research team *should* share positive feelings. Dana Lindsley et al. discuss the importance of what they call a group's "collective efficacy," which they define as "the group's (or organization's) collective belief that it can successfully perform a specific task" (648). According to Lindsley et al., if a research team's collective efficacy is healthy, it will directly benefit important aspects of the research process such as setting goals, allotting levels of effort for each task, applying analytic strategies, and developing persistence or coping

behaviors. Conversely, if the collective efficacy of the team is poor, then it may lead to significant challenges for the researchers and an overall downward performance spiral.

As scholarship reveals the many advantages and disadvantages of collaborative research, it becomes clear that collaboration is both an enriching and an uncertain enterprise. What is even more clear, however, is that collaborative knowledge-production is gaining traction all over the world as many more multi-authored publications are produced by teams of researchers in *both* academic and nonacademic settings.

In the same way that scholarship continues to expand on the benefits of collaborative research in and out of academia, it also continues to show us that collaborative classroom practices benefit student researchers as well. For instance, pedagogical approaches that allow students to learn concepts and skills collaboratively have been shown to benefit learning outcomes on intellectual, social, and academic levels (Cianciolo et al.; Nolinske and Millis; Hunter et al.). When collaborative pedagogy is used to teach research and research methods, it grounds those concepts that students learn in class, diminishes anxiety about the 'right' way to do research, and brings about meaningful realizations about the social and academic challenges of producing research in dialogue with others (Caulfield and Persell; Macheski et al.). There is also evidence to suggest that collaborative research greatly improves students' overall understanding of research processes (Burke and Cummins; Gafney; Hunter et al.), in addition to giving them the chance to learn-by-doing as they engage in rewarding research practices.

In her 2018 article "'Real Research' or 'Just for a Grade'?", Elizabeth Allan discusses a research methods class where collaboration, she felt, led to several important

learning moments for her students. Allan framed semester-long ethnographic research

projects by organizing her class into student-led research teams. She required them to

participate in the full (albeit condensed) research process of an ethnography, including

research questions, IRB application and approval, collection of data, and presentation of

research findings. Collaboration was integral to the primary research these students

conducted, and Allan points meaningfully to some of the realizations her students voiced

during this process. At the beginning of the semester, Allan reports that many of her

students expressed narrow definitions of research which included objects like textbooks,

computers, and other equipment, but rarely depicted collaboration or dialogue with others

(257-60). Toward the end of the semester, one of her students reflected on her changed

view of research by saying that she "wouldn't have considered talking to someone or [to]

my peers research" because it wouldn't have seemed "valid to use in a paper" (259). At

the end of the semester, students presented their findings to an engaged audience made up

of students, university faculty and staff, and interested community members. Allan

discusses the benefits of this unique moment of conversation between students and their

audience. She suggests that the thoughtful and serious discussion between attendees and

student-presenters fostered a sense of importance – of weight – to their findings, which

may have helped guide student perceptions away from seeing this research as simply "for

a grade," and begin seeing it as the genuine scholarship that it is.

The artificiality of classroom projects often adds tension to collaborative work

because students are acutely aware that behind talk of "real research" lies an invented

game of practice where you must learn the rules, perform your tasks, and earn a grade for

the course. Allan is not alone in her use of collaborative pedagogy to try to change that

understanding of research; it's been suggested that placing students at the center of peer-

driven research sets them up to better understand themselves as real researchers and

positions them as active participants in their own education (Steiner et al.). In a similar

vein to the conclusions Allan draws from her experience, other scholars also suggest that

in order for university students to see their work as "real," it is important to distribute

their findings to an audience beyond the classroom walls (Hersh et al.).

In English studies, the concept of "writing about writing" introduced by Downs

and Wardle's 2004 article "Teaching about Writing" was perhaps one beginning that we

can point to where the discipline began an enduring dialogue about the validity of

undergraduate student research. In their everyday lives, students produce knowledge,

collaborate with others, and involve themselves in ongoing learning cycles. In a research

classroom, students continue to develop their already-present identities as researchers and

scholars who produce "genuine contributive research" in meaningful scholarly

conversations (174). However, although acknowledging the validity of student research is

gaining traction, it is still an underrepresented conversation in some circles of scholarship

(Purdy and Walker 23).

The Master-Apprentice classroom research culture is being importantly upended

by creative collaborative approaches like the one discussed in Lenore McWey et al.'s

article, "Cooperative Learning through Collaborative Faculty-Student Research Teams."

McWey et al. explore how one graduate program re-envisioned their research culture by

encouraging graduate students and faculty to work as co-authors on research projects. As

a requirement of the program, graduate students were asked to choose from a selection of research project descriptions which were of genuine interest to different faculty members. The faculty researchers were either already working on these projects, or they were interested in pursuing them. The resulting self-selected student-faculty research teams would work collaboratively at every stage of the research process – from developing research questions and reviewing the literature, to drafting chapters of the final product together. McWey et al. suggest that collaborative research courses like these allow students to fully realize research methods through practice, and establish direct connections between the work students do and the "real" work conducted by researchers in academia.

As instructors embrace collaborative pedagogies, scholarship continues to discuss the advantages that this approach offers to both teachers and students of research methods. However, collaborative pedagogy is not an easy solution to the challenges of teaching research concepts, and many scholars discuss the drawbacks they have noticed or experienced when introducing such approaches into the classroom. For instance, issues with group dynamics often reveal themselves within student research teams, particularly if the students were not given the choice of who they work with on a project (Delucchi 246). Student research groups may also turn to hostility where discrepancies in labor cause some members to do noticeably more work than others (Longmore et al.). Most of the negative implications of collaborative student research may be due to the nature of the classroom itself, where individual achievement and reward is still at the forefront of any collaborative exchange.

Summary

The potential impact of collaborative research is an expansive conversation, drawing in voices across disciplines and subject areas. The ongoing scholarship being produced on this topic tells us that in both academic and nonacademic settings, collaborative research is seeing an overwhelming upward trend. Although collaboration is not always successful, most scholars agree that its potential benefits outweigh those risks. Collaborative pedagogy is not far behind this conversation, and is similarly seeing an upward trend in the university. The literature suggests that student collaboration is crucial to teaching research methods courses – it can lower the stakes of research learning, make visible the conversation that takes place in research processes, and intervene in the misunderstanding that student research isn't "real" or genuine scholarship. However, the nature of the classroom may undermine the positive outcomes of collaborative student work.

Kenneth Bruffee's work on the collaborative nature of knowledge-production led him to critique the university as a structure and its attitude toward learning. He argues that the orientations it fosters in students – through individual homework, projects, tests, grading systems, even the way that it views plagiarism – goes against the natural way that we produce knowledge outside of the university. Not only are students discouraged from collaborating with other people, but their minds are being conditioned to never even consider collaborating in academic contexts. Why would you think about asking a classmate or another student for help on a project, if that conversation feels like

"cheating"? And yet, students are also told that scholarship and research are a conversation – that when you do research, your work is located within this abstract, nebulous 'conversation' between scholars.

This disparity between what students are told to imagine, and what they see and feel in their academic realities is more than just a misconception located in the classroom, Bruffee argues. It has far-reaching consequences for students as they venture outward from the university and are expected to collaborate and negotiate meaning at a variety of different levels – professionally, personally, and academically. In their careers as professionals, they will almost certainly be expected to perform social nuances as they work in team environments, supervisorial positions, or situations where they communicate with the public. No matter where their careers take them, they will need to understand that knowledge and meaning are constructed socially through tension, interpretation, and integration of multiple perspectives. If their careers take them into deeper pools of academic scholarship, students will similarly experience what it means to produce knowledge in conversation with many voices both existing and emergent.

I am not suggesting that we restructure the whole university so that it centers on collaboration; I leave that to experts like Jaime Lester and Adrianna Kezar whose book, *Organizing Higher Education for Collaboration: A Guide for Campus Leaders*, systematically entails how and why we should do exactly that. However, I do think that there are important reasons to align what we know about research, with the way students are invited to think about research. If the structure of the university classroom intervenes in this perspective shift, then we should aim our efforts beyond the classroom.

Few scholars have looked at the ways in which online spaces recreate, influence, and extend the social nature of academic research and scholarship. How might we (scholars, students, researchers) use digital spaces to think more explicitly about the multiple perspectives and voices *always* present within our work? In the following chapters, I will start by discussing how digital spaces might make the sociality of research more visible. Then, I will move to explore what digital spaces can do for university students as they navigate what it means to do research and construct academic knowledge. I will examine the benefits and the limitations of using digital spaces for this work and consider how to design a digital tool to be an energizing and respectful researching space. Ultimately, the goal of this project is to create a prototype digital forum which will help Cal Poly Humboldt students see and feel the conversation inherent in research. What I am calling for is an attitude shift that asks us to understand that, despite the way it is framed within the university, research is a social process that gains vibrancy and importance from collaboration. I advocate for digital spaces that invite a collaborative level of participation among students, and at the same time *name* this collaboration as a legitimate research practice.

A Look Forward

Chapter 1: Digital Spaces and Knowledge Production

In Chapter 1, we will begin by laying a foundation for our understanding of the term "digital spaces." Then, we will introduce Twitter as an example of a digital space and use it to illustrate how scholars and researchers use digital spaces to produce knowledge together. Lastly, we will discuss some of the ways in which a similar digital researching space might be beneficial to university students as they develop their identities as scholars and researchers.

Chapter 2: Digital Spaces and Demystification

In Chapter 2, we will look at how collaborative digital spaces might be used to demystify the research process for students. We will discuss questions like "What does research look like?" and "Who conducts research and how?" We will use this discussion to argue that digital spaces can make research processes more visible for new scholars, and introduce them to the idea that research is made up of social and informal practices.

Chapter 3: Codes and Modes

In Chapter 3, we will discuss the ways in which collaborative digital spaces invite multiple language varieties in the production of meaningful research, and how that invitation might benefit students as they engage with each other and express their ideas in a variety of ways. We will also link language varieties to identity development, and point to the ways in which language-play in research spaces importantly disrupts dominant academic narratives.

Chapter 4: Reflections and Digital Realities

In Chapter 4, we will explore the implications of suggesting that digital spaces can be used to do transformative work at the university level, as well as the limitations of those spaces when we consider that they are rooted in inequitable social realities.

Discussion of This Project's Digital Prototype Space

In the Discussion section, I will introduce the digital prototype space that I created for Cal Poly Humboldt students, and discuss the strategies I considered while designing it. This will include talking explicitly about my own motivations and intentions for the space, whether and to what extent the space should be associated with the university, how discussions should be framed in order to invite meaningful collaboration, how to use visual rhetoric to balance informality with scholarly value, and how to incorporate many different modes that students can use to communicate their ideas. This section will act as a blueprint for future research, and take this project one step further by illustrating what a digital student research space might look like in practice.

Narrative

In the Narrative section, I will talk through the story of how I came to this project as a person, a student, and a scholar. I will use this section to be transparent about my positionality and how it affected the orientations I brought to this project, and also to outline the tense and invisible work of planning and completing a project of this size.

CHAPTER 1: DIGITAL SPACES AND KNOWLEDGE PRODUCTION

Scholars use many terms to describe websites that invite engagement between users. Some of these terms include Web 2.0, user-centered platforms, new media, and social networking sites (SNSs). All of these terms function differently within different communities, and have unique histories and reasons for their naming. Beneath those nuances however, they all describe online places like blogs, wikis, forums, social media websites, comment sections, and photo- or video-sharing platforms like YouTube or Flickr. In these digital spaces, rather than passively absorb information, users are invited to dynamically interact with the site and with one another.

With so many terms to choose from to describe these online environments, I want to voice my reasons for calling anything a "digital space." The first half of this term (the "digital" half) means that we're talking about objects, information, or platforms that are accessed through computing/electronic technology and the internet. If you access it through a screen, it's likely digital.

The second half of the term (the "spaces" half) is a little trickier to describe. What "spaces" points to is people being able to use digital technology to create virtual moments of social engagement. I could use terms like "digital environment," "digital site," or "digital platform." But I choose to use "digital space" because there is something special about sharing a space with someone. It implies to me a kind of quiet. A moment of respect and listening. Not only are we in this space together, but we can give each other the space to speak and be heard. Space is also a night sky full of stars and planets. It's a

place of possibilities and things to explore. I choose to use the term "digital spaces" because I think it speaks dynamically and optimistically to the idea of connecting with people and sharing space with them virtually.

I will point out preemptively that the idea of "digital spaces" sounds very abstract, and there is something to be said about the dangers of applying abstract metaphors to technology. Because after all, none of us can ever really be inside of a virtual "space"; it's just bits of data on a screen. But physical metaphors of place-ness have been coined side-by-side with digital developments as far back as the emergence of the world wide web. I'm thinking of the term "website" – a "site" is the same thing as a "place" or a "space" or an "environment" in that it uses a physical metaphor to describe something virtual.

I want to extend the definition we're creating here by saying that "collaborative digital spaces" are digital spaces that, well, invite collaboration. They create opportunities for sharing, exploration, excitement, connection, and room to speak and listen. *Examples of collaborative digital spaces include Twitter, Facebook, Instagram, LinkedIn, YouTube, and most other websites or platforms that allow you to exchange ideas with other people.*

In this chapter, we will explore how collaborative digital spaces are being used by scholars and researchers to negotiate academic knowledge. Then, we will discuss how this relates to student-researchers in the university and how and why they might benefit from using digital spaces in a similar way. We will conclude with a brief look at how students' unique intersectional experiences in the university might lead them to using digital spaces as places of connection and resistance.

Twitter and Collaborative Research

Researchers use collaborative digital spaces in their personal lives by using social media to connect with people and share content, but they also use these digital spaces in their academic lives. In a 2012 study titled "Higher Education Scholars' Participation and Practices on Twitter," George Veletsianos sought to understand the ways that scholars use online social networks for professional (teaching- or research-oriented) purposes. He used the Twitter activity of 45 scholars to determine what kind of practices scholars engage in within these spaces. What he found is that Twitter was providing a unique space of fluidity, connection, and professional discussion between scholars. We will take a closer look at Veletsianos' work as an example of how scholars use Twitter to participate in research socially, and as an introduction to the idea that online collaboration might be changing the way that research is traditionally carried out in academia.

Veletsianos qualitatively coded 100 tweets from each of the 45 scholars he selected for his study. The scholars were chosen based on the following criteria: having a PhD, being employed at a higher education institution in either a teaching or a researching role, having a public Twitter profile, regularly posting on Twitter at least once per week, and having at least 2000 followers during the time of the study (340). From the corpus of 4500 tweets, Veletsianos reports that 7 themes of scholarly activity emerged: 1.) *Information, resource, and media sharing*; 2.) *Expanding learning opportunities beyond the confines of the classroom*; 3.) *Requesting assistance and offering suggestions*; 4.) *Living social public lives*; 5.) *Digital identity and impression*

management; 6.) *Connecting and networking*; and 7.) *Presence across multiple online social networks* (342). Of these themes, I am most interested in numbers 1, 3, 4, and 6. How did the scholars in this study use Twitter as a space for sharing information and resources, giving and requesting support, living social public lives, and connecting with one another?

Veletsianos defines theme one—*information, resource, and media sharing*—as "sharing information, media, and other resources related to their profession" (342). Examples he provides of this are:

> **[Speaker] is discussing education and technology at [institution name]: [URL]**

> **This study examines how best to identify [social science topic]: [URL]**

Although these moments of sharing were often centered on things that are useful in the scholar's profession, Veletsianos points out that there were also moments where scholars shared resources from their non-professional lives:

> **Listening to these songs tonight: [URL to blog entry listing songs]**

Occasionally scholars used hashtags when they shared resources, intentionally including specific followers or specific groups of people. Other times, they simply forwarded information (retweeted) to specific people, drawing that person's attention to whatever the resource discusses. Veletsianos reports that the "practice of sharing information, media, and resources was the dominant activity of scholars' participation, coded as such in 39% of the data sample" (342).

Theme three—*requesting assistance and offering suggestions*—is defined in

Veletsianos' study as "asking for and providing assistance/suggestions to others" (342).

An example of asking for or providing suggestions could look something like:

> **I am writing a paper on [topic]. If you have knowledge of [topic] I would be grateful for your suggestions.**
>
> **@user: Here is an example [URL] I can also send my course schedule if you need it.**

These tweets often led to an exchange of resources or discussions where scholars offered

ideas they've thought about or read from other works. These requests and subsequent

discussions also functioned as a signal to others that a particular scholar is professionally

interested in these areas of research (343). These moments of inquiry and sharing are of

interest to our discussion of collaborative digital spaces particularly because they mark

the opening of a conversation that may lead to more in-depth collaborative exchanges

later on.

Veletsianos describes theme four—*living social public lives*—as "inform[ing]

others of the sender's current activities, intentions, likes and dislikes, creating

opportunities to explore shared interests, experiences, goals, mindsets, and life

dispositions/aspirations" (342). Here's an example of a tweet that does this:

> **Heading to [city name]: [URL to map pinpointing current location]**

Veletsianos explains that these kinds of updates and day-to-day tweets that deal with

personal interests/activities act as important moments of social connection which aren't

necessarily focused on professional interests. They can represent other aspects of these

scholars' lives and create openings for new conversations. Veletsianos reports that all

participants in this study engaged in these social tweets, and "of the 4500 tweets analysed, 22.7% were responses to one or more individuals and 19.2% were contributions intended for individuals sharing a common interest (i.e. tweets tagged with a specific hashtag)," meaning that there were small conversations resulting in these moments of casual connection (344).

Theme six—*connecting and networking*—included tweets where scholars were "seeking to connect and network with others, while also acting as 'connectors' between individuals" (342). An example tweet of this theme might look like this:

Visit colleague's new blog and leave her a comment [URL].

Veletsianos suggests that this theme differs from the happenstance connections of the other themes. In other instances, connections might be made because of a shared interest or a new and interesting resource to discuss, but tweets coded as—*connecting and networking*—intentionally sought to connect and network with other scholars, or intended to create connections between scholars (like in the example above where the author seeks to help their colleague establish connections). This social activity makes for a different but important type of interaction between scholars as they broaden their professional circles and seek helpful resources (344-45).

In this study, Veletsianos found that these scholar-participants use Twitter to engage in a number of professionally-oriented interactions with one another, including seeking out and sharing resources, having conversations, sharing their personal and professional interests, and making important connections with each other. Veletsianos points out that the way that scholars used this platform varied dynamically depending on

who they were speaking with and what their goals were for that interaction. Many instances of connection between scholars resulted in short conversations where information and ideas were briefly exchanged, but some of them sparked longer and more serious discussions on academic topics. Veletsianos concludes by saying that although digital spaces like Twitter were not originally designed for facilitating academic knowledge-production, they have been co-opted by scholars to do just that. Scholars make use of these sites by using them to connect to individuals across physical distance and across specific communities of interest. These connections allow scholars to give and receive research support, and engage in casual conversations that help to develop knowledge in a particular field.

Veletsianos points out that although digital spaces may be changing the way that knowledge is created and shared in academia, and although scholars may find immense value in this process, these online practices may still conflict with traditionally valued ways of producing scholarship (345). The risks associated with using digital or multimodal approaches in scholarship are unfortunately still extreme, particularly in situations involving tenure or promotion in academia. Negative repercussions resulting from nontraditional research practices are also disproportionately experienced by marginalized groups including scholars of color, LGBTQ+ scholars, and scholars with disabilities. However, as Veletsianos points out, the visibility and prolific nature of creative collaboration in digital spaces may signal a change in the wind. Veletsianos concludes by calling for more research into how the landscape of scholarship and education may be shifting as scholars digitally negotiate and redefine scholarly practices.

This study is just a small look into a much larger phenomenon of conversation and collaboration among scholars in online spaces. It does not represent how all, or even most, of the scholars in academia engage in professional practices online; however, it does give us an idea of how some scholars use Twitter as a space of sharing, networking, support, and investigation.

Sugimoto et al. provide a more recent and more comprehensive review of this topic in their article "Scholarly Use of Social Media and Altmetrics: A Review of the Literature." The authors here trace other studies that work to empirically capture the role of informal online spaces in the professional lives of scholars and researchers. Their findings support Veletsianos' work in that collaborative digital spaces seem to be inviting an expansion and informalization of scholarly discussion. Sugimoto et al. suggest that this trend allows for these discussions to reach outside of and across academic communities, thereby broadening the conversations that take place there, as well as the diversity of voices able to contribute to those conversations. The authors here offer a caveat in that many of the studies done on this social researching phenomenon are quite different from one another. Many of them do not share procedures, sample size, or academic fields. So, it's difficult to draw too many generalizing details from them. They conclude by pointing to time as our only way to understand how long these social researching practices will persist, and whether they will become central to the production of academic discourse.

For the time being, however, it's difficult to ignore the real conversations being made between scholars in digital spaces. The interactions we see taking place here mark

an important extension to our conversation in the Introduction where we established that research and scholarship are social endeavors. Academic research has always traditionally incorporated conversation into its process – a fact that is gathering increasing awareness as more multi-authored research continues to be published. The conversations taking place on sites like Twitter are another iteration of this collaborative knowledge-making process. Although, as Veletsianos and Sugimoto et al. point out, digital spaces may also be fundamentally changing the way that this collaboration is played out.

Many of the exchanges that take place online between scholars are the kind usually reserved for conferences and special events. Before digital spaces like these became commonplace, it was a rare thing to have scholars from many different fields all gathered in the same spot. Even scholars within the same field may not have found many opportunities to network and lay the foundations of collaboration. Digital spaces enable scholars to efficiently and inexpensively speak to one another over large distances and across time zones or conflicting schedules. They are also a means of keeping in touch with those that you connect with, making it easy to maintain friendships and professional partnerships over long periods of time.

Digital spaces also allow for a kind of casual communication that actually may not be possible in more traditional environments like conferences. There isn't always room in an academic setting for informal conversations – more often, scholars might feel pressure to perform a certain level of intelligence in front of their peers. Online spaces like Twitter are pretty special in this regard. They are already designed and used in very

informal ways. Most people would consider Twitter to be a site of easy chit-chat and shower thoughts, not meaningful conversations. Those expectations set the space up for a low-stakes environment where you might not feel the same pressure to perform as you would in a conference, even if this Twitter space has been appropriated for academic purposes.

Informal Student Research Spaces

So, why might we want to extend this online academic engagement to university students? Obviously not all of the interactions we saw happening between scholars will be useful to students. The university is a goal-oriented environment. Students who come to digital spaces for research support will likely do so because of an assignment. Their goals for the digital space will not include—*living social public lives*—where they engage in low-stakes chit-chat about their day; nor will they include—*connecting and networking*—in an academic field. However, some of the other themes like—*information, resource, and media sharing*—and—*requesting assistance and offering suggestions*—are just as valuable to students as they are to professional scholars. In particular, the idea of having an accessible space to find peer support is something that can do much in relieving the pressure of individualism students might be feeling.

In traditional university settings, students have only a few options available to them if they want to seek research support. One option is seeking support in the classroom, which as we've already briefly discussed, has structural power dimensions that might make that support difficult or impossible for students to find. Another option is

to seek more one-on-one support by approaching faculty. Outside of the classroom, faculty are usually happy to meet with students during their office hours. However, faculty offices carry with them the same structural hierarchy that classrooms do, and can be incredibly intimidating to students. Library research assistance is also an option for students seeking research support, but in a similar way to classrooms and faculty offices, the library can carry over inequitable power dynamics from the larger university institution. Having a digital space where students can share information and resources, and request or offer suggestions to one another fills an important need for students to be able to find support and validation for their research interests.

Digital spaces like Twitter and other social networking sites differ fundamentally from the hierarchical structure of traditional university learning environments. In a digital space, diversity of knowledge and expertise is invited from all participants. Whereas, in a classroom for instance, one voice might be valued more highly than any other (i.e. the instructor's voice). Here, we can make distinctions even between online classroom spaces like Canvas or Blackboard, and a collaborative digital space like Twitter. Canvas and Blackboard preserve that hierarchy of knowledge, and require students to perform their ability to absorb information rather than ask them to use their voice in dialogue with their peers. This is not to say that Canvas and Blackboard couldn't be wrangled into an unnatural shape where they are made to support this dialogue, but the hierarchical structure would still be threaded through any discussions that take place there (especially if those discussions are graded). Collaborative digital spaces can be used to intervene in a philosophical way – to re-envision how learning might take place in the university.

Rather than force students to seek research help in rigidly structured environments, we could use digital spaces to offer a more approachable and social orientation towards researching and making knowledge in the university.

<p align="center">Connection, Support, and Resistance</p>

As many researchers have demonstrated, digital spaces have also been tools of revolution, protest, and dialogue that work to turn hierarchical structures on their head. Social media, for instance, is the largest stage in the world for drawing events and conversations into the public view. In particular, the connectedness and conversation in social media forums enables people to disrupt oppressive social situations including misrepresentations, appropriations, and other racially charged events (see Cutcha Risling Baldy, and Brown and Crutchfield for more on this topic).

In the university, where discrimination and unequal opportunity are built into the institutional framework, students sometimes use social media to help them persevere through their degree programs. One example of this is in the article "Braiding Our (In)Visibility: Native Women Navigating the Doctoral Process Through Social Media" written by coauthors Adrienne Keene, Amanda Tachine, and Christine Nelson. In this work, these native women and scholars talk honestly about the role social media played in their academic lives. They discuss Facebook, Instagram, and Twitter as spaces where they could seek out a solid foundation of community and connection – something that was sorely missing in the university setting. This solid foundation helped them continue pursuing their doctoral studies by allowing them to voice their struggles in the academy,

connect with others who shared similar experiences, and hopefully inspire new generations of native scholars.

This article shifts our discussion of digital spaces and asks that we view them as, yes, spaces where scholars can find important connections and resources, but also spaces of resistance where students can choose to make themselves and their struggles visible to a wider audience. In the case of the digital research space that this project is calling for, the visibility that it can offer students is limited. It wouldn't be the grand stage of social media. The posts that students make there would only be visible to the people who know about the space – most likely other Cal Poly Humboldt students. It also wouldn't be as personal as the Instagram, Facebook, and Twitter spaces described by Keene, Tachine, and Nelson. This forum would be more geared towards academic projects, and talking through research ideas. But that doesn't mean that it can't make a positive influence in students' lives. It could help students make moments of "Oh, I could do something like that?" or "That seems so cool and important! I really like that topic." It could be a place of visibility and inspiration, as well as a place to find resources and support.

In the same way that professional scholars are subject to rigid constraints which dictate the kinds of research and research writing that are considered acceptable to produce in academia, both graduate and undergraduate students are expected to perform specific ways of doing research. Often, this means producing research in relative isolation and writing in formal language that privileges published, written knowledge over other ways of knowing. These prescribed methods don't always connect with (and sometimes may conflict with) students' lived experiences, knowledges, and practices. Digital spaces

can allow students to explore research in informal and social ways without having their personal and intersectional identities compromised by the need to perform strict, academic ways of doing scholarly work.

"Braiding Our (In)Visibility" is an inspiring example of persistence and connection, but it is also one that relies on the expectation that students will do the labor of seeking out a digital space and choosing to use it in a way that counters the hierarchy of knowledge they experience in the university. Students have to realize on their own that digital spaces can be used as outlets and places of connection, and then also seek out those spaces and use them in that way. For the health, wellbeing, and intellectual support of university students (particularly for students of color who experience erasure, invisibility, and hypervisibility on levels not yet acknowledged by the university) it's important to have a digital space that is specifically named as a resource for disruption and connection. I believe that a research space where students can voice their research interests and work in conversation with one another might go a long way towards meeting that ambitious goal.

<div align="center">Summary</div>

Many professional scholars use collaborative digital spaces to develop connections and create original research. These spaces are dynamic and generative, often resulting in valuable conversations and lines of inquiry. In fact, some scholars suggest that the usefulness of digital spaces may redefine how scholarship is produced in academia. Our discussion points out a discrepancy between what we're seeing "real"

researchers do in these spaces (i.e. engage in social and informal dialogue to produce knowledge together), and the limited options that students have when conducting original research. It is important to have a place where students can informally and collaboratively engage in research practices, but it is also important to acknowledge the powerful resistance that such a place can realize. Students who experience harm or discomfort within the university's hierarchical structure have the option of turning to informal digital spaces to alleviate their isolation, make their struggles or victories more visible on their own terms, and connect with others who share similar experiences. Building a digital research space that differs from the online classroom, faculty offices, or university libraries can help students do that vulnerable and important work, while also finding that much-needed connection and academic support from peers.

In this chapter, we used Twitter and other social media sites as examples of collaborative digital spaces, but those don't have to be the only examples we consider. Remember that many, many websites count as collaborative digital spaces, and each will have its own set of advantages and drawbacks. In fact, what kind of digital space to create for students is a decision that should not be taken lightly because, along with advantages and drawbacks, each digital space will leave impressions and constraints on its users. This will be an ongoing point of consideration in this project that we will come back to later when we discuss the digital prototype space I have built.

In the next chapter we will look at how collaborative digital spaces might be used to demystify the research process for students. What does research look like? Who conducts research and how? Digital spaces can make these processes more visible for

new scholars, and introduce them to the idea that research is made up of social and

informal practices.

CHAPTER 2: DIGITAL SPACES AND DEMYSTIFICATION

Before we talk about how digital spaces can help demystify research practices for students, let's start by talking about how research is taught in the university. As a student, my research experience is situated in the Humanities, but I believe that this discussion of research pedagogy extends to other disciplines as well. Traditionally, instructors who teach lower division research classes will teach their students the foundations of research in two complementary ways. First, it's common to start by approaching research conceptually. This gives students an idea of the purpose of academic research and how it contributes to a larger picture of knowledge in academia. After defining what research is and how it contributes to academic knowledge, instructors usually then work on teaching their students specific research skills, like locating resources or narrowing a topic. Basic research skills are an important first step in becoming a competent academic researcher. These two teaching strategies (defining conceptually and teaching skills) might be students' first real introduction to academic research practices. For our purposes, it's important to take a closer look at how this introduction is framed within the classroom, and what perceptions it gives students about how research is practiced and by whom.

When instructors start by defining what research is, they usually position it as a process involving scholarship and metaphorical conversation. All academic research has to involve seeking out what voices and published works already exist on a topic, and then responding to that scholarship in some meaningful way. That response could mean conducting an original study or writing a paper that synthesizes and engages with

published ideas, but whatever it looks like, research will ultimately result in a contribution to this scholarly conversation that is already taking place. So, this idea of conversation – of voices, arguments, speakers, authors – is foundational to conceptually understanding research as a process of making knowledge.

In their *Framework for Information Literacy for Higher Education*, the Association of College and Research Libraries (ACRL) name six core concepts of scholarship and research which are essential learning outcomes for student scholars in higher education. Among those core concepts is a frame called "Scholarship as Conversation." This frame is meant to be explicit in naming the collaborative and discursive nature of research-based scholarship. It's meant to highlight the dialogue that is created as meaning is negotiated, debated, and strengthened through scholarly conversation. "Scholarship as Conversation" is also a move towards reflexivity that invites university students to understand research as a practice of locating a conversation, but also a practice of contributing to it as well.

As instructors transition into teaching research-based skills, they will move away from framing research in terms of conversations and dialogue, and instead focus on individual tasks like using university databases, navigating key terms or boolean search operators, and eventually locating interesting scholarship on a topic. These are, after all, the kinds of skills students will rely on in future courses as they continue to develop original research projects. I should point out that, at least in my experience as a student, these processes of searching, locating, and reading sources are not positioned as social or collaborative. Students might be encouraged to seek help if they run into roadblocks or

can't remember how to find something, but for the most part, they are expected to do these things on their own. Ideas of conversation and dialogue may never reemerge as individual research skills claim the focus of the class; the only exception to this pattern might come during sections of the course that cover citations. Citations are an important part of acknowledging the voices that have come before you as a researcher, and finding an unclaimed place in that conversation where your research can contribute to the knowledge being made. This is a fairly common way to frame what citations are and why they are important in research writing. In composition classrooms in particular, instructors might use tools like John Swales' CARS model and Kenneth Burke's parlor metaphor to situate citations as signals of a larger conversation between scholars. It should be noted however, that instructors in many disciplines also commonly frame citations in isolating terms related to correctness, plagiarism, and expulsion. This view of citations is supported by the university itself and can end up replacing ideas of conversation and sociality with isolation and anxiety.

The problem with the research pedagogy outlined here is that instructors might use frameworks like "Scholarship as Conversation" to explain that research is social, but that distant, nebulous conversation among scholars is difficult for students to see and understand clearly. This is due, in part, to the increased focus on individual tasks as research skills are prioritized towards the latter half of the course. There is also an important contrast between the social conversation that their instructors describe, and the dense, peer-reviewed articles that students read in their classes. Articles are published and

read by students as single works. Despite their intertextuality, they are downloadable, individual pdfs that do not visibly belong to a "conversation."

So, in what ways can we help students more clearly understand the collaborative and discursive nature of research and research writing? This chapter discusses how digital spaces that invite free collaboration between peers can be used to make conversations between scholars more visible, reveal the personal and social dimensions of scholars' lives, and make academic research a more approachable process for student researchers.

Scholarship as (*real*) Conversation

Firstly, as we saw in our Twitter example in Chapter 1, scholars often use digital spaces to talk through ideas and interact with each other. Just seeing those interactions take place can help demystify the sociality of research practices for students. In this case, we are using "demystify" to mean making those ideas of social conversation between scholars explicit and visible, rather than intangible and unclear.

Traditionally, the social practices of academic research take place unnoticed. A researcher might talk about their project with someone in a hallway of their workplace, at home in the kitchen while they put away groceries, or in a phone call with a good friend. The questions and ideas generated from these social moments play an important role in defining, supporting, and challenging knowledge as it's being made. We can look at a digital space like Twitter and *actually see* that conversation taking place. In their use of this platform, researchers visibly occupy a vulnerable intellectual space and generate ideas together with other people.

When those social moments are recorded in a digital space, suddenly it becomes clear that a "scholarly conversation" is an actual conversation between people. It's a whole lot of dialogue and thinking that takes place in different venues, between different kinds of people, and using different varieties of formal and informal language. As researchers increasingly incorporate their academic work into their online social activity, a new kind of "parallel universe" of meta-commentary, collaboration, strategy, and idea generation comes into being. Soon, the digital space is as much a record of research as any stack of hardbound notebooks. This record shows students that the published academic work they find on university databases is not all that goes on in a "scholarly conversation." Digital spaces can help make visible the smaller moments of research dialogue and collaboration that might otherwise go on behind the scenes.

Personal and Social Dimensions of Scholars' Lives

Unfortunately, academic research is still influenced by legacies of objectivity, positivism, and the neutral distance of the researcher. In Chapter 2 of her book *Decolonizing Methodologies*, Linda Tuhiwai Smith suggests that "In research the concept of distance is most important as it implies a neutrality and objectivity . . . Distance is measurable. What it has come to stand for is objectivity, which is not measurable to quite the same extent" (58). Although this rhetoric of objectivity has been interrogated and (at least partially) dismantled, it still has influence over the way that students perceive professional scholars and researchers. If we think of researchers as occupying a space of distance and objectivity, then as individuals they become separated from the communities

and conversations they produce their research within. They become distant figures of all-knowingness, rather than fallible and complex individuals. In this outdated narrative of objective research, scholars who attempt to place themselves in their own bodies or lived experiences will likely have their work dismissed as overly emotional or unreasonably close to the topic of study (for more on how the personal interacts with the academic, see the works of Suzanne Clark; Gesa Kirsch and Joy Ritchie; and Lillian Bridwell-Bowles). In this context, we can see value systems (particularly in STEM fields, but elsewhere in academia as well) lean towards statistics, graphs, and other quantitative measurements in an effort to pretend a rhetorical objectivity. Assumptions of objectivity can lead to an unchallenged privilege of the white patriarchal perspective in academia, and dismiss experiential ways of knowing as either invalid or inferior.

These legacies embedded in academic research mystify the bodies, lives, and biases of researchers, and lead students to see researchers as formal, distant figures rather than people. Digital spaces can be used to display the personal, social, and cultural dimensions that are missing from these traditional perceptions of researchers. As we saw in the Twitter example in Chapter 1, many academics who use collaborative digital spaces in their professional lives engage with them in complicated and intersectional ways. In their recent article, "Academics who Tweet: 'Messy' Identities in Academia," Kylie Budge et al. examine the ways in which academics experience an interconnectedness of personal and professional identities while engaging with Twitter. Budge et al. argue that through their dynamic engagement in this space, scholars challenge dominant narratives of formality and isolation that persist around the idea of

"academic" ways of being and doing. By displaying their multiple identities and socially

engaging with other people as they build their research in online spaces, scholars are

demystifying what they do and how they come to this work. They aren't just distant

intellectuals who publish impressive theories every few months; they are living, thinking

people who develop ideas in conversation with others over time.

<div align="center">Approachable and Attainable Research</div>

If academic research is visibly taking place in conjunction with other tweets and

social engagement, it reveals the very real conversation between scholars that takes place

as their research develops. It also reveals the many dimensions of scholars' lives as they

engage with the digital space in complex social ways. These perceptions rehumanize

academic research, help students identify with scholars, and help students more easily see

themselves in the process of becoming scholars as they develop their research skills. It's

difficult to think of becoming a "real" researcher or scholar if the models you have to go

by seem like faraway fountains of genius. But, if they seem like real people with real

lives, then it's much easier to imagine yourself becoming their peer someday.

As we discussed in Chapter 1, university spaces can be barriers that prevent

students from entering scholarly conversations. The university is full of negatively

charged spaces, both virtual and physical. In this case, what I mean by "negatively

charged" is that these are spaces where student work is judged and graded with finality,

and where there is little-or-no room made for conversation or making mistakes as part of

the research process. This can make students feel highly monitored and evaluated in these

spaces. This pressure to perform prevents students from seeing their research as "real" because it feels like one-time effort for a one-time grade, and it can also make contributing to a "real" scholarly conversation feel intimidating and out of reach. Research being conducted visibly in digital spaces like Twitter shows students a more approachable point of entry.

In their 2003 article "Can Research Methods Ever be Interesting?," Angela Benson and Deborah Blackman explain that in order for students to reflect on research methods and themselves as researchers, it's important for all steps of the learning process to have clear connections to projects or work the students will conduct in the future (54). Although these recommendations refer to how instructors can better teach students research methods in the classroom, I think that we can also use them to think about the ways we can encourage students to make these connections outside of the classroom, where interactions are more genuine and not constrained by grades or other elements of the classroom structure. If students can find moments where their own lives and interests connect with the research they see taking place, then they are more likely to think critically and reflect on what they see. In a digital space, these connections could be between themselves and scholars via shared experiences, or personal connections to research topics and the way that scholars express what they find interesting about them. Regardless of what they look like, those moments of connection are important for students to understand research as approachable, and be able to visualize themselves doing this work.

Using Digital Spaces to Name What We Know

Beyond changing student perceptions of what it means to do research, using digital spaces to make visible the social and informal dimensions of academic research also has the potential to change academia on a larger scale. I'm borrowing from the work of Katrin Weller and Isabella Peters when I ask how this emerging digital academic environment will change the way that academia measures and evaluates scholarly work. With its emphasis on print-published research products, and in many disciplines its narrow definition of scholarly genres, academia both insists upon publishing large quantities of knowledge and constricts that process to a few exclusive modes of doing so. The gatekeeping function of this system is evidenced in the way that certain types of work are valued as "scholarly" contributions, while some are not.

Digital spaces can help make explicit the norms that academia impresses upon writers and researchers. In doing so, they also help challenge those norms and reveal them as artificial and arbitrary constraints. In expanding what we understand as "scholarly," we can explore new ways of creating knowledge together that do not follow traditional, isolated research routines, but still produce ideas that are valid and important. I'm borrowing from Suresh Canagarajah and his introduction to *Literacy as Translingual Practice*, to think of learning in academia as artificially isolated from our other selves, communities, and knowledges. The meaning produced in digital spaces is valid scholarship, but it is also importantly messy and generative. It generates new ideas, spin-offs, and creative directions for a researcher to follow. It fills an essential part of the

research process where conversation produces new and invaluable inquiries. Digital spaces allow us as scholars and researchers to bridge outward from an isolated academia and rediscover emotional, cultural, and communal ways of knowing. They also allow us to connect with other community members to build validation and growth as we continue developing our own scholarly identities.

Linda Adler-Kassner and Elizabeth Wardle in their 2015 book *Naming What We Know: Threshold Concepts of Writing Studies* make a clear argument for why it's important for communities – and especially academic communities – to make explicit their core values and beliefs. "Naming" those values fishes them out of our implicit consciousness and brings them into dialogue with others. Through conversation, we can uncover more about our own communities' deeply held truths, interrogate those truths and whether they should continue to be held, and bridge connections between communities to cultivate richer relationships with each other. For students who are still developing their membership in academic communities, it is essential for deeply held truths to become more tangible because of the high stakes involved. As a student, if you fail to recognize and enact academic values you are risking your grades, your degree, and potentially your future. Using digital spaces to promote social conversation as a legitimate research practice exposes core values of isolation and exclusivity in academia. It invites students to interrogate these core values and bend, expand, or resist the expectations academia places on researchers. It also repositions scholarship away from the territory of a select few, and towards a more inviting and diverse landscape of voices.

Summary

Instructors in traditional university research courses will typically start by defining research conceptually, and then move to teaching research skills. When defining what research is and what it does in academia, many instructors position research in terms of conversation. However, thinking of research practices as contributing to a nebulous "scholarly conversation" can be unclear for students.

In this chapter, we pointed out that digital spaces can help demystify the idea of scholarship and research by making conversations between scholars tangible and visible, by revealing the humanity and multiple identities of scholars and researchers, and by making research a more approachable and social process of becoming. In doing this work, digital spaces simultaneously expose the core values that underlie traditional academic research, and encourage both students and professional scholars to resist or bend those values in important ways.

In the next chapter, we will look at how collaborative digital spaces invite multiple language varieties in the production of meaningful research, and how that invitation might benefit students as they engage with each other and express their research interests in a variety of ways.

CHAPTER 3: CODES AND MODES

Part of the discussion in Chapter 2 focused on using collaborative digital spaces to make room in academic research practices for the genuine histories, experiences, and identities that student researchers bring with them into these spaces. I now want to point out that one way for digital spaces to do that work is through language. Digital spaces often act as messy sites of linguistic hybridity; even if they are not intentionally designed with language variety in mind, digital spaces often invite their users (in our case, scholars and students) to use many different modes of communication as they think out loud and interact with each other dynamically. When thinking out loud about a research project, it may help students to be able to include multimedia like video, audio, or image uploading as part of their process. Many digital spaces also support hyperlinks, embedded web pages, and large document attachments which add to the multiple options that researchers have when they record or generate ideas in an online space. This idea of multiple modes through which researchers can communicate is paired, in my mind, with the multiple languages they are free to use in that space as well. In a digital space, researchers may use their full selection of language varieties, including formal and informal dialects.

This chapter focuses on the ways in which digital spaces invite a variety of language practices (including, but not limited to, multimodal communication), and how this linguistic creativity may shift the kinds of language students and scholars consider valid to use in academic research practices. In this discussion we will consider the multiple language literacies researchers bring to digital spaces, the tension and creativity

these varieties bring to a research space, and the resistance that language-play in these spaces can realize in the larger picture of academia.

Traditionally, academia insists on using language that is hyperformal and dense. Publications can be so thick with jargon and nominalizations that even experts may have difficulty understanding the ideas being discussed in contemporary academic work. University students often struggle to interact with these dense readings, and that difficulty may cause students to view published articles as finished and conclusive works of genius, rather than ideas that they can build on, rework, or create in conversation with. Although in many disciplines there has been some movement away from the formal linguistic extreme that academia traditionally insists upon, it's still all too common for students to operate under the expectation that they must write, speak, and think using formal language in their academic settings. That linguistic pressure can lead to frustrating roadblocks in creativity and ease of communication, which may cause students to question their ability to write and conduct research well. Rather than seeing differences in language-use through a deficit model where students and scholars are made to feel that they lack important languaging skills, digital spaces can push us towards an orientation that validates linguistic creativity in academic research spaces.

Multiliteracy

I'm drawing on the work of Suresh Canagarajah in his introduction to the book *Literacy as Translingual Practice* to suggest a definition of the term *literacy* that doesn't focus on the ability to read and write in a language, but rather on a person's ability to use

that language to creatively produce new meaning in new situations. We could say then, that in order to be literate in one language, you must be able to draw upon all that you know – all that you have heard or seen in that language – to make new meaning which is appropriate for the social situation you are communicating within.

With this definition in mind, we can see that a person might be literate in many different languages. Canagarajah is careful to insist that this is applicable not just to people who are multilingual, but also to those who speak or write in only one official language. This is true because each person has many different language varieties that they use in different moments of social engagement. For instance, a student researcher might have a particular way of speaking with their faculty advisor about their project, and a very different way of talking to their family about it. The term *multiliteracy* points to the many languaging skills we all share as we use multiple languages or language varieties to create new meaning appropriate for different social situations.

Similarly, if we all have multiple literacies, we too have languaging skills that allow us to fluidly navigate between those literacies depending on the circumstances we're communicating within. If a student researcher checks in with their advisor in a meeting, that conversation will have a totally different style, tone, and content than later when that researcher goes home to talk with their family about how school is going and what they're working on. That change in situation and relationship will require that researcher to move across different language varieties to fit the social expectations of the new space. This movement between dialects or languages is sometimes called *code-switching*.

Code-switching is a term originating in linguistic justice and African American Studies. It, and the idea of codes in general, is contextualized by critical theory on the power relations that exist between standard (white) English and non-standard (non-white) Englishes. Because they are embedded in the structural inequalities of power and race in the U.S., the codes that are enforced in academic institutions (like universities) relate directly to racial connotations. They are also linked closely with social power as they are read racially in different contexts (see Lisa Delpit's work for more on the relationship between codes, power, and schooling in the U.S.). The term *code-switching* and the scholarship around it is part of an effort to acknowledge the work that students and people of color do as they navigate these political and cultural contexts, and dynamically switch between the codes that are most appropriate for different social situations.

An important philosophy behind our discussion of multiple literacies is that there are many alternate and valuable ways of composing knowledge through language. It's important to identify, then, that formal academic language is one of many language varieties that scholars use in their personal and professional lives. Even though formal academic language has gained value in academia and comes with many political and historical contexts of power, it is certainly not the only way to make knowledge. In fact, the knowledge created in academia is only a speck on the radar of human knowledge constantly being created and negotiated in the world. This is particularly true in the digital age, where new ways of communicating are always being developed (videos, podcasts, online documents, etc.). For our discussion of digital spaces, it's important to acknowledge the validity of the multiliteracies that researchers bring to their work, rather

than only acknowledging the literacies that have been traditionally privileged in academia.

The Roles of Conflict and Tension

As students and scholars produce academic work, it's common for them to experience tension and conflict between home language varieties and formal academic varieties. This is particularly true for Black and Indigenous students of color whose home varieties are excluded, erased, and invalidated in academic institutions. Academia puts pressure on students to perform a particular way of speaking and writing, which may not only feel unnatural to produce but can also severely limit the ease with which these students can participate in scholarly conversations. In the podcast episode "Antiracist Writing Assessment Ecologies," Asao Inoue names this linguistic pressure as "white language supremacy" and explains that it's become an unfortunate measure for grading systems in academic courses. Student researchers are graded less on their ideas and contributions, and more on their adherence to dominant language codes. As a deeply colonized space, academia uses white language supremacy to constrict our perceptions of what is "scholarly" and worthwhile to pursue. Academic research that is produced using home dialects, hybrid speech, and other non-standard (non-white) language varieties may be labeled as not rigorous enough, not robust, not real, not authoritative, or not well-theorized.

One idea that I would like to bring up while thinking about the conflict students and scholars may experience between formal academic language and their other literacies, is the idea of productive tension. Not all moments of friction between languages result in damaging conflict – in fact, sometimes surprising and generative linguistic combinations are born from that push and pull between varieties. An example of this is the concept of *code-meshing*. Code-meshing is a term coined by Vershawn Ashanti Young and now a longstanding topic among scholars whose work focuses on African American Studies, Black American English, codes/code-switching, and the different types of Englishes taught in school settings across America. Code-meshing is, in Young's terms, both an intentional languaging skill that fully integrates (meshes) two or more language varieties together into a fluid stream of communication (in his scholarship those varieties are African American Vernacular English and Standard English), and at the same time an orientation that moves us towards thinking of academic language as an inclusive dialect that has room for multiple literacies and identities within it (*Other People's English* 3). More than switching between codes as we enter new situations, code-meshing allows language users to fully blend properties of multiple languages in order to produce creative combinations that do more to produce effective communication than any of their single linguistic ingredients.

In her article "'I Am What I Am': Multilingual Identity and Digital Translanguaging," Brooke Schreiber introduces the digital languaging practices of one of her students as an interesting object of study. Aleksander, a Serbian university student studying English in an American university, interacts socially on Facebook by using

dynamic languaging resources which, according to Schreiber, help him to develop and

display his unique lived identity. Some of the language varieties Aleksander uses are

English, Serbian, African American Vernacular English, slang, colloquial phrases, and

terminology embedded in American hip-hop music. As a Serbian hip-hop rap artist, many

of Aleksander's posts freely mesh the linguistic codes of his life in order to suit his

particular identity and the meaning he wishes to convey to his peers. For example, in this

post Aleksander uses a mixture of many language resources to introduce a music video of

the song "Feelin' It" by Jay Z.

Figure 1: A Facebook post made by Aleksander, appearing on page 79 of Brooke Schreiber's "'I Am What I Am': Multilingual Identity and Digital Translanguaging"

Aleksander's introduction of the video says, "citam za ovu pesmu neki clanak, kaze da

ima 'late night jazz vibe'… Bogami bas mi je dobra uz ovu late rainy night... (I'm

reading some article about this song, it says it has a 'late night jazz vibe'… By God it's

really good for me on this late rainy night.)" (79-80). Schreiber explains that Aleksander's post is about an English language hip-hop music video, but he frames it with a dynamic sentence that uses standard Serbian, his local Serbian dialect, and English. She also points out that he brings in an English article he was reading, and playfully reimagines the phrase "late night jazz vibe" by describing his own embodied experience in the phrase "late rainy night" (80).

Aleksander's post is not contributing to a digital *research* space, but this example still speaks to our discussion of code-meshing by highlighting the important opportunities that digital spaces provide students as they develop and perform interwoven identities. Schreiber elaborates on this point by saying that "students' digital literacy practices . . . involving high levels of code-mixing, invented spellings and transliterations, and other forms of linguistic creativity, express new, often hybrid identities" and that "online composing provides space for students' appropriation and re-imagining of standard forms of English" that are not perhaps available to them through traditional university spaces like the classroom (70-71).

Code-meshing is an important form of resistance to the isolation and exclusivity that has traditionally characterized academic research. Through language-play and creativity, students and scholars are more able to comfortably find place and belonging in research, embody themselves and their experiences in their academic voice, and more fully pursue important work in their fields. This creative and inclusive model for research-based language also disrupts the debilitating sameness in academic scholarship that might be produced if we only accept one kind of research – one language variety,

one set of research interests, one method of structuring/pursuing them – as "scholarly" or valid.

<center>Digital Spaces and Student Researchers</center>

In Chapter nine of *Decolonizing Methodologies*, Linda Tuhiwai Smith spends some time exploring research, and the colonial trauma entwined in both the concept and practice of Western research on indigenous cultures. This discussion leads her to envision new ways of conducting research that are centered on respectful partnership with the subjects of the research, and an incorporation of other worldviews into the production of the research itself. Tuhiwai Smith pushes us to reconsider Western assumptions about 'worthy' and 'academic' scholarship, and to question the enforcement of strict research conventions which work to exclude non-dominant modes of meaning-making. In this way, she is in conversation with Inoue, Young, and with the exclusion felt by many university students of color pursuing their own forms of research which may deviate from the dominant norm.

As we've explored in previous chapters, collaborative digital spaces are already beginning to challenge that dominant norm by blurring the lines between what is 'scholarly' and 'academic,' and what is not. By producing research and participating in academic discourse on online platforms, scholars are redefining what it means to create scholarship in the modern world. I'm arguing that digital spaces could also help address the fundamental necessity for all students to feel supported in their academic interests as they develop their identities as scholars and researchers. Among other things, a digital

research space could support graduate and undergraduate research interests by offering a place where students can: collaborate with each other and talk in detail about their projects/interests; be exposed to a wide range of ideas for what they might want to pursue in their research; lend feedback and constructive criticism to other student's project ideas; collaborate to revise and co-construct new iterations of existing research projects; team up to co-author a research project; volunteer to be a subject or interviewee for a project; or otherwise offer to participate in a project in a concrete way. Any of these conversations and supportive activities could lend meaningful interactions to the work students do in the university.

Digital spaces also offer students an expansion of the ways in which they can interact with each other, making these spaces sites of dynamic languaging. In a digital research space, students have many opportunities to engage in code-meshing, code-switching, and drawing on their full selection of language resources to communicate their ideas. Beyond language variety, digital spaces also offer students different *modes* of communication, such as recording a video response, posting a relevant meme, or talking collaboratively in comment threads. These modes can be blended together in intentional ways to creatively produce new meaning and generate new perspectives on research projects.

To get us thinking about what this might look like, I used this project's digital prototype space to make an example of how a student might use multiple modes to help them think about an assignment for their English 104 class (this will be an example we come back to in the Discussion section).

Figure 2: Multimodal student example

In this example, the student is using a mix of formal and informal language and a wide

variety of modes to add different layers of meaning to their post. For instance, we can see

them using emojis, embedded URLs, a page divider, blank space, different colored fonts, and an embedded image. As they think out loud about the music video project, they negotiate these different modes to add emphasis, keep track of important ideas, share resources with an intended audience, and playfully employ different languaging strategies.

By allowing student researchers to use their full selection of languaging and problem-solving resources in their pursuit of worthy academic work, digital research spaces can be used to explicitly encourage deviant and creative language practices. This may lead students to moments of reflection where they question how they perform language in academic spaces, and reconsider what valid scholarship looks and sounds like in academia.

Summary

All researchers bring multiple language literacies with them to research spaces, as well as sophisticated languaging skills that allow them to navigate between literacies to suit new moments of communication. However, academia has traditionally valued formal academic language to the exclusion of all other varieties, despite many alternate and valuable ways of composing knowledge through language. This narrow definition of valid meaning-making causes damaging conflict in the academic lives of many scholars and students, particularly those who come from culturally or ethnically marginalized communities. Students are often graded according to their ability to adhere to the dominant code of academia rather than the quality of their ideas, and many find their

research interests dismissed or invalidated as they develop their academic identities. However, conflict between academic language and nonstandard language varieties sometimes results in productive tension where new combinations are created, and new more inclusive orientations towards identity and language can be facilitated.

Mixing language varieties is messy and it can create unpredictable opportunities for new interpretations and ideas. To that end, digital spaces invite multiple language varieties and modes of communication in the production of meaningful research. Not only might this benefit students as they engage with each other and express their research interests, but it may also lead to new perceptions of what it means to produce knowledge in academia.

In the next chapter we will discuss the implications of suggesting that digital spaces can be used to do transformative work at the university level, as well as the limitations of those spaces when we consider that they are rooted in inequitable realities.

CHAPTER 4: REFLECTIONS AND DIGITAL REALITIES

Up until now our discussion has largely revolved around the transformative

potential of digital research spaces – what digital spaces are already doing to change what

valid academic knowledge looks and sounds like, and the many benefits that digital

spaces hold for university students who are continuing to develop their identities as

scholars and researchers. This is an importantly optimistic outlook that should continue to

frame our work on this subject. However, in this chapter we temper that enthusiasm by

highlighting the advice of many scholars on this topic – that we should not be so blinded

by the benefits of digital spaces that we forget to consider the ways in which inequitable

social forces influence meaningful participation among users. Here, we will explore the

limitations of digital research spaces by first considering the inherited social capital we

all bring to a research space and the particular contextual histories of academia which

influence us as researchers. Then, we will briefly discuss some of the larger social forces

that influence how researchers perceive and interact in digital spaces, before critically

reflecting on the potential of digital spaces to create a place of safety or harm for student

researchers.

Collaboration and Social Capital

Julia Voss in her 2018 article "Who Learns from Collaborative Digital Projects?"

uses her classroom to examine the social dynamics of college-level collaborative writing

projects, and the ways in which the incorporation of a digital space influences reinforces

privilege and inequity. Her students were assigned a community-based research project, which focused on the roles played by local churches as literacy sponsors in a historically Black neighborhood. In the project, students were expected to work in a group to conduct community interviews, compile research notes, and create a digital site that reflected their semester-long work. Voss explains that each group had four roles that the students could choose between: group leader, technology expert, group secretary, and community liaison.

As her students organized themselves around the assignment and allocated roles of participation, Voss explains that it became clear that learning and engagement were heavily influenced by what she calls "inherited social capital." The students who were more used to creating digital tools were in charge of creative construction, while the students who were more used to leadership roles were selected as leaders and the students who were more used to supportive roles were casted as note-collectors and editors. Different moments of interaction between students reflected the earned and unearned social capital that each of them brought with them, such as age, ethnicity, technological expertise, levels of formal education, and research experience related to the assignment. As Voss points out, many of these are often interconnected and at some level perhaps even co-determinative, meaning that one factor can lead to the existence of another. For instance, your gender and age could cause you to be cast in supporting roles more often, which could cause you to feel less comfortable in – and less likely to gain experience in – leadership positions.

Our discussion of digital spaces is not centered in the classroom or on the distribution of roles in student group projects. However, I think that it's worthwhile to consider Voss's student groups as condensed and localized variations of larger social patterns, which I believe is her point. Even in a space where students are encouraged to work collaboratively and freely together, the ways in which they do so may replicate patterns that they see and feel in social situations outside of that space. In her work, Voss emphasizes that although digital projects and spaces may seem to diminish the role of discrimination to create a more equitable platform for collaboration, they more often become a place where larger societal inequalities are reproduced. She concludes by asserting that collaborative digital projects should be contextualized by considering the inequities created and influenced by social capital, in order to minimize the participation and learning gap that can occur for some students. Voss's work reminds us that as we move forward with this idea of using digital spaces to create a place of more equitable research, we should carefully consider the limitations of those spaces, acknowledging that they are far from politically neutral, but rather shaped by the social capital that we bring with us into these spaces.

Academia and Its Social Influence

Because ours is a research space, two significant sources of social capital that we should consider are 1.) the university, and 2.) the larger political power structure of academia. In a digital research space, it's essential for the work that takes place there to be validated as scholarly and academically valuable. However, as we've briefly discussed

in other chapters, it's important that the space does not take on the many social inequities found in other academic spaces (the classroom, for instance). Some of those inequities will inevitably be introduced to the space by the researchers who make meaning there. Professional and student researchers bring with them different levels of experience in academia; some of them have spent 20 years of their career steeped in the politics, power structures, and biases found there, while others may have spent less than a year in the same environment. Each researcher experiences the university differently and has unique perspectives on the things they see or feel there, but each of us brings with us language, attitudes, and behaviors inherited from our academic experience. In our interactions and our work, we can't help but be influenced by that academic social capital, and so we also can't help that the digital space will be shaped somewhat by it.

No space of academic learning is neutral or equitable, and in the same way that Voss's students engaged with each other in ways that replicated inequitable social patterns, researchers will (consciously or unconsciously) replicate academic values in a digital research space. An example we could think of here is a tenured professor who has many publications and years of experience in academia interacting with relatively inexperienced researchers on Twitter in subtle ways that perpetuate the power or status that academia has given them. A digital research space, despite its many transformational benefits for the researchers who use it, will always risk becoming an extension of institutional inequalities rather than a disruption of them. Voss's work challenges us to confront the assumptions we carry about the equitable nature of digital spaces and to consider some of the ways in which cultural disparities between researchers might be

reinforced in these spaces. This is an important framework to carry forward for thinking

about how our intentions for digital spaces might be very different from the work they

end up doing as students engage with these spaces in the real world. However, this is not

to say that as scholars, staff, students, and faculty of higher education we shouldn't aim

for more equitable researching spaces that support and validate the people in our

academic communities. As we do so, we should keep in mind that through our own

attitudes and actions as researchers, digital research spaces may enact many of the same

social inequities perpetuated by other spaces and structures in academia. A guiding

principle, then, is thinking about how we can account for that possibility and make

intentional choices that promote inclusion and inspiration for the students who come to

this space.

Larger Sources of Social Influence

In addition to accounting for our own biases and the ways in which our academic

social capital influences the way that we engage with other people in collaborative

research spaces, it's also important to acknowledge the many other sources of social

capital that influence us as well. Part of what makes spaces like Facebook and Twitter so

successful as sites of knowledge production and social engagement is that the participants

come to those sites with genuine histories and experiences to share. There's more room in

digital research spaces to value and validate cultural knowledges, community assets, and

other ways of expressing yourself. That creative and holistic basis for interactions also

means that participants will bring with them social capital, attitudes, and behaviors from

a variety of places, all of which meaningfully shape the digital space itself. For example, citizens in the U.S. feel the burden of structural inequalities on a daily basis, including systemic discrimination based on race, ethnicity, gender, age, ability, and socio-economic class. Through our constant exposure to these forces of inequity, we all adopt attitudes that are influenced by the ways in which these forces interact with ourselves and our communities. The way that we come to a digital research space and the way that we engage with people collaboratively while we are there, will inevitably be influenced by the biases and experiences that have become part of us through our larger culture(s).

While it's true that we all bring with us social capital that influences digital spaces and the interactions that take place there, that doesn't mean that the space was a blank slate before we came to it. Digital spaces, like all social environments, have biases ingrained in them through their design and functions. It's important to remember that digital spaces are built by people, and those people have particular attitudes and intentions that shape how the space is designed. This is a truth that is not always clear to users who come to digital spaces. In the culture surrounding technology, it's more common for people to think of digital sites like Twitter and Facebook as neutral or blank. They are just places to go when you want to find information or interact with other people.

These false assumptions about the neutrality of online spaces stem, in part, from the way that we talk about them. Payal Arora, in her article "Typology of Web 2.0 Spheres," explores how digital spaces are conceptualized through metaphors, and what effects those metaphors can have on our understanding of what digital spaces are. She

explains that metaphors can be used to highlight certain aspects of digital spaces. An example that she uses is when Facebook or some other platform sells the ad space in the margins of their webpages. They might refer to this empty space as "advertisement real-estate" which draws on the idea of buying and selling houses to emphasize that this ad space is for sale. Arora points out that digital spaces are inexhaustibly referred to through metaphor, for example "chat**rooms**," "home**pages**," "web**pages**," "web**sites**," "information **highways**," etc.

Metaphors (like all aspects of language) inflect our understanding of digital spaces with connotations from elsewhere in our social histories. Unfortunately, using unclear language to talk about technology confuses our understanding of what really takes place in online spaces. Often, that lack of clarity makes these spaces seem neutral, limiting our understanding of them as socially constructed realities that are situated in a particular place. For instance, using the metaphor of an "information **highway**" makes the space seem like it's sending unbiased information at high speeds. It does not imply that this information is written by someone in a specific way with a specific purpose in mind. Because of the assumptions that often emerge from conversations about technology, it's important that any digital research space is built with both the knowledge that its many participants bring social capital and attitudes that shape the reality of the space, and that the space itself is a rhetorical construction which is fully political and situated in a particular historical moment.

Safe vs. Brave Space

If many social forces influence how we interact in a digital space, how we perceive digital spaces, and how digital spaces are built, then how can we account for the unpredictable risks that students will encounter by participating in a digital research space, and how should we approach the ethical dilemmas that might surface when we mix scholarly work with online collaboration? To answer these questions, I want to draw on the work of Mary Louise Pratt to think more critically about the risks students may face in a digital research space like the one I am advocating for.

In 1991, Pratt coined the terms *safe house* and *contact zone* in her article "Arts of the Contact Zone." In her words, contact zones are "social spaces where cultures meet, clash, and grapple with each other, often in contexts of highly asymmetrical relations of power" (33). Safe houses, on the other hand, are temporary havens of trust and shared meaning, which offer "protection from the legacies of oppression" (40). Traditional academia is, to no one's surprise, a contact zone where many motivations and cultures compete for publications, prestige, money, and other social currencies. In some ways then, digital research spaces might offer respite from the oppression and erasure many researchers experience in traditional academia.

As we discussed in Chapter 3, these digital spaces offer a variety of ways to express yourself and your ideas, and encourage connections between researchers as projects take shape. Drawing on Tara Yosso's theory of cultural wealth, I believe that digital spaces can help frame research and research practices around inviting students

(and particularly students of color) to creatively use their wealth of knowledges and embody their many identities as they produce scholarship. Digital spaces can be used to celebrate and validate the social wealth that students bring with them, such as (in Yosso's words) their aspirational, linguistic, familial, social, navigational, and resistant wealth (77-81). With this dynamic invitation, student researchers might find themselves in a place of community, inspiration, support, and resilience. To what extent, then, could a digital research space be considered a safe house, and for whom? The answer to that question is, of course, contextual and would depend on how the space is being used, whose ideas are represented there, and who or what is missing from the conversation.

Digital research spaces, as loose extensions of academia, could also become contact zones for many students and scholars. Power dynamics and social pressures might make them uncomfortable places to develop research ideas. However, while contact zones may result in varying degrees of emotional and intellectual harm, it's important to note that this isn't always the case. To shift how we are thinking of safety vs. violence, I want to call on the work of Margaret Somerville and Tony Perkins to suggest that safety is not the only method of supporting student researchers in their academic interests. In their work, Somerville and Perkins speak to Pratt's original conception of safe houses and contact zones, to offer a different perspective. They reframe the contact zone as a place of "productive tension based on difference rather than on a hybridity that elides the space of identity polarities" ("Border Work" 265). In their argument, the contact zone is a place where intellectual and cultural friction produces a unique environment where differences in identities and motivations are able to be fully

present in the space. Differences are not glossed over or ignored to make room for superficial compromises, but rather used to fuel the negotiation of meaning, resulting in powerful new avenues of inquiry. Somerville and Perkins also describe the contact zone as having "mobile and shifting boundaries . . . constructed by emotional and intellectual border work" as those differences in identity and motivation are debated through dialogue (265). In this way, digital research spaces may become contact zones, but at the same time may introduce opportunities for risk, discomfort, and productive tension as students engage in conversations around their research.

Whether digital spaces have the potential to become safe houses or contact zones, it's important when building a digital space to consider carefully what social realities may take place there for students. Social environments (virtual or physical) always have the potential to become harmful contact zones, where reflections of larger inequitable structures are made real. If we then treat digital spaces as equal to any other social space, then the reality of what takes place in these spaces ("safe house" or "contact zone") may depend on who is using the space, how the space is designed, and how pre-existing social forces shape the collaborative engagement that takes place there.

<center>So, What Can We Do?</center>

Understanding the risks that digital research spaces may pose to the students and scholars who use them challenges us to foresee and disrupt some of the inequity that may take place there. One way that we might do that is by explicitly outlining our motivations and intentions for the space, how we come to it as creators and designers, and what

purpose we imagine the space fulfilling in the real world. Making our positions clear to both ourselves and to the participants of the digital space will help hold us accountable for the assumptions and unconscious biases we bring to our work, bringing those implicit ideas into dialogue with others. Additionally, we can design the digital space with intentional choices that invite researchers to push against harmful power dynamics inherited from elsewhere in our social and academic lives. Drawing on our conversation from Chapters 2 and 3, this could mean inviting visible social moments between collaborators, validating research as a process of making knowledge together, making room for the identities and histories of the researchers who come to the space, or incorporating opportunities for many modes and language varieties as researchers engage with one another dynamically. No space we create will be free of bias or politics, but using intentional strategies will help us hold these risks fresh in our minds as we create it, and may alleviate some of the harm students will face as they build connections with each other and develop their identities as scholars and researchers.

Summary

Digital spaces are not utopian spaces of respect and equality – in fact, they are never neutral in their creation and often reflect the inequitable social forces at play in many parts of our lives. In that they are just another extension of the culture they are found within, digital spaces are easily able to recreate inequitable power structures of the larger culture they are a part of and cause significant harm to their users. For a digital *research* space, it's important to consider academia as a significant source of social

capital and the ways in which it might influence the interactions that take place between researchers. On the other hand, researchers are also real people who come to the space with full histories, identities, attitudes, and experiences from other places in their lives, all of which also shape the interactions they have with the digital space and other participants.

As people interact with the digital space, they are not always aware that it too has biases built into it through the people behind its design and maintenance. Sometimes these spaces appear neutral in the services they provide users, which can influence the way that those users engage with each other there. In an effort to foresee and disrupt some of the harm students may face in a digital research space, it's important to consider carefully the emotional and intellectual risks that such a space would pose. This may mean thinking about the space as a safe house or a contact zone, but it also means thinking about the ways in which the designers of a digital research space can build it in ways that explicitly confront the implicit biases and motivations behind their work.

In the next section I will introduce the digital prototype space I created for Cal Poly Humboldt students, and discuss the strategies I considered while designing it, including talking explicitly about my own motivations and intentions for the space, whether and to what extent the space should be associated with the university, how discussions should be framed in order to invite meaningful collaboration, how to use visual rhetoric to balance informality with scholarly value, and how to incorporate many different modes that students can use to communicate their ideas.

DISCUSSION OF THIS PROJECT'S DIGITAL PROTOTYPE SPACE

In this project we have discussed the collaborative, social nature of research and knowledge-making in academia. We have seen how professional scholars interact with each other meaningfully as they pursue their work, and how digital spaces are already being used by scholars to change rigid, traditional conceptions of research into something more dynamic and holistic in nature. In the university classroom, students are introduced to research through ACRL Frameworks such as "scholarship as conversation," "information creation is a process," and "research is inquiry" but that introduction is also informed by assignment design which tends to reinforce faulty educational conceptions of the individual student and isolated, performance-based evaluations of student research. As a disruption of these faulty conceptions, we introduced digital spaces and drew on many different scholars' voices to discuss the benefits and implications of using digital spaces to reinforce social, conversational modes of academic research.

In this section we take this argument one step further by introducing the digital prototype space I constructed in response to the chapters of this project. Here, we will discuss what a digital research space might look like in practice, my recommendations for the design and purpose of such a space, and some of the more practical decisions we have to make when building a space like this (such as color, scheme, organization, and layout).

The Forum and Its Goals

[URL for the Collaborative Digital Forum](#)

The purpose behind this prototype forum is to create a collaborative digital research space for the undergraduate and graduate students of Cal Poly Humboldt. Currently, the university doesn't have a resource for students comparable to this one, where students can voice their research ideas and work informally and in conversation with each other to pursue their projects. So, the idea is to create a new resource for students that incorporates more holistic, emotional, communal ways of knowing and being alongside the academic research practices students learn in their classes.

More broadly, this forum takes up the understanding that research is an inherently social activity, and strives to make that sociality more present in the way that student scholars visualize the process of doing academic research. It asks Cal Poly Humboldt students to examine their understanding of what research looks like – is allowed to look like – and to deviate from some of those restrictions. Instead of conducting research and thinking about their projects all alone, this space invites them to bring their ideas into dialogue with other students, and share in a valuable exchange of resources, support, validation, and encouragement.

This prototype is contextualized as part of Cal Poly Humboldt and reflects the political and historical landscape of this school in the Spring semester of 2022. As a prototype, this forum is a 'rough draft' version of what could, in the future, be an essential resource for students at this school. This prototype forum is not meant to be

comprehensive in its approach to the design and execution of a digital research space, but rather a blueprint for us to take forward as we continue this work in the future. Due to the scope of this project, I will not be publishing this forum space, but I hope that it will be reiterated in future research so that it can give that space of research conversation to Cal Poly Humboldt students, and perhaps lead them to reconsider what valid academic research looks like, how and where they can find research support, and whether it's okay to work with other people as they produce knowledge and develop their identities as scholars.

<div align="center">Recurring Themes in the Building Process</div>

Before we talk about what I chose to incorporate into my digital prototype space, I wanted to highlight the thoughts that grounded and framed my work on this space throughout the building process. The first guiding question was this: How do I create a space that is both academic *and* social? This question is informed by the writing I did in most of my chapters, but particularly Chapters 2 and 3 where I contend with the need for academic validity in student research, while acknowledging the harm that academic structures may impose on researching spaces. In my mind, it was important to make the digital space both inviting, approachable, social *and* valid, academic, and meaningful. This speaks to my argument that valid scholarship can be (and is) made informally and socially between scholars in collaborative digital spaces.

The second question that guided the construction of this prototype was this: How can I create a space that overtly seeks to mitigate harm, but also does not come across as

so rigid and overbearing that it limits the engagement students feel welcome to participate in? This question is informed by the writing I did for Chapter 4 where I voiced some of the emotional and social risks students face when they engage in social digital spaces. While I want to offer guidelines for how students should come to the space and how they should interact in it, I also feel that this space should maintain an open invitation to creatively engage with one another. Without that open invitation, many students would turn away from this space and perhaps feel that it too closely resembles other academic spaces that rigidly regulate student work. Striking a balance between ethical responsibility and open engagement was a theme that influenced many of my design choices for this prototype, particularly my use of tone and style on the guidelines page of the space.

In the following discussion, both of these themes are visible in the choices I made for the prototype space. Because there is much to cover in this section, I broke my considerations into four categories: Features We Can See; Features that are Present, but Not Visible; Features I Wanted to Include but Couldn't; and Features I Intentionally Chose Not to Incorporate. Following the four categories, we also discuss the limitations of this prototype space and imagine what future research on this topic might look like.

Category 1: Features We Can See

As we transition now into a discussion of the space itself and the choices I made in its design and construction, I wanted to start with what we can see in the space. This includes the different pages, the colors, and the layout of the space as a whole. I will be

using screenshots of the space as we navigate through the different pages, beginning with the home page.

<u>~Home Page~</u>

This is the first introduction users have to the space, so I carefully considered the first impression I wanted to give my audience (who are, in this case, students at Cal Poly Humboldt).
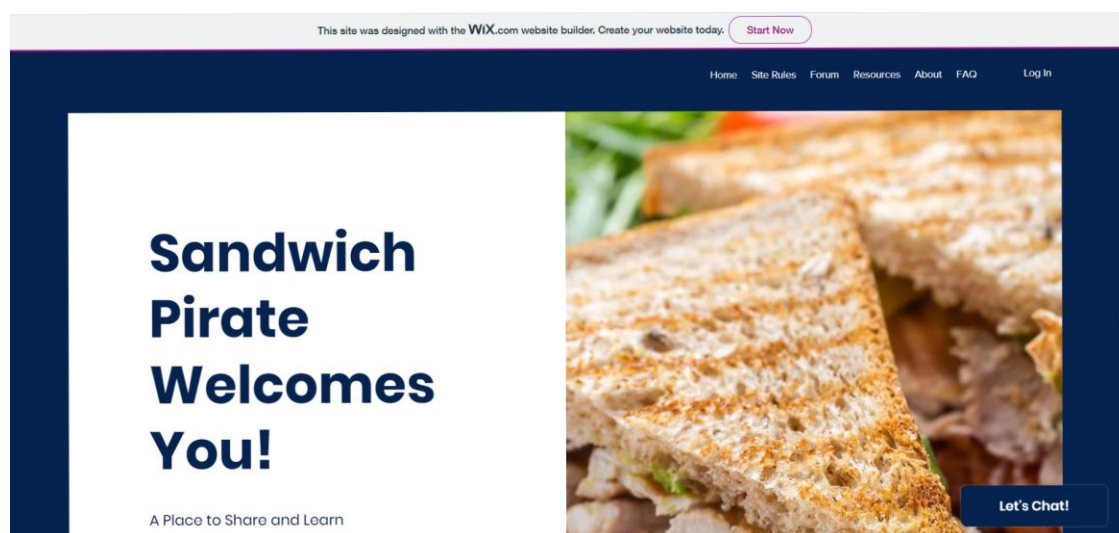

Figure 3: Home page 1 of 3

The first decision we can see me making is the title of the space. I decided to call it the "Sandwich Pirate Forum" for a couple of reasons: 1.) The name is silly and I wanted to have playfulness and curiosity be at the center of what this space does 2.) Sandwiches are a very normal, very informal food object in many college students' lives.

I take a sandwich with me to class most days. That informality was important to me because I wanted this space to be one with very low stakes. I didn't want to choose a title that incorporated the word "research" in the name, or some other terminology that would make the space feel imposing or official. Although "Cal Poly Humboldt Research Forum" would have been narrower and more descriptive in terms of what this space does, it also sounds intimidating and perhaps not a place where I would go to voice my ideas on my projects.

Sharing center stage on the homepage with the title, is a big picture of what looks like a very delicious sandwich. This sandwich playfully interacts with the name of the space, but it also uses inviting colors and senses to make the homepage feel warmer. While choosing a picture for the homepage, I wanted to emphasize the title, but I was also conscious that leaning too far into the sandwich theme would make this space feel like a food website. To counterbalance and introduce the space, I follow the title closely with a subtitle: "A Space to Share and Learn." This subtitle keeps the user's eye moving down and encourages them to keep reading about the space.
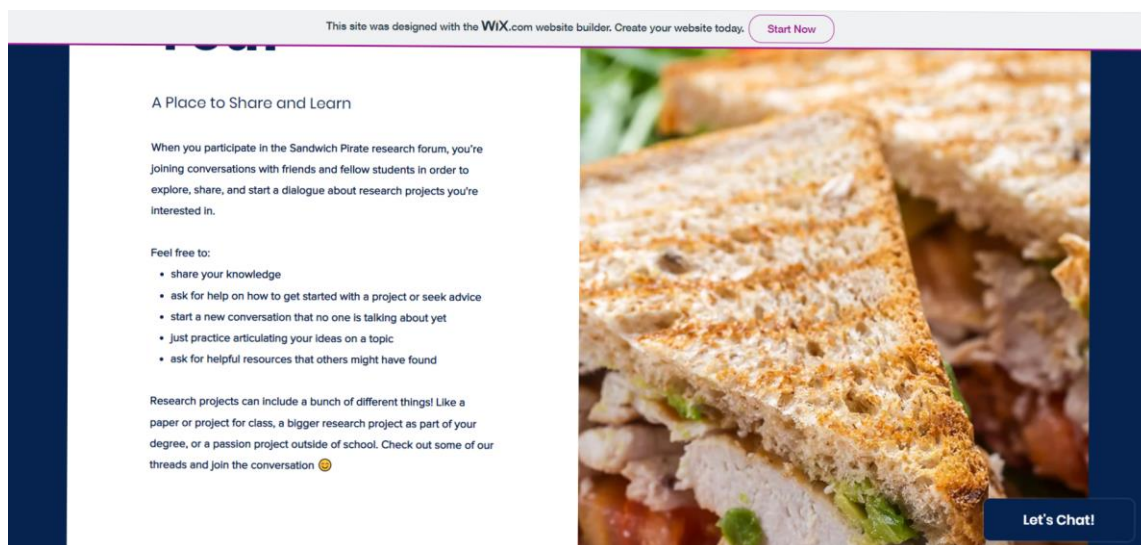
Figure 4: Home page 2 of 3

As students scroll down, they will see a larger description that introduces the space as a research forum, and frames what kind of interactions can take place here. What I want to point out first is that I've broken this description up into small paragraphs and a bulleted list to make it easier for the skimming eye to read. I also use a friendly, casual tone throughout the paragraphs. I use contractions and straight-forward word choices, I use the pronoun "you" so that students can picture themselves using this space, and I even use a smiley face at the end of my final sentence. This is all still part of the first impression students will have when they come to this space, so while it needs to define the purpose of the forum, it also needs to contribute to the inviting and open atmosphere I am trying to construct.

In this description I also make a few rhetorical moves to do that work of defining the forum, while also using space efficiently and cleanly. I start by naming the space as a

research forum, and then define that term through examples of what students could do in this space. This quickly gives students the idea that this is a "research forum," and what a research forum looks like in this context. Next, I move into explicitly inviting them to participate in this space, again illustrating what that participation could look like by using bulleted examples. Because an invitation to "share knowledge" or "seek advice" feels a little vague and as a student I may not know where to start, the next piece of the description names some sources of inspiration that will get students thinking about the projects that I'm sure they're working on right now. It also points out that research can come from a number of sources, and not all of them have to be academic (thinking about that last part that says "or a passion project outside of school"). This defining/framing description ends in another friendly invitation to participate, this time naming this participation as being part of a "conversation." This is a much more informal choice than if I had invited them to "make knowledge" or "make meaning" and it's specific about the expectation of back-and-forth dialogue between people.
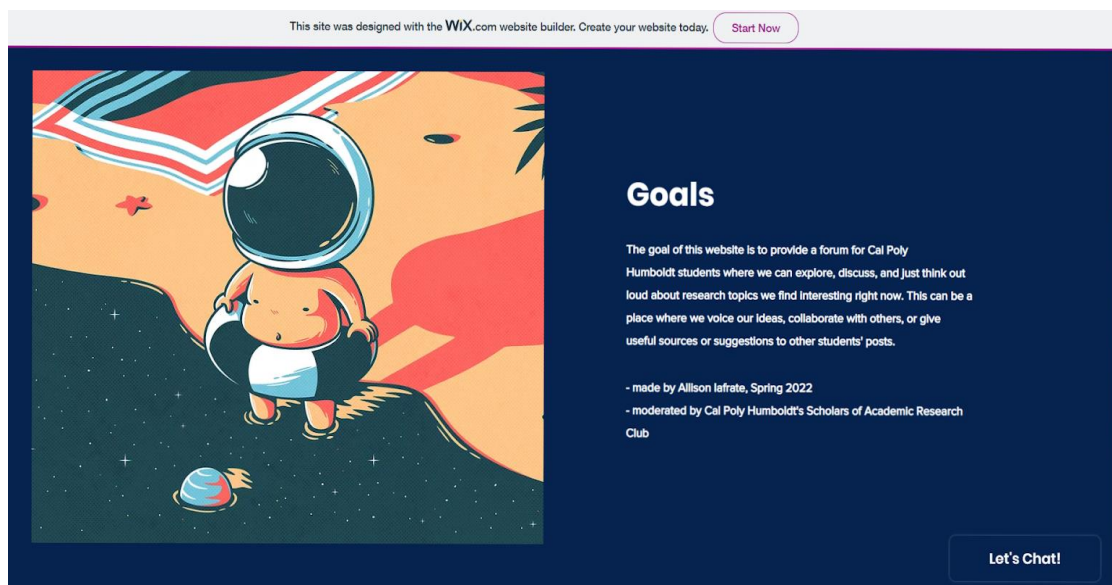
Figure 5: Home page 3 of 3

As we scroll down to the next and final section of the homepage, we come to the part that lays out the Goals for the forum. I felt that this was a necessary addition because while the description under the title of the homepage invited students to add their ideas to the conversation, it framed that invitation in terms of the individual "you." Meaning that as a student "you could use this space to do these things." Here, the Goals section uses "we" and the collective term "students" to embrace a more community-based understanding of the forum. This forum is now a place where "we can come to do these things together." This section also seeks to be transparent about the intentions that I, as the developer of the website, came to this space with and the larger purpose I had in mind when I created it.

The dashed bullet points under the Goals paragraph name the people behind the space – me and the student-run organization that moderates and maintains the forum. We'll talk more about this point later, but for now the "Scholars of Academic Research Club" is a placeholder for the name(s) of the club(s) moderating this space as a published research forum.

Accompanying the Goals section at the bottom of the homepage, is a picture of an astronaut wading into the ocean which, instead of water, is outer space. This picture uses colors that contrast against the dark blue of the homepage outline, and also plays creatively with the idea of "space" which I keep using to refer to the forum. I liked that this picture gives us an atmosphere that says "we don't take ourselves too seriously here," and it also gives me the thought that we're stepping a little bit into the unknown when we engage with each other in this space.

~Site Rules~

When students scroll back up to the top of the page and look at the navigation menu, the next choice they see is a page called "Site Rules." This page will cover guidelines for attitudes and behaviors in the forum. Before we look at the page itself, I wanted to explain why I chose to call this page "Site Rules" instead of something like "Community Agreements." I made this decision for two reasons: 1.) "Site Rules" is a short name, which means that it fits well in the menu and 2.) even though "Community Agreements" is a softer, more rounded term for the guidelines I'm laying out, "Site Rules" is more identifiable as you're quickly skimming over the website. I used more

direct wording because I didn't want students to misinterpret what they will find on this page, and I wanted them to stop here before they go to the forum. Calling something a "rule" might make them think "hm, okay maybe I should check those out before I do anything else." I soften this language immediately by introducing the phrase "our rules and guidelines" once we click on the page itself.
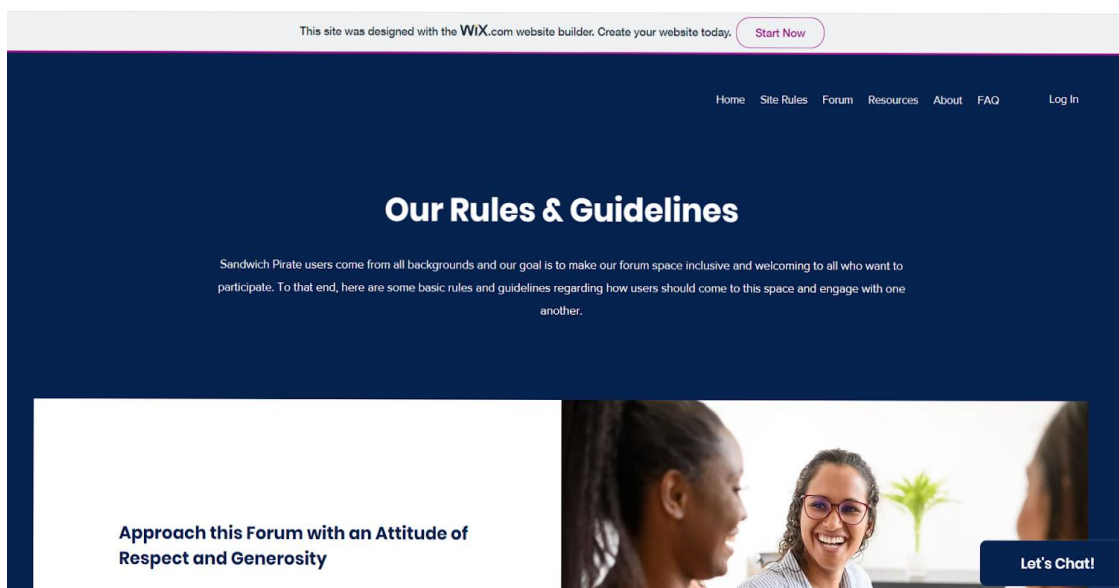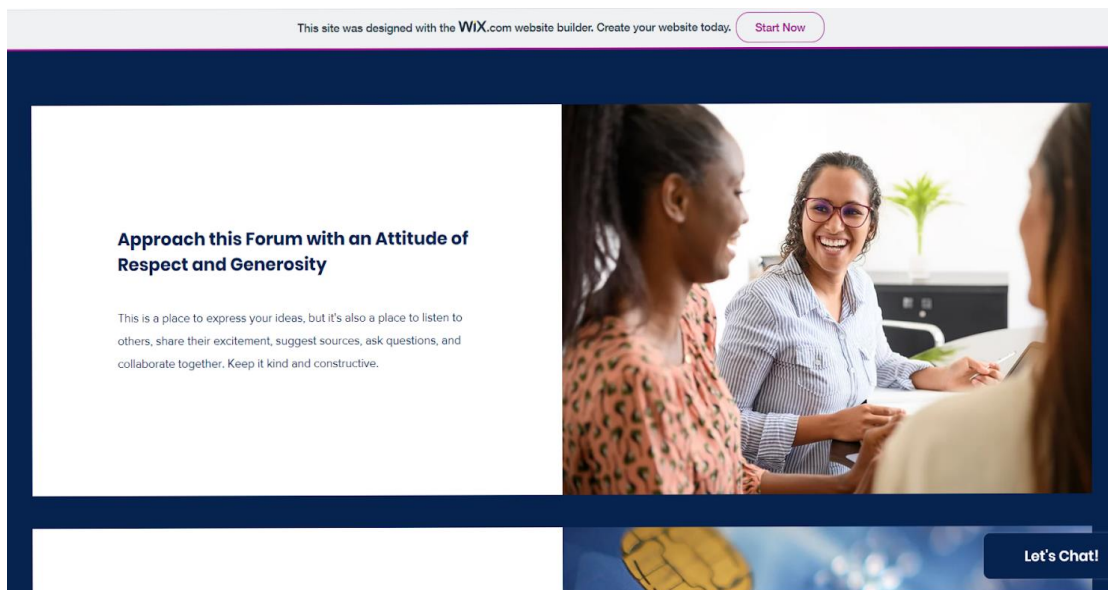

Figure 6: Site Rules page 1 of 5

On the Site Rules page, this is the first thing that students will see. Having a whole page about rules and guidelines for the space serves a couple of purposes. First of all, it provides a framework for the kinds of interactions that are welcome in this space, and the kinds that are prohibited. This contributes to our discussion in Chapter 4 where we talked about the risks and implications of creating a digital research space for

students, because it is an explicit move towards creating a respectful collaborative environment. I think of this page as a moment of calibration that invites us to orient our attitudes and our goals for the space before we actually enter it and take part in the conversation. I would also point out that the guidelines take up a whole page, and they come directly after the initial framing work done by the home page. I chose this location because 1.) these guidelines are important and deserve to have their own moment, and a separate page gives them that space for reflection and weight, 2.) students are more likely to stop and read these if they take up a whole page and are visible from the menu, and 3.) this saves me from overburdening another page with too much text, which is what would've happened if I had tacked them onto a different page.

On the Site Rules page, I start with a little blurb that points to inclusivity and the validity of different perspectives or life histories. I use "our" to facilitate a feeling of community and mutual care, which I believe is important to meaningful conversations. Speaking directly to building that feeling together in this space, is the first guideline that students will read as they scroll down.
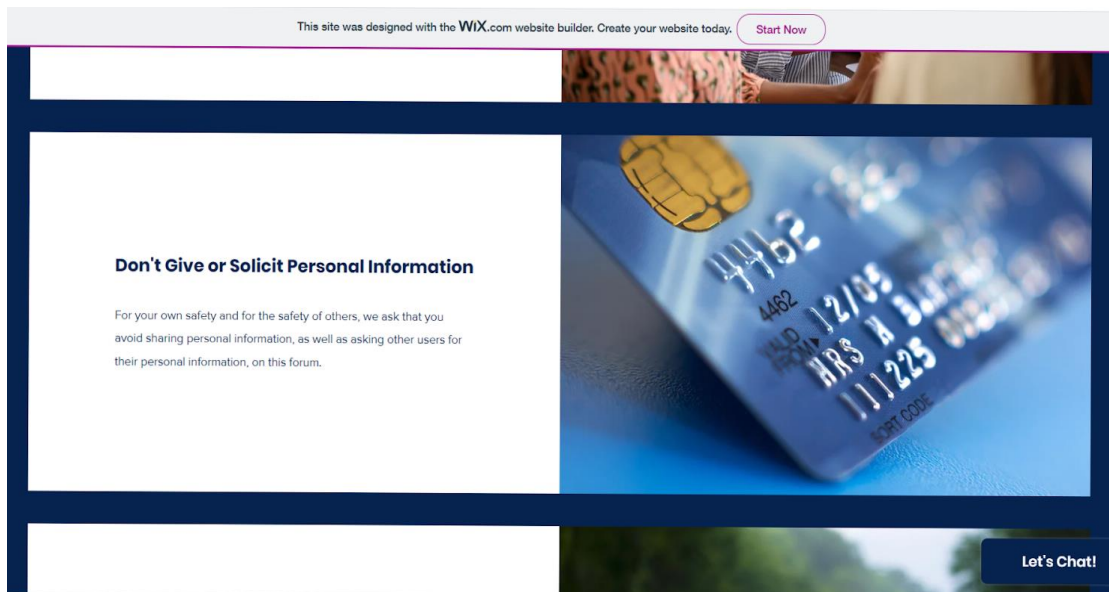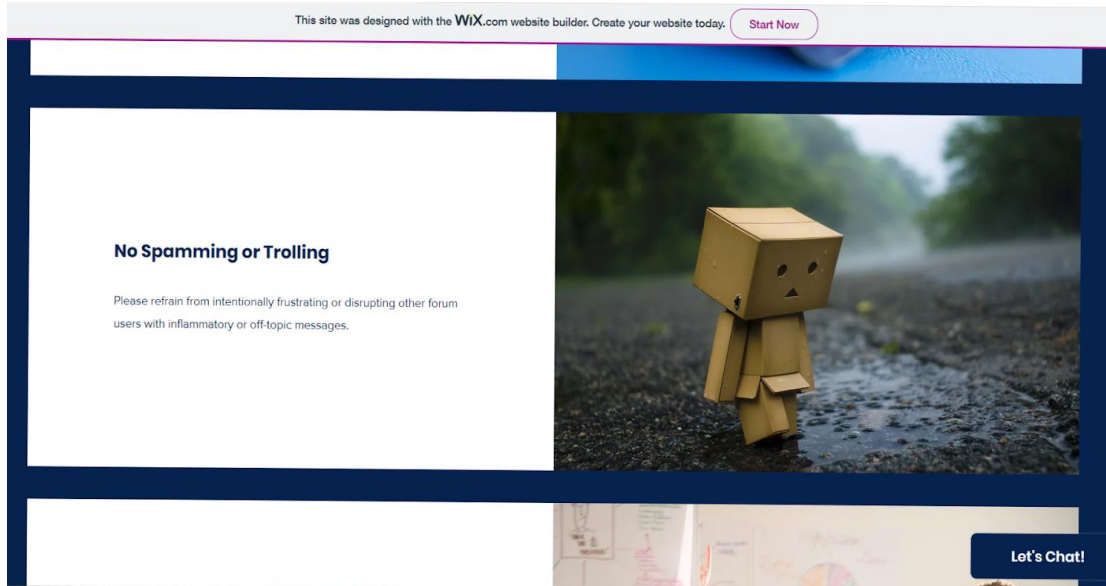
Figure 7: Site Rules page 2 of 5

This first guideline, "Approach this Forum with an Attitude of Respect and Generosity," starts students off with what I call an *umbrella thought* – it's the largest, most encompassing guideline that speaks most broadly to how we should come to this space and the philosophies we should enact while we are here. For this guideline in particular, I was thinking about how much or how little experience each student might have with peer feedback, or how to apply good feedback skills to academic conversations. I have full confidence that every student who comes here, comes with a full array of social knowledge and experiences, but because the university essentially prevents meaningful conversations about research between students, I wondered whether I should include a guideline that reminds us about the importance of kindness in academic conversations. Ultimately, I did just that, but as with the other guidelines I

included here, I kept in mind that adding too much about how students are "allowed" to interact with each other would create an uninviting rigidity to a space that is supposed to be creative and collaborative.

As students scroll through the Site Rules page, they will see different boxes for different guidelines, each paired with a colorful picture.
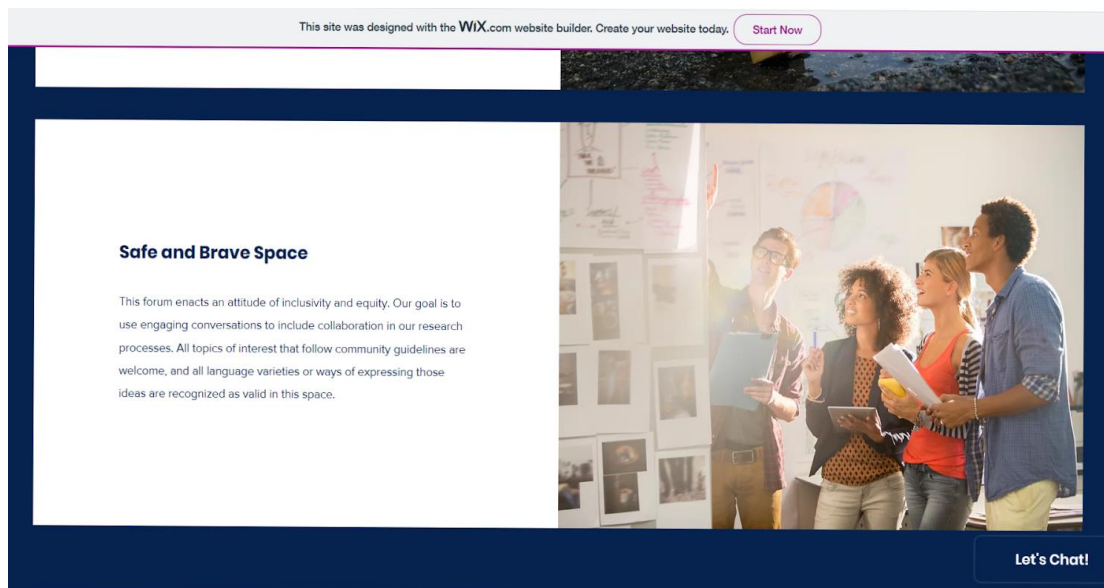

Figure 8: Site Rules page 3 of 5

Figure 9: Site Rules page 4 of 5

The pictures are meant to visually persuade users to keep scrolling through the page, and the minimal text for each guideline is meant to make them easy and quick to read. These guidelines (no personal information and no spamming/trolling) are fundamental in the online world, and so are probably very familiar to students, but they are still important for us all to keep in mind as we contribute to an ethical and safe digital environment.

Figure 10: Site Rules page 5 of 5

At the very bottom of the Site Rules page we come to the final guideline, which says "Safe and Brave Space." This guideline is designed to wrap up our attitude orientation by highlighting again the different kinds of ideas and voices that we all bring to this space. This was also my way of incorporating our discussion in Chapter 3 where we talked about the importance and validity of using many different codes and modes to communicate research ideas. While this forum will still be a place of risk and challenge to our comfort zones, I think that explicitly inviting all kinds of language makes a move towards a more equitable online space. Here, I name this space as one that recognizes the many language varieties students may use in this space, and invites students to come as their full selves to these conversations.

<u>~Forum~</u>

As we again scroll all the way to the top and use the menu to navigate to the next page, we come to the core of the website – the forum itself. The forum page is located just off of the Home page and the Site Rules page because now that we have this positive and creative orientation, it's time to dive into the conversations taking place here.
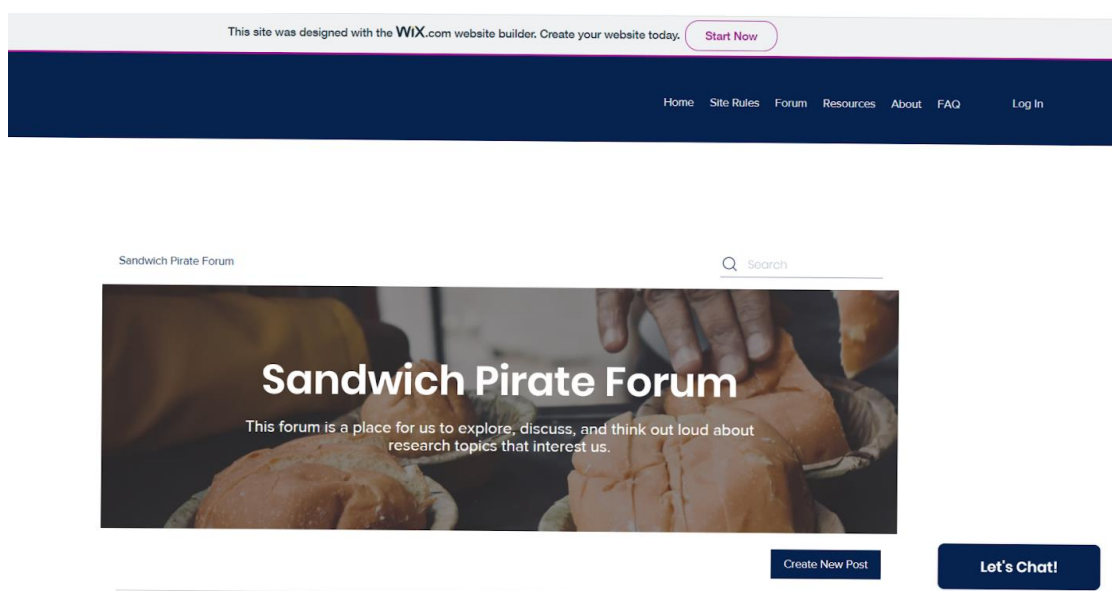

Figure 11: Forum page 1 of 9

At the top of the Forum page, we have large-text for the title of the space, which is called "Sandwich Pirate Forum." Again, we have a picture related to sandwiches (this time making the sandwiches), and we also have a small blurb that briefly reminds us what to do in this space. Even though we've used the home page and other places to frame how students might participate with this space, I think that when you click onto a new page

and you have the option of actually producing something, it's easy to forget what to do. The small blurb is there to help with that moment of transition.

Also at the top, we have two key features: the "Create New Post" button, and the Search bar. The "Create New Post" button prompts users to log in or create a free account using an email and a password. Once that's done, users write or compose a post and submit it to the forum. If they don't want to make a free account, they can still view all of the posts in the forum, but they won't be able to post anything themselves. The Search bar is a way for students to search through the existing posts in the forum. Currently, the search function checks all text for the key terms you enter, so students can search for content words, the title, or the username of the person who made the post. If those searched terms appear in a post, it should show up on the results list.
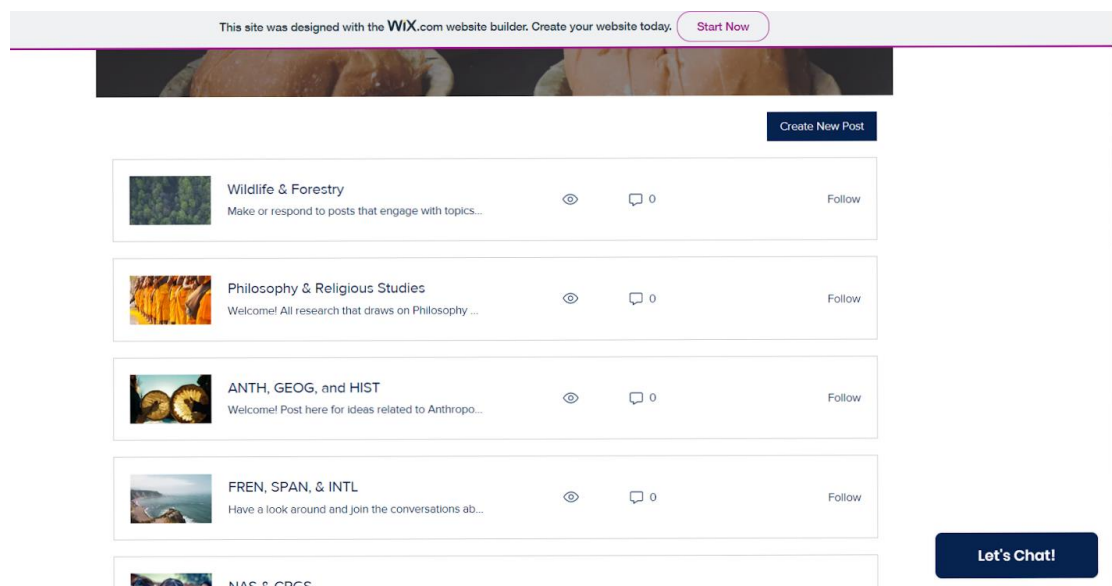

Figure 12: Forum page 2 of 9

As students scroll down, the organization of the forum becomes more clear. Keeping in mind the disciplines and majors that Cal Poly Humboldt currently offers, I chose to group academic conversations that I felt would have research topics in common. The point of grouping conversations is double-sided. Firstly, it mimics the research conversations that professional scholars have as they network with people from different disciplines and make important connections across similar topics. This infusion of different perspectives is fundamental to the enrichment that collaboration can bring to a research project, and this provides a simple but effective way for students to experience a variety of voices on research topics similar to theirs.

The second benefit to this grouping system is that it allows students to navigate between different fields and subjects as they search for interesting research topics to collaborate on or be inspired by. As I was imagining students using the forum, I tried to consider how the space would look and feel if many different students contributed posts. My conclusion was that if I didn't find a way to organize the conversations, the forum would end up as one massive collection of threads and posts, which would be both cumbersome and unintuitive to navigate. Using conversation themes to guide my organization, I feel, facilitates student exploration and makes many different subjects more accessible as users scroll up and down the page. I think that this creates interesting opportunities for students to stumble across topics and subjects they might not normally be a part of in their discipline. For instance, a Wildlife student might be curious and read through the forum posts in "Art, Film, Music, Dance Studies, or Theatre Arts" category.

One important implication of this organization is that you have to choose a method for grouping the subjects, which will be both a rhetorical and political decision. I chose groups based on my own limited knowledge of these subjects and what I know of the university's politics. For instance, I know that English and Education often have research topics that overlap or intersect in meaningful ways, and I know that Forestry and Wildlife share conversations of ecological systems and preservation. However, for some of the subject groups (like NAS and CRGS) common topics did not determine how which subjects got grouped together. Native American Studies and Critical Race Gender and Sexuality studies are particularly interdisciplinary fields, which have a broad range of meaningful connections and networks in many different communities on campus. I chose to group them together because I felt that they work closely with overlapping lenses of social justice, change, and community-centered enrichment and intervention. Across all of the groups in the forum we can see that my choices were constrained both by personal biases and by the political nuances of the disciplines themselves. In future research, the methods behind grouping these subjects could be narrowed, and the groups themselves should be adjusted to reflect the new majors that the Cal Poly designation has brought to the school.
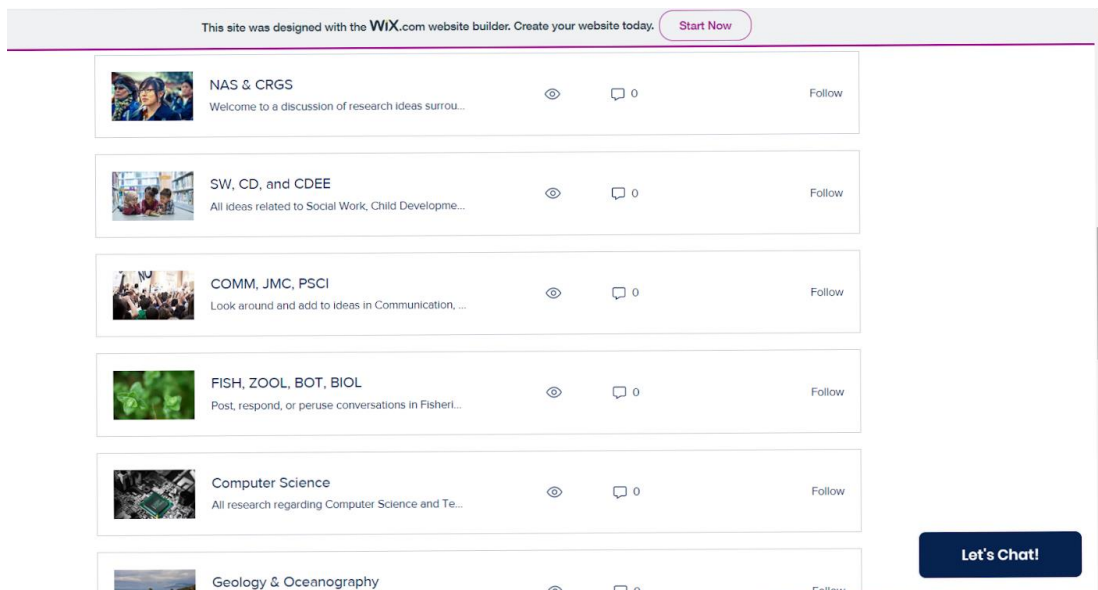
Figure 13: Forum page 3 of 9
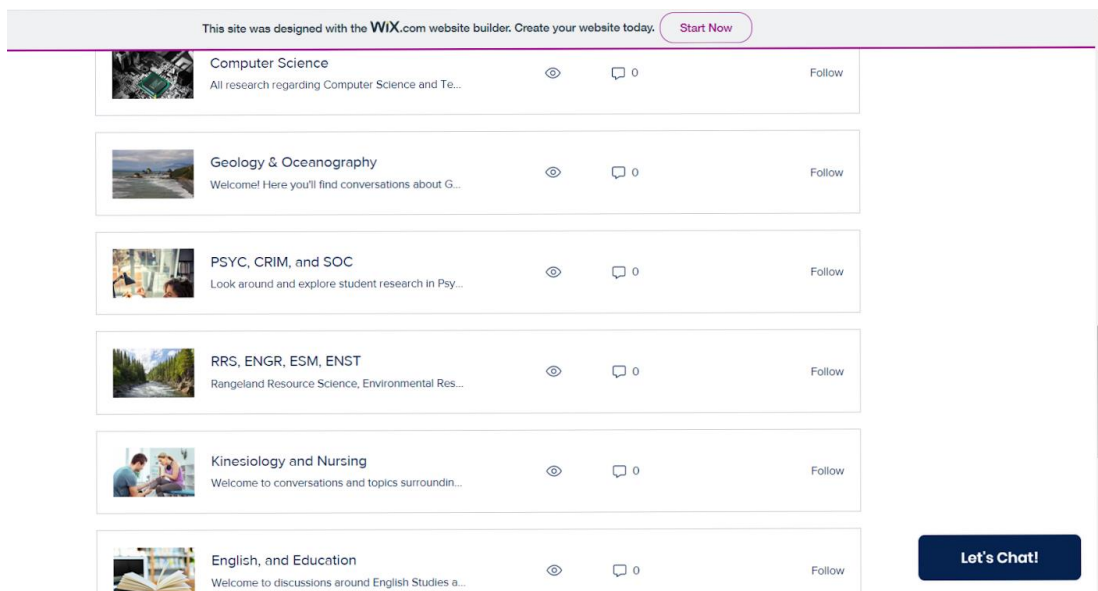
Figure 14: Forum page 4 of 9

As we scroll down the forum page, we can see that each of the conversation groups in the forum has a colorful picture related to at least one of the subjects in the group, a title that describes what the subjects are, and a small welcoming blurb that invites students to contribute to the discussion. The images are meant to draw your eye to each discussion group, and also capture at least some part of the conversation that might go on in each of the groups. All of the images are from Wix's copyright-free stock images or public domain photos from Google Image. For the titles of the groups, I was limited by Wix's character count so some of the titles have the full name of the subjects in the group, and others have the abbreviations found in the Cal Poly Humboldt course catalog. I used the mini welcome blurbs to spell out the full names of the subjects, which are more visible once you click on a subject group and view the posts there.

To the right of the image, title, and welcome blurb we can see three light-gray icons for each group. The first looks like an eyeball, and indicates the number of views each particular subject group has gotten. So, for instance, if I clicked on "Philosophy and Religious Studies" there would be a little number "1" next to the eyeball icon. The second icon indicates the number of posts in each group, and the third icon is a "Follow" button. The follow button allows you to sign in and follow the subject group, meaning that you can sign up for email notifications when a new post is added or someone replies to your post (an important feature for continuous engagement with the conversation as it develops).
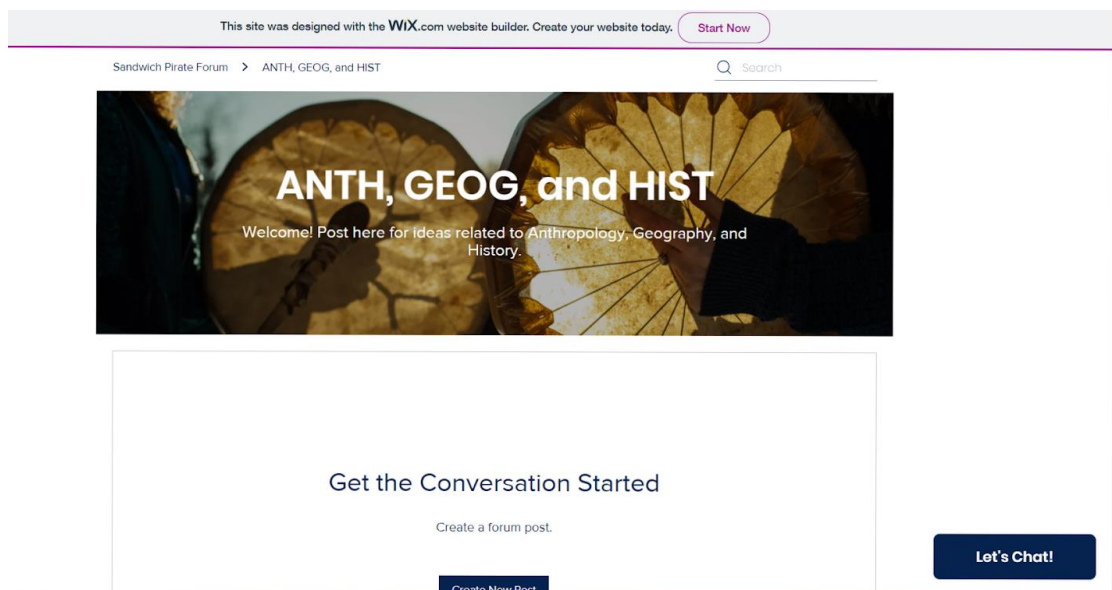
Figure 15: Forum page 5 of 9

If we click on the title of one of the subject groups, we come to a new page where the actual posts are submitted and conversations are made. The photo, title, and welcome blurb for the subject group have expanded to take up more of the screen, and the posts for the forum are listed below them in order of most recent, to oldest. In this case, there are no posts in this forum yet, so the page prompts users to start up a conversation. Students still have the option of using the Search bar on this page, which will quickly become useful if there are many conversation threads and posts to sift through.

If we click on the button labeled "Create New Post" we will be prompted to log in, and then directed to a little window where we can create and publish our ideas.

Figure 16: Forum page 6 of 9

This is an example that I made of how a student could use this forum to help think

about a project for their English 104 class. I want to point your attention to the multiple

modes of communication that are at play here. For any post, I am allowing students to

attach images, videos, dividers, HTMLs, code snippets, general file attachments, GIFs,

and Emojis. As you can see in this example of a student post, students also have the

option of using line spaces, fonts, and colors to add layers of meaning to their post. These

options speak directly to Chapter 3 by inviting students to come to this space with their

full range of languaging practices, and it also acknowledges that sometimes words are a

limited mode of expressing your ideas or your projects. For instance, if this student is

doing a project on the rhetorical complexity of a music video, it would be much harder to

talk about that with other students if they couldn't embed a link to the video or images of

certain scenes. I also think that this moment of inviting different modes of

communication contributes to my argument for seeing scholarship and research as valid,

even if it looks different than the traditional research paper.

Because you need to log in to be able to write out a post like this one, students

may notice that one they log in, the "Let's Chat" button changes to say "Members Chat"

instead. These buttons have two different functions.

Figure 17: Forum page 7 of 9

Figure 18: Forum page 8 of 9

"Let's Chat" allows users to send messages to the email inbox of the moderating student club/organization. "Members Chat" only pops up when students have logged into their free account, and it allows them to send private messages to each other.
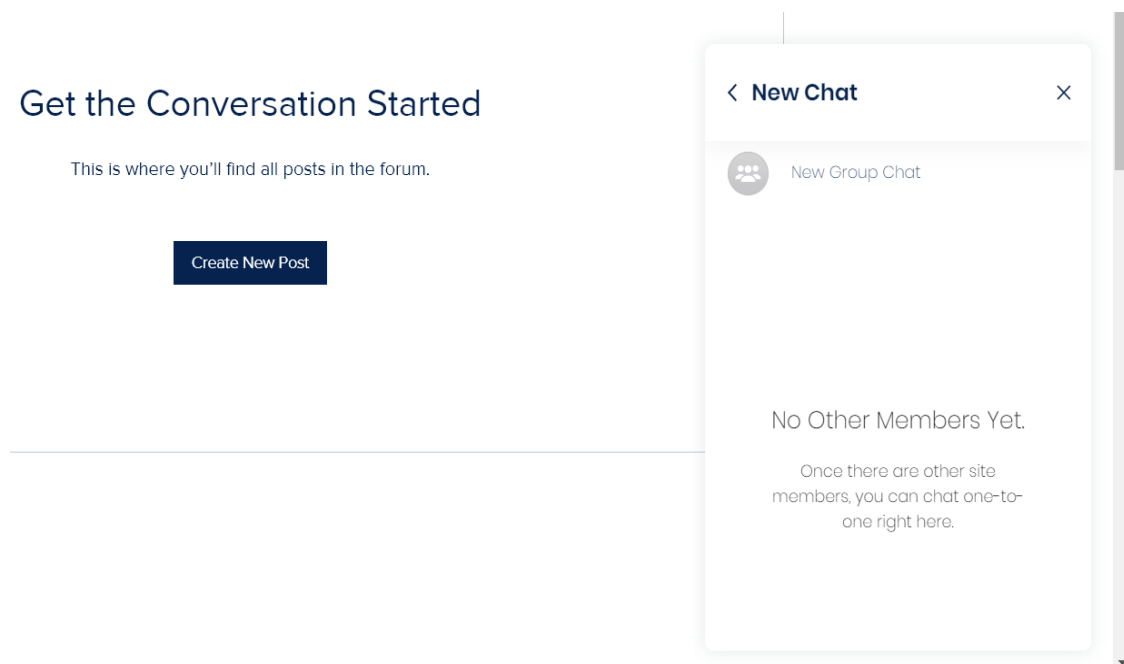
Figure 19: Forum page 9 of 9

When there are other students who have made free accounts, their usernames will be listed here and students will be able to privately message each other without

submitting a post to the forum. It also allows for group chats, where several students can

get together to talk about their ideas. This chatting feature is meant to give students an

outlet so that they aren't forced to fill the forum with many, many posts when they have a

good back-and-forth conversation going. It also just gives them another choice of

communication if they want to seek a more private conversation for other reasons. This

could be a spot to exchange contact information, or set-up meetings to talk about how

projects might overlap meaningfully.

~Resources~

The last three pages that we can find in the navigation menu at the top of the

website are really meant to give students extra information or support if they need it. The

first one is the Resources page, which lists out other resources available to them for help

with different steps of the research process.
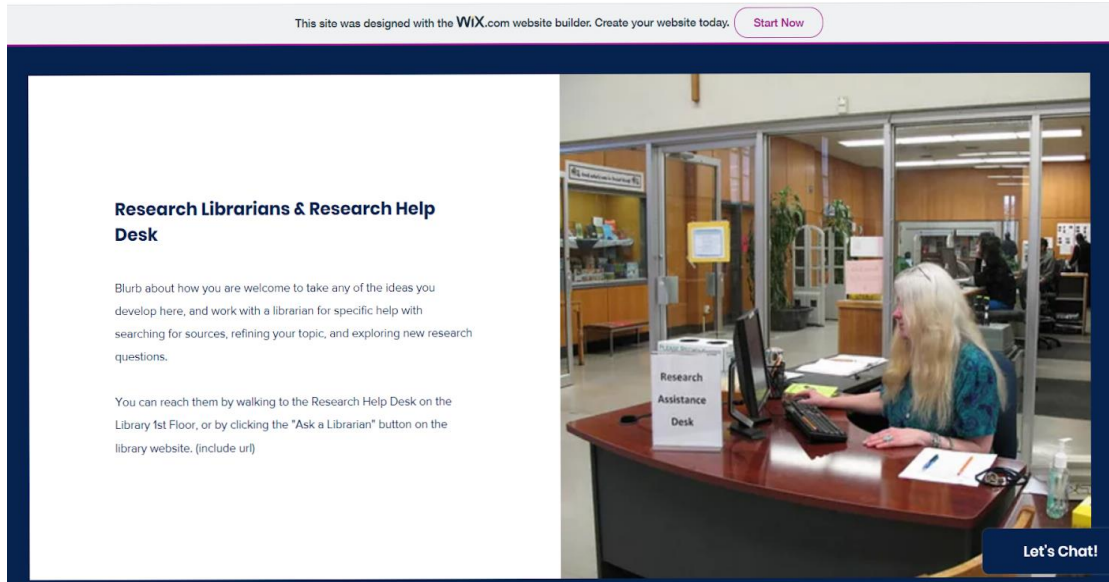
Figure 20: Resources page 1 of 3
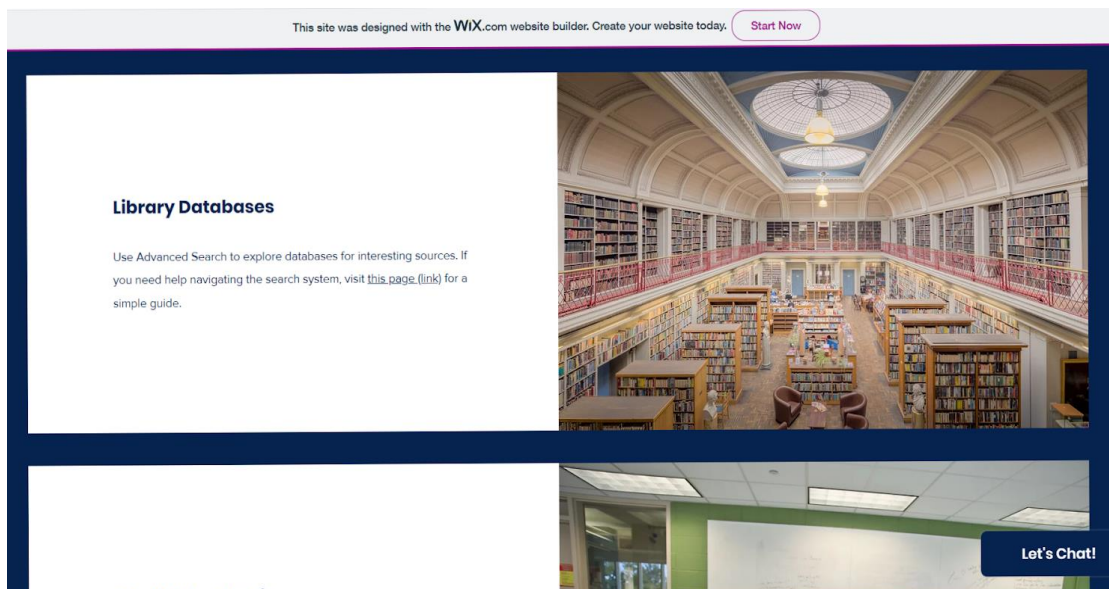
Figure 21: Resources page 2 of 3
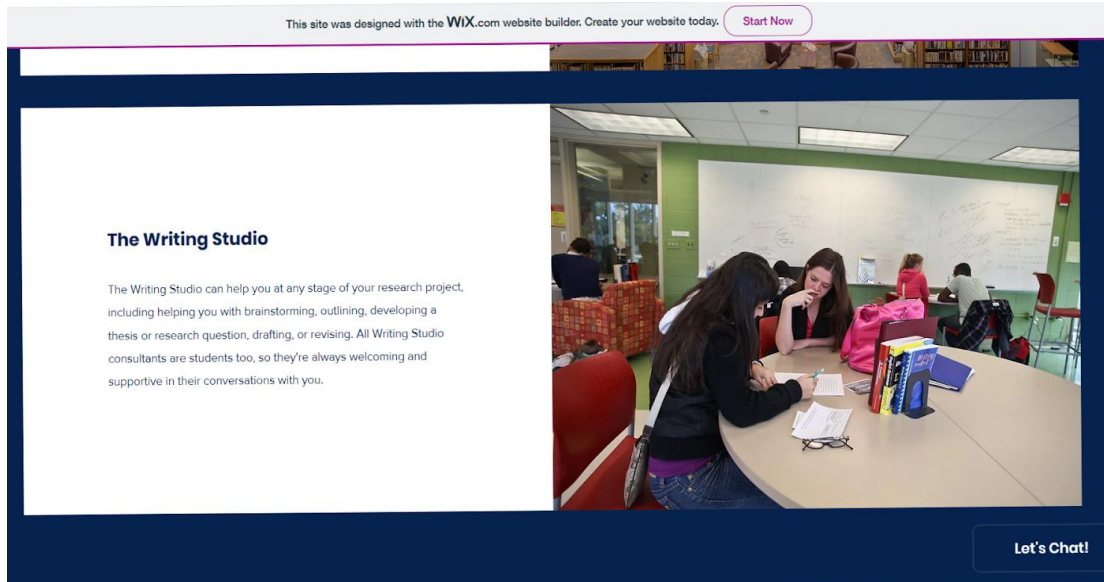
Figure 22: Resources page 3 of 3

For this page, I listed some of the resources on campus that might be useful for students to use as they work on their research projects. This includes the Research Librarians & the Research Help Desk, the Library Databases, and The Writing Studio. Ideally, each of these would be paired with a colorful picture of the resource, and an inviting informational blurb written by the people who represent the resources. For instance, the research librarians might collaborate to write a blurb about how students can find the Research Help Desk, and some of the ways that the librarians can help them with idea development or locating a scholarly conversation. One idea that I think would contribute to the friendliness and the usefulness of the space would be for research librarians and Writing Studio consultants to make videos of themselves explaining who they are and how they can help. Videos would make those human connections more

visible and hopefully help students understand that there are people on campus who want

to talk with them and offer support on research projects, no matter what stage of that

process they are working on. I also think that having the research librarians create an

informational video about how to use some of the library databases would make the

databases more approachable as a resource and make those searching strategies more

accessible to students. For this project, I did not implement these ideas, but I feel that

they would be important revisions for future work on this space.

~About~

The About page is the next option on the navigation menu, which I used to

respond to parts of Chapter 4 where I emphasize the importance of identifying the people

behind the construction of a digital space, and the intentions they have for it.
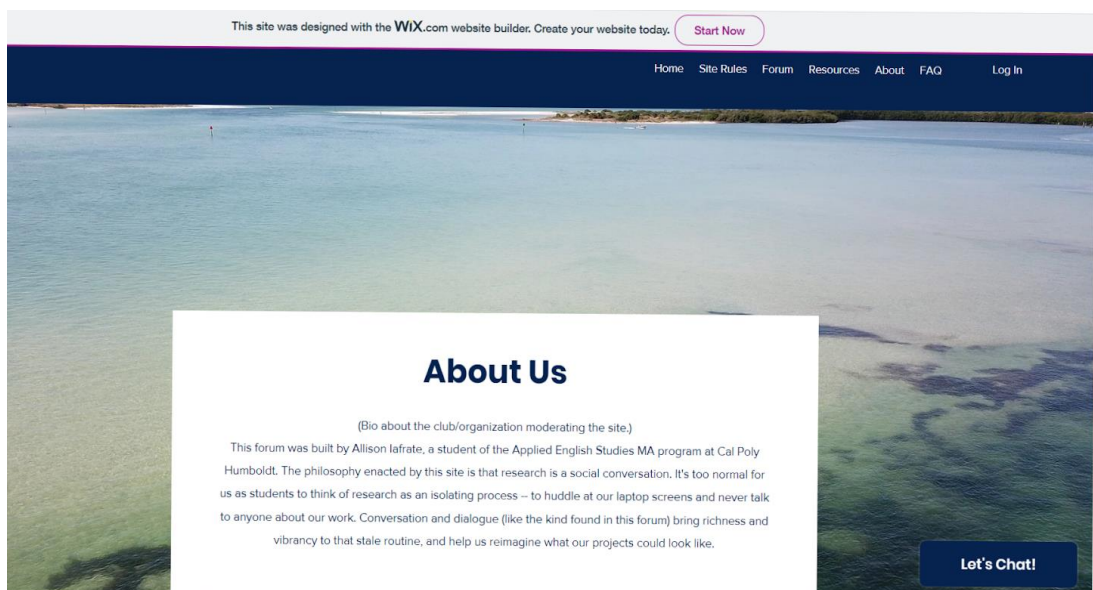
Figure 23: About page

The first part of the About Us section is a placeholder for information about the student organizations or clubs who moderate the forum space. It should be written by the student members of those organizations, and reflect their reasons for moderating and maintaining this space of research conversation.

The second part of the About Us section reveals a dimension of this forum that hasn't yet been voiced to the students who might use it. So far, the pages in this space have framed the forum as purposeful – as a place where we do things. We have discussed the engagement that might go on here, how we should approach the space with our attitudes and behaviors, and even a little about why we should do this or what might change if we participate here in the forum. It's important to point out, though, that this space was also created as part of a Master's project, and is informed by a particular

argument that I am building through *my* research. This About page is a move towards making that argument explicit, and positioning this forum as a rhetorical construction that is both a useful tool and a key piece of a larger argument about the nature of research in the university.

~FAQ~

The very last page on this website is the FAQ (Frequently Asked Questions) page, where I seek to address some of the concerns students might have about how to use the forum, or how to respond to a confusing or uncomfortable moment between users.
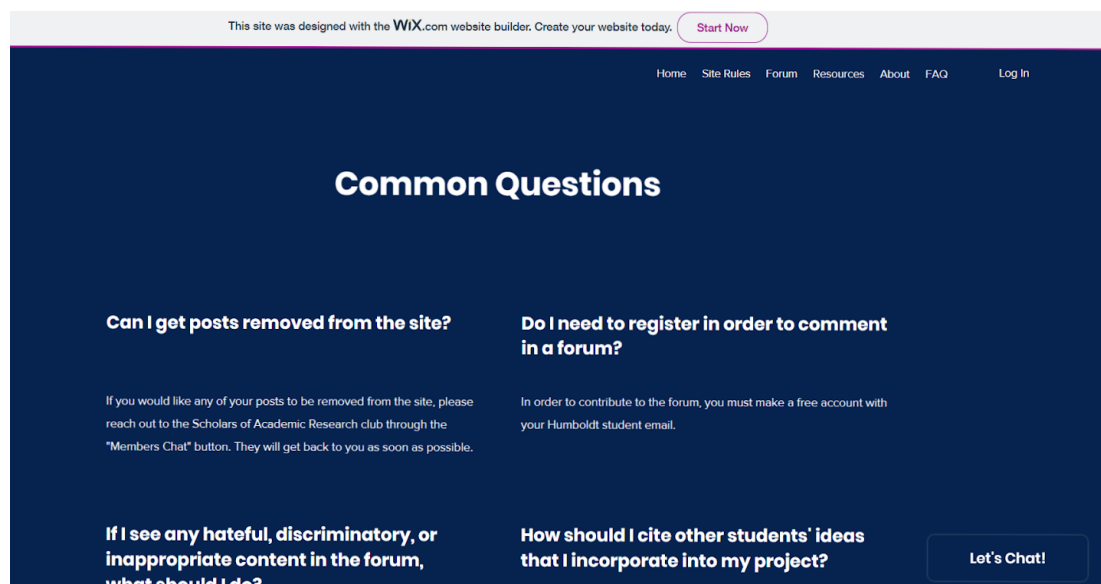
Figure 24: FAQ page 1 of 2
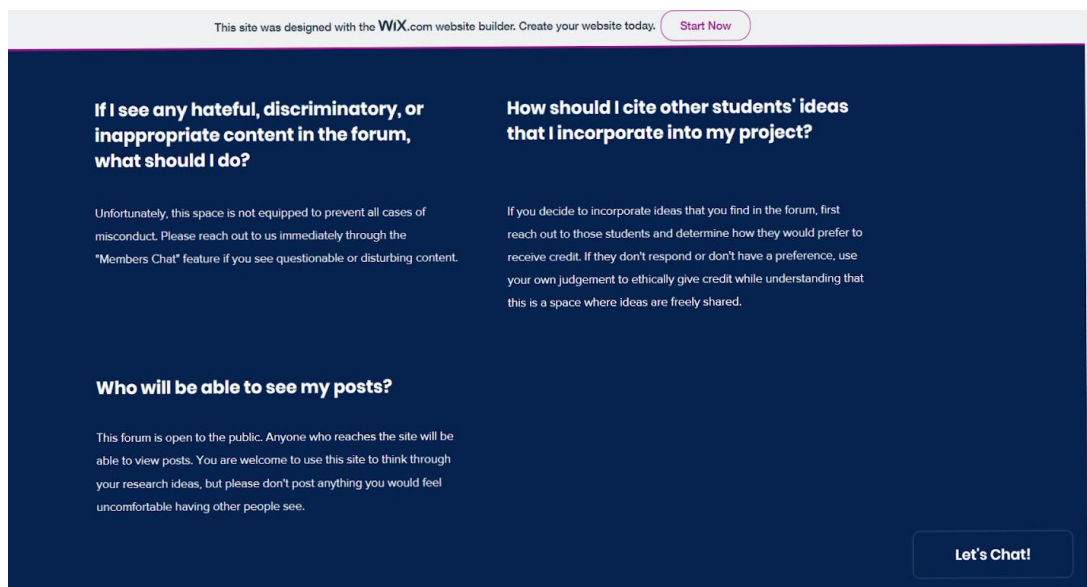
Figure 25: FAQ page 2 of 2

I want to briefly point out a few of the questions that I answer on this page. The two

questions "Who will be able to see my posts?" and "Can I get posts removed from the

site?" go hand-in-hand with concerns about publishing posts for the public (the internet)

to see. This forum is visible to anyone on the internet, and the posts that students make

will stay here as a record of their thoughts and ideas. These two questions, and the

answers that come with them, are a signal for students to think about the implications of

these facts, and also offer them a way to remove their posts if they want to.

The only other question I want to point out is "How should I cite other students'

ideas that I incorporate into my project?" This question is heavy with implications of

plagiarism, intellectual property, and university-sanctioned punishments for unethical

academic conduct. Students may come to this forum with concerns that touch on all of

these issues, particularly when this site directly promotes collaboration and open

conversation as valid research practices. This is a moment of friction between

"plagiarism" and "collaboration" which many scholars have pointed to and tried to

untangle, but for these students with immediate concerns about this forum and how they

should really use the conversations they have here, I couldn't address the entirety of the

political dialogue around this topic.

      I also realize that these issues are something all researchers face when they work

with other people – how to give fair and ethical credit, while allowing for true co-

construction of ideas (an issue that brings me back to the work of Andrea Lunsford and

Lisa Ede as they modeled and argued for co-authorship in writing studies). In my answer

to students, I suggest that they reflect on the question of how to cite ideas from this space

under the umbrella of two guiding thoughts: 1. Reaching out to the person you feel you

want to cite might shed light on how to do that, and 2. It's safe to operate under the

assumption that all students who take part in conversations here, do so with the

knowledge that ideas are shared freely here and might be used in other people's projects.

In this answer, I try to also acknowledge that citations and credit are ultimately used at

the discretion of the researcher. No one will be there to say to the student "no, you

shouldn't do it that way" or "the decision you made in this project three years ago was

wrong." Many of these decisions are internal and recurring as we continue to take on new

projects. My response to this questions gives the framework of an answer, but puts the

decision fairly into the hands of the student-researchers who come to this space, and

encourages them to use their own moral instincts to choose how to acknowledge the voices that have contributed to their work.

Category 2: Features that are Present, but Not Visible

As we come to the end of the pages on this website and we see the landscape of the space that I made, I want to now address some of the choices I made that are less visible but equally essential for the success of the forum. Firstly, this space is meant to be moderated and maintained by a student-run organization or club. This is a point we've touched on already as clubs have been mentioned on some of the site's pages, but here I want to lay out my reasons for choosing student clubs to take care of the space into the future.

Student Clubs

Because this space is part of an M.A. degree requirement, I will graduate and be no longer able to keep up with the moderation it would require. I wanted this forum to have the foundation to thrive beyond me, and beyond any single student who might take care of it. So, in an effort to find a semi-permanent home for the space, I considered associating it with branches of the university. One option I came to was the library. The library, many of us would agree, is the research hub of any university. It's where many students find important resources, search through databases and bookshelves, and seek help with their research projects. So, the content of this forum aligned with how many students already perceive the library and its relationship with research. However, the

more I wrote about the politics of the university (particularly Chapter 3's discussion of strict conventions for dominant modes of research), the more I realized that as an extension of the university, the library would inevitably impose particular agendas onto the space. These concerns drove me to the idea that this forum should not be too closely tied to any part of the university itself, but it should instead somehow be tied to the students who attend the university. I eventually landed on the solution of having student-run organizations take part in moderating and maintaining the forum space.

Many of the student clubs on this campus are active in advocating for social justice on campus, for meeting the dynamic needs of students, and for making connections between communities or organizations to better support students in different aspects of their lives. Additionally, clubs have close connections with students who are passionate about improving the university. This means that many of them might be excited about the research space and its possibilities, and that more students would know about the space and be encouraged to use it. Clubs turn over as students graduate from and enroll in the school, but they offer a space like this vibrancy and (relative) longevity. It might also be wise to choose more than one student organization in case one collapses for any reason. For the purposes of this prototype, I used the Scholars of Academic Research club (SOAR) as a placeholder for the student organizations that might, in the future, agree to maintain a space like this one.

The "Let's Chat" button on many pages of the site is meant to be a direct link to the student club email(s), which will allow students to get in touch with the clubs who moderate the space. This is the main method for reporting concerning posts or

misconduct in the forum, which is an inevitable concern in a space open to the internet. It's also a way for students to ask questions or seek more resources from the students who run the space.

Figure 26: "Let's Chat"

As we discuss back-stage choices that help support and give structure to this forum, I want to take the time to talk about why I chose to make free email accounts a requirement for submitting posts to the different conversations located here.

Email Accounts

The Site Rules page has guidelines that aim to prevent online trolling and misconduct in this space, and the "Let's Chat" button gives students a way of reporting behavior that the moderators (members of the student clubs) miss. Because I want this to be a vibrant, purposeful space, I wanted to add another layer of spamming/trolling prevention. In the early stages of building this space, I considered requiring each student to use their Cal Poly Humboldt login credentials in order to make a post in the forum. This would borrow feelings of authority from the university's codes of student conduct and, I thought, be one way to suggest that this forum is a place of valid academic

knowledge. Quickly, I realized that I did not want this site to be legitimately affiliated

with the university, because not only would that require a long and bureaucratic process,

but it would also stray away from the student-built and student-run purpose that I have set

for the space. As 'just another university website', many of the features of the space

would be reworked and the overall design would be changed to reflect university values.

Students may also come to feel monitored and regulated in the space, rather than invited

to participate together openly.

If this space is not affiliated with the university, then we can't require students to

use their login credentials. So, for this prototype, I have decided to just require some kind

of email login before a user can contribute to this forum. This means that all visitors to

the site can view the forum discussions, but to contribute to them you have to make a free

account using an email and password. An email account is completely free to create, and

although it adds a layer of complexity to using the forum, it also adds a layer of harm

prevention by creating that extra step for users to take before they can post their

message.

In the future, I think it would be ideal for students to use their Cal Poly Humboldt

school emails to make these free accounts. First of all, I think this is a good choice

because by asking students to use their school emails to make an account or log in before

they make a post, we are loosely tying the space to the codes of conduct the university

enforces without necessarily imposing university structures onto the space. Secondly, this

move would invite students to activate their scholarly/student identities when they come

to this space, which helps enact an atmosphere of academic validity that is so important

to the argument behind this research forum. One way to ensure that students use their school emails might be to require that user emails include *humboldt.edu*.

Category 3: Features I Wanted to Include but Couldn't

Here are a few additional features or strategies that I think would benefit this space, but due to my resources and the scope of this project, I wasn't able to include in this prototype.

- **Other digital sites/tools that could make a great forum space.** I used Wix as my website-builder because it's free and has a user-friendly, intuitive design. Wix allowed me to make a prototype with my limited website-building experience and it provided a free domain for the website to be supported on, but there are many other tools that could make more dynamic iterations of this space with more of the features we want to include. For instance, I've had many great experiences with Discord, but for a research space I didn't feel like Discord had a good enough system for organizing and navigating student posts. Every digital site/tool will have benefits and drawbacks, and I recommend exploration as we look for what best suits the space we want to create.

- **Use the homepage to display previous research projects.** Right now, the homepage is inviting with colors and language, but it's a bit static. I would've liked to incorporate videos or moving pictures that show real people who have

found this space helpful for them. These could be short interviews with students,

videos celebrating the project they made, or pictures of final research products

(posters, flyers, presentations, etc.) This is a moment where we can illustrate that

this space is for real students to pursue ideas that they find worthwhile, and it's

also a moment to highlight the different forms scholarship in this space can take.

This could be a moment to showcase scholarship that resists dominant narratives

as well – research that centers student voices from the margins, from the ground

floor, or from communities that are traditionally seen as subjects of research

rather than authors of it.

- **Displaying announcements or upcoming events related to research.** This

  could be on the homepage or maybe on the additional resources page, but I think

  it would be great to advertise cool research events including key-note speakers,

  networking opportunities, or Skillshops on campus. These could provide extra

  moments of important inspiration and collaboration for student researchers.

- **More dynamic search systems.** The search bar we have in the space right now

  allows students to search for key phrases or terms, and find posts that use them.

  This only works if the student knows what they are looking for. To help with

  exploring the forum, I think it would be helpful to have a feature that lets students

  search for classes (for instance, BIO 110). This would help students who have a

  large research project due for class because they might find students who have

used this space to create a project for the same assignment. It could also lead them

to students who are also taking that class right now and are working on the

project, opening up opportunities for collaboration.

- **Sticky notes.** These would look like real sticky notes, where you could choose a

  color and attach it to a post. The idea behind this is for when you think the author

  of a post is onto a really great project idea, but you don't have anything

  substantial to add. You could post a sticky note with one or two words on it to

  encourage them without feeling like you have to say more (examples of sticky

  note words could be: "Cool!" "Nice!" "Thoughtful!"). These could have character

  limits or could be selected from a premade word bank.

- **Report function**. Just in case students spot inappropriate posts/replies before the

  moderators do, I think it would be a good idea to have a report function. Right

  now, students can send a message to the student club email through the "Let's

  Chat" button, but I think it would be good to have a more obvious method of

  reporting. "Let's Chat" doesn't sound like "Here's where you go to report

  malicious/hateful content." Once the moderators are alerted to posts that violate

  the site's guidelines, they can choose to remove posts and/or ban users.

- **Mobile-friendly design.** This is an important aspect of accessibility for many

  students because not all of them will have laptops or computers that they can use

to access the site. Making the forum mobile-friendly also makes it easier to respond to posts throughout the day and adds to the likelihood that students will maintain sustained engagement with the space.

- **Alt-text and text-to-speech.** For accessibility purposes, every image on the site should include alt-text, and each webpage or forum post should be compatible with software that does text-to-speech conversions. It would be an added bonus if this space offered built-in text-to-speech so that users don't have to apply third party software to engage with the site. It might also be a good idea to incorporate instructions for students who might find these accessibility features useful, but don't necessarily know how to use them.

- **Using clubs to help with marketing.** Marketing is one of those things that I thought about but didn't become vital because the space I made was never going to be fully published. If I was going to publish this space, I would rely on clubs for the majority of the marketing it would take to get students to come to and use the forum. Clubs are a reliable way to find students because they have close connections with students who come together to work on club projects. Those tight relationships might ensure that a number of students (albeit a small number) use this space meaningfully. Each student in a club also belongs to many classes each semester, so that could be a great way for students to spread the word about the space. A digital space like this which relies on collaboration needs high levels

of traffic to succeed, but it's also important to consider the right avenues for students to learn about this space. They are much more likely to come and make use of the space if they hear about it through real student-to-student conversations, than they are if they hear it through their academic advisor or professor.

<div align="center">Category 4: Features I Intentionally Chose Not to Incorporate</div>

These are additional features that I considered, but ultimately decided to avoid for particular reasons.

- **Character limits for forum posts.** While the point of the forum isn't to write out an essay, and it could dissuade other students from reading your ideas if you make a post that's too long, my exploration of other collaborative digital spaces tells me that adding a character limit is not the answer. In fact, character limits are one of the most hated features for many forum-like platforms (particularly on Twitter). Conversations, particularly conversations where you are trying to parse out complex ideas on a topic, are messy creations and sometimes get lengthy as we follow meandering trains of thought. Character limits force that messy creation into unnecessarily small boxes, which students will simply work around by making multiple posts. I propose that we don't have limits, or if we do, we should make them a huge number of characters that no one would probably reach in a single post anyway.

- **Following, unfollowing, liking and disliking.** This was not something that I pointed out in previous sections, but in this prototype there are a number of customizations students can make to their profile when they sign up for a free account with their email.
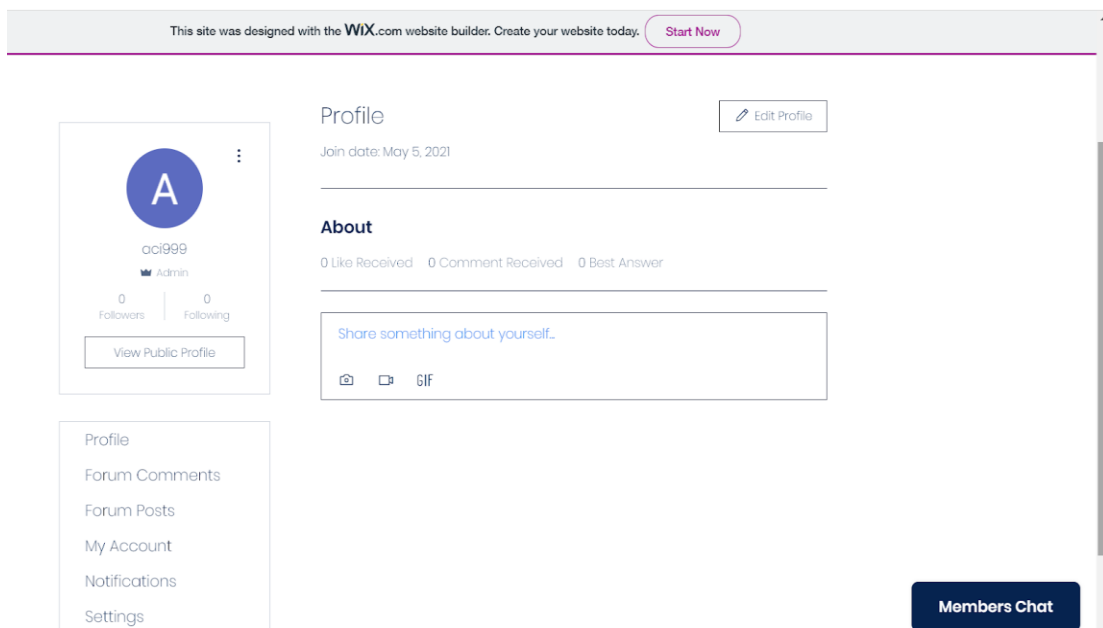
Figure 27: Profile

For instance, they can upload a profile image, add small bios about themselves, view all of the posts and comments they have made in the forum, and manage their notification settings. I have disabled the features that allow students to follow or unfollow other students, as well as the features for liking or disliking a post. I think that these are unnecessary for this space, and could create dynamics

of power that are not necessarily beneficial for the students who come here to

voice their ideas.

- **Using class requirements for marketing strategies.** Classes are an obvious

place to reach out to students about a new resource, but I strongly believe that this

site should never be used as homework, extra credit, or some other classroom

requirement. Despite its meaningful benefits for student researchers, this space

will not be everything it's meant to be if students don't see it as "real." Coming to

this space to quickly write out a post and publish it for extra credit in my class

will not help me develop my ideas, have a conversation with other students, or

find new moments of inquiry for my project. For this reason, I think it's important

for students to be internally motivated to help each other and seek conversations

in this space. Marketing and outreach will need to carefully balance the need for

many students to engage with the space, and the impressions different outreach

strategies will have on how they participate in that engagement.

<div align="center">Limitations of this Space and Calls for Future Research</div>

This prototype is not perfect, and if it is ever made into a published digital space,

that space will also be imperfect in many ways. As it exists now, this prototype is

informed by the research I conducted and the theoretical frameworks that surround my

project's design, but of course, we have no guarantee that it will live up to its potential.

There will almost certainly be problematic design mechanics or aesthetics that I overlooked, and it's possible that even with a flawless surface design, it simply won't be used by students. Once published, I have very little control over how successful this space will be in meeting the goals I have set for it.

It's also beyond the scope of this project to include any follow-up assessments of the site's long-term success or failure, but I would encourage that work to be completed in the future. As it is now, I intend for the site to stand as an extension of my research and a practical visualization of the ways that we might shift student perspectives of research and collaboration, but in no way do I expect that it will be a final or finished iteration of these research questions. If I were to imagine an ideal future for this space, it would be one where the space is polished, published, and maintained so that it can be useful to Cal Poly Humboldt students. As students come to this space and use it in different ways, interviews and surveys would provide meaningful insight into how this forum changes student perceptions of research practices (if at all). Longitudinal studies that follow students as they use this space and develop their researcher identities over the course of a few semesters, I'm sure, would also bring vital student perspectives into this ongoing conversation.

NARRATIVE

In this section, I talk through the story of how I came to this project as a person, a student, and a scholar. I want to take the time to be transparent about my positionality and how it affected the orientations I brought to this project, and also to outline the tense and invisible work of planning and completing a project of this size.

I want to start by saying that my Master's program didn't make room for the kind of conversation between students that I talk about in this project. The closest that I can think of, really, were the conversations we would have in the hallway before class, and the ones after class as we walked to the parking lot in the cold night air. For each of these, my classmates and I would talk excitedly about the ideas we didn't finish hashing out in class, or some cool angle on our projects that we hadn't thought of before. We never had enough time or space to finish these conversations, no matter how great they were or how fired up we got while we walked to our cars.

I came to this program in kind of a unique position in that my original cohort was very small (there were only five of us) and by the end of the first semester, there was only me and one other classmate left. The program was challenging, and many of us felt that it may not have been right for us, or that we weren't right for the program. In fact, many of us were weighed down by the thought that we weren't right for graduate school at all – that we weren't smart enough, dedicated enough, or skilled enough to succeed in such a challenging environment. My classmate and I (his name is Aaron) listened to lectures in classrooms full of empty seats and participated in discussions made up of only three or

four voices. When a new cohort entered the program, it was a relief to have more people

to talk with, but it was a strange situation because now we were in Fall of 2020 and

Covid-19 had caused significant changes to all of our lives, including moving our

education online.

The further we got into the semester the more we realized that, now that we were

online, we didn't even have those moments in the hallways before and after class

anymore. We were trying to make connections and have conversations, but an online

classroom just didn't have room for what we were looking for. So, we decided to create a

Discord server. The idea was that the server would be a space to keep in touch and to talk

about classes, readings, or anything else that we wanted to bring up. As time went on, we

changed the server to meet our needs – we added text channels for us to introduce

ourselves and a bit about our backgrounds, channels to upload parts of our M.A. projects

and talk about them, channels to talk about good news from the outside world of family

and pets and food, and voice channels to call each other and hang out after long days of

work and school.

The more we used the Discord server, the more it became a vital part of our

experience in the program. We used it to post links and resources, to connect over

homework, to continue discussions that we didn't have time for in our classes, to

celebrate our presentations or commiserate over our work loads, and to make plans to

spend social time together outside of school. For those of us who didn't live in Humboldt

County, the Discord server also became the place where we hung out together. We used

voice channels to talk to each other and play multiplayer online games – it became a

place of laughter, teasing, and social connection amidst our academic struggles. I wouldn't call what we made a "research forum" exactly. It's perfectly suited for sharing pieces of our projects and talking through what we're thinking, and we do use it for that, but it's also become so much more. I've made lifelong friends in this place, and will always remember how wonderful it has been to work with them as classmates and colleagues.

This part of my life – the connections I've made in this digital space and the people I've met there – made me think more about how much it would have meant to me if I had had this connection and support as an *undergraduate* student as well. At the same time, I also thought about how much more difficult completing this M.A. program would have been, if I had not had this space of peer support. This is particularly true if I reflect on the fact that our classes were online for two years; online education makes those connections even more important, though it also makes them feel more out of reach.

In another part of my life as a student, I have been a consultant in the Writing Studio on campus for about three and a half years. In the Writing Studio, I have had the great pleasure of collaborating with graduate and undergraduate students from a variety of disciplines. Most of the time, this collaboration looks like two people laughing and working together at a table while we brainstorm ideas, create outlines, synthesize sources, and just talk out loud about what we're thinking as we look at the project together. Most students who come to the Writing Studio are surprised at how valuable they find the sessions, and most share before they go how relieved and confident they feel after having that moment of support and connection. While these good feelings are great to be a part

of, the fact that students are surprised by how helpful it is to talk with someone else tells me that many of them aren't finding this support in their programs.

Unfortunately, the Writing Studio is limited in how much it can do to create these moments of support. As is the case for writing centers everywhere, many students just don't come to the Writing Studio. If they do come in for sessions, often students will come with priorities and expectations that are very different from collaborative conversation. By the time they come to us, many students are knee-deep in research frustration, or have suffered through that frustration alone and are now coming for feedback on a written draft. This problem has partly to do with the university's approach to isolation and performance, and partly to do with the perception students have about what the Writing Studio is for. Most students assume that they have to have a polished draft before they even think of braving the outside world of feedback.

That frustration and isolation students express in the Writing Studio resonates with me on a deeper level, too. As a graduate student, I have certainly spent time alone, anxious, and unsure about my academic performance – whether I was doing enough, thinking enough, or was simply good enough to succeed here. When I started thinking about engaging with the idea of academic research for my M.A. project, I was energized by the fact that I would have loved having a collaborative digital research space. It would have been incredibly valuable to me to be with other students and just talk through what I was thinking as my ideas for my project changed. I was lucky enough to have thoughtful mentors, but there's a difference between talking to an advisor/professor and talking to people who are going through challenges similar to yours. In my view, graduate students

in particular have a real need for a place to communicate their research ideas, and receive

feedback and support in collaborative relationships that are less fraught with differences

in social power.

The combination of these experiences – the isolation I felt in my first semesters as

a graduate student, the enrichment I found with my classmates in our cohort's Discord

server, and valuable conversations I've had with other students in the Writing Studio –

was, now that I'm reflecting on it, the exigence of this project. I was compelled to

develop a framework for a digital space that could give students a place for peer support

and low-stakes collaborative exploration.

—--

When I started my project, I used this as my guiding research question:

> How might digital spaces help us understand – or make explicit for us –
> the ways in which we already conduct academic research in informal and
> deeply social ways?

This question was the beginning of my dive into how and why we should use digital

spaces for this work. A few of the question's pieces were also important markers for my

approach to this topic – for instance the "how *might*" part pointed to this project as an

exploration of how digital spaces are already being used for social academic connections,

but also that this project would be an exploration of what we can do to understand

research differently in the future, and therefore how digital spaces might help us radically

change the way we think of research in the university. As my project developed over time, my topic began to also encompass the ways in which digital spaces might help resist traditional concepts of scholarly work, and broaden the ways of knowing and thinking that are valued in the university.

My goal for this project was never to "answer" my research question in any definitive way, or to attempt an exhaustive analysis of all that digital spaces are capable of. Instead, it was always designed as an exploration into these issues and some of the voices who are already part of this conversation. At the same time, while this project is framed as an exploration, it was also very important to me that it did real work in response to the topics I explored. I believe strongly in doing research with an intention towards change, which is why this project culminated in the creation of a digital prototype of research and collaboration. I wanted to have this project open up interesting conversations about "valid" research and knowledge in the university, but I also wanted it to produce a tool (or at least the blueprints for a tool) that could be used to fill this need for collaborative student research spaces. A healthy balance between scholarship and functionality/purpose was essential to my vision for this project.

As a tangent of this idea of functionality and purpose, another philosophy that I tried to enact through this project was being kind to my readers. Throughout the different chapters and sections of this project, I wanted to maintain a tone that was interesting, but not overly dense. I have always admired scholars and research-writers who explain complex ideas in language that's approachable and grounded in a conversation with their audience. I chose to put in things like summaries, signposts, and sub-headings because

those are the things that make reading scholarship easier for me. I wanted this project to be understandable and functional as an exploration of a topic and conversation that we can follow and engage with.

In addition to the importance of functionality and scholarship, I was also guided by two theoretical orientations which I brought with me to this project. The first was given to me by Kenneth Bruffee in his arguments for thinking of collaboration as a fundamental mode for constructing knowledge. In his view, all forms of meaning are already collaborative as we talk to each other, write to each other, and think to ourselves in a way that brings in voices from other people. He used this orientation to critique the Western university, which often pretends that isolation is a more natural form of knowledge-making. I used Bruffee's understanding of collaboration to point to academic research as an ongoing collaborative and social discussion, and to the ways in which we should use digital spaces to make that sociality more tangible for university students.

The second theoretical orientation that I brought with me came from my own understanding of digital spaces in my personal life. I'm part of a generation who grew up with technology (or at least sort of, I'm the age where I didn't really start being active online until I was in late middle and early high school), and a lot of my early social time was spent with people online. Because of those online experiences, I understand digital spaces as a real part of our lives. As the internet becomes more essential to our daily activities, I see these moments of digital social engagement as real social situations that we inhabit and are shaped by. So, in addition to thinking of the importance of

collaboration in the way we make meaning together, I also wanted to emphasize digital

spaces as valid sites for that meaning to take place.

—--

      During the process of this 3-year M.A. project, the most persistent ethical struggle

I was confronted with had to do with my whiteness, and understanding that the digital

space I made will risk alienating, misrepresenting, or in other ways causing harm to

students who don't share my white privileges. On one hand, success in the Western

university is tied to systemic racism in convoluted ways. This makes students who are

denied unearned privileges by the system much more likely to be marginalized by the

insistent performance of a 'white intellectual' and be much more in need of validation

and support in their academic careers. On the other hand, part of my ethical struggle is to

not allow this truth to transform into a perception that only sees these students as victims

in need of saving. As capable and intelligent individuals, students of color don't need a

savior to swoop in and 'rescue' them – an incredibly insulting and stereotypical image.

Instead, I wanted to frame my work around inviting students of color to creatively use

their wealth of knowledges and embody their many identities as they seek academic

support.

      Of course, Covid-19 also created another dimension to this conversation because

with online classes, feelings of distance and isolation were exacerbated to an

unprecedented level. Slamming into the forefront of our collective attention was just how

much all students need emotional and intellectual support from their communities in order to succeed in higher education. In this context, it made sense to have moments of research collaboration be digitally accessible, so that students can find that support and belonging whether they take classes online or in-person.

In addition to considering my own whiteness and how it might affect the intentions I have for this project, I was also pointedly aware that my whiteness is not something I can change. I'm not able to erase it as a physical embodiment of historical trauma and oppression, but what I *can* do is be clear and honest about my positionality, and continually interrogate the intentions/assumptions that inform my project. A guiding thought, then, was that the more honest I am about the ideologies I knowingly or unknowingly tap into, the more I will be able to use my project to resist, rather than reinforce, harmful stereotypes.

As part of my process, I also made a conscious effort to incorporate conversation and feedback from a number of different people in my life (all of whom I will thank in more detail in the Acknowledgements section). Feedback felt like a vital part of this project because the core of what I'm proposing is centered around the importance of collaboration and dialogue with other people. It would be strange if I completed this project all alone, but at the same time advocated for other students to use collaboration in *their* research projects. Feedback, conversation, and incorporating different perspectives were also part of my strategy to hold myself accountable for my biases and unvoiced assumptions. In conversation with other people, I was better able to identify gaps in my thinking and to propose well-rounded support for students.

ACKNOWLEDGEMENTS

I want to use this last section to acknowledge all of the feedback, the patience, and the incredible support I received from the people in my life. Without all of you, I would not have been able to accomplish what I have – thank you.

—---

First, we start by naming my most important supporters. Thank you to my family who patiently listened to me ramble on about how 'researchers work together and how students should be doing that too!' Even if I didn't always make much sense, getting my words out there and hearing your thoughts about it was so valuable to me and my project as it developed. I can't thank you all enough for the endless supplies of food, patience, and time to be by myself in hermit-writing mode. Thank you, too, for all of the welcome interruptions just to make sure I'm still alive and kicking, the rainy trips to the beach, the sunny garden afternoons, and the murder mystery shows. Thank you for always being there to celebrate chapter milestones, completed revisions, and good feedback I received from professors – thank you Mom, Dad, and Jose (Sisk School clap!)

—---

A special thank you to my Mom, who always did the most to listen to me about my work, and encourage me with long conversations on afternoon walks. You read every single paragraph of every single chapter and section (even though you were afraid to touch my laptop and mess something up haha). You gave me more to think about every time you stepped into that audience role, and I can't thank you enough for all of the honest kindness and support you've given to me – not just for this project, but for everything else in my life too. Love you, Mom.

—--

Thank you to my Dad, too, for always cooking up something warm and delicious especially after I'd had really long days, for driving me to those late-night classes, and for always believing that I could do it. Thank you for commiserating with me when I needed to rant about the challenges I was facing, and for cheering for me when I accomplished something special. You always make me feel proud of myself and what I'm doing (and embarrassed when you brag about me to the rest of our family!). Love you, Dad.

—--

And of course, thank you to my significant other/best friend Jose, who always cheers for me the loudest, hugs me the hardest, and supports me 1000% through everything I try. Thank you for putting everything else on hold when I need to talk, for making me laugh

when you know things are hard, and for smiling with a big, proud smile when I accomplish something special. Thank you for driving me everywhere! For playing with Charlie in the yard with me, and for being excited to share new things with me. I couldn't have done it without our conversations, our late-night video games, or our wake-up-the-neighbors laughter. Thank you so much. Love you, hun.

—---

To my committee, Dr. Janelle Adsit and Kimberly Stelter, who, despite their busy schedules and overwhelming workloads, both took the time to read the different pieces of this project and have conversations with me about how it was taking shape. Listening to their perspectives on my work, their questions and ideas, gave me confidence that what I was doing was worthwhile and motivation to continue. Thank you so much for your generous feedback and constant support.

—---

A special thank you to Dr. Janelle Adsit, my committee chair and long-time advisor. I can't tell you how much our meetings meant to me over the course of this project. I would come to your Zoom room basically ready to cry, and you would give me such warmth and support that I would always, without fail, leave our meeting full of relief and confidence that I can keep going. I am constantly impressed by your kind approach

towards your students, the endless support you give in different directions on campus, and the care you put into your multiple roles in the university. I feel truly honored to have worked with you. Thank you :)

—--

Thank you, too, to Kimberly Stelter who was always ready to support me through email, Zoom calls, and spur-of-the-moment meetings in the library. Our conversations helped give my project structure, and always gave me new ideas and perspectives to consider. I always came away from our meetings with a page full of notes to think about. Thank you especially for all of your help with the digital prototype. Talking with you and thinking about the space from different angles made the building process more complex and more worthwhile. I really appreciate your honest and supportive approach – I always felt that you were there for me if I needed you, and that you were ready to help me find valuable resources to help guide my ideas. Thank you.

—--

A brief thank you to all of the caring and intelligent people in my cohort of English graduate students. I have had some crazy conversations with you all, and I have loved every minute of it. From our gripes about professors, to our laughter in Among Us, to our relaxed hang-out vibes on movie nights. Many of the ideas I had for my project got

reshaped and refined through our conversations in class and on Discord, and I want you all to know that I value so much what we have built here in our little corner of the world. Thank you Aaron, Cole, Kim, Nic, Anne, Mireya, Adam, and Linda.

—--

Another thank you to Dr. Jessica Citti, my boss in the Writing Studio, who always made coming into work an enjoyable and worthwhile experience. Thank you for being so flexible with my hours, for challenging me to take on new roles in the Writing Studio, and for always being there to talk if something happened or if I needed support. I can't tell you how valuable it was for me to be able to work with you, with the wonderful consultants, and with so many students. It's given me some much-needed perspective on my own work, and given me the opportunity to work collaboratively with some amazing people. Thank you so much.

—--

A final thank you to the professors I've had the privilege of taking classes from in this program – Dr. Lisa Tremain, Dr. Janet Winston, Dr. Michael Eldridge, Dr. Janelle Adsit, and Dr. Andrea Delgado. Thank you for the time you take to create interesting and engaging discussions, for the respect and interest you always show to your students'

ideas, and for the new directions your classes challenged me to take with my own project.

It's been a privilege to learn from and with you all.

—--

WORKS CITED

Abramo, Giovanni, et al. "Research Collaboration and Productivity: Is There

Correlation?" *Higher Education*, vol. 57, no. 2, 2009, pp. 155–71. *DOI.org

(Crossref)*, https://doi.org/10.1007/s10734-008-9139-z.

Adams, James D., et al. "Scientific Teams and Institutional Collaborations: Evidence

from U.S. Universities, 1981–1999." *Research Policy*, vol. 34, no. 3, 2005, pp.

259–85. *DOI.org (Crossref)*, https://doi.org/10.1016/j.respol.2005.01.014.

Allan, Elizabeth G. "'Real Research' or 'Just for a Grade'?" *Pedagogy*, vol. 18, no. 2,

2018, pp. 247–77. *DOI.org (Crossref)*, https://doi.org/10.1215/15314200-

4359181.

Arora, Payal. "Typology of Web 2.0 Spheres: Understanding the Cultural Dimensions of

Social Media Spaces." *Current Sociology*, vol. 60, no. 5, 2012, pp. 599–618.

DOI.org (Crossref), https://doi.org/10.1177/0011392112440439.

Baldy, Cutcha Risling. "The New Native Intellectualism: #ElizabethCook-Lynn, Social

Media Movements, and the Millennial Native American Studies Scholar." *Wicazo

Sa Review*, vol. 31, no. 1, 2016, p. 90. *DOI.org (Crossref)*,

https://doi.org/10.5749/wicazosareview.31.1.0090.

Benson, Angela, and Deborah Blackman. "Can Research Methods Ever Be Interesting?"

Active Learning in Higher Education, vol. 4, no. 1, 2003, pp. 39–55. *DOI.org

(Crossref)*, https://doi.org/10.1177/1469787403004001004.

Bridwell-Bowles, Lillian. "Discourse and Diversity: Experimental Writing within the Academy." *College Composition and Communication*, vol. 43, no. 3, 1992, p. 349. *DOI.org (Crossref)*, https://doi.org/10.2307/358227.

Brown, Aleia M., and Joshua Crutchfield. "Black Scholars Matter: #BlkTwitterstorians Building a Digital Community." *The Black Scholar*, vol. 47, no. 3, 2017, pp. 45–55. *DOI.org (Crossref)*, https://doi.org/10.1080/00064246.2017.1330109.

Bruffee, Kenneth A. "Collaborative Learning and the 'Conversation of Mankind.'" *College English*, vol. 46, no. 7, 1984, p. 635. *DOI.org (Crossref)*, https://doi.org/10.2307/376924.

Budge, Kylie, et al. "Academics Who Tweet: 'Messy' Identities in Academia." *Journal of Applied Research in Higher Education*, vol. 8, no. 2, 2016, pp. 210–21. *DOI.org (Crossref)*, https://doi.org/10.1108/JARHE-11-2014-0114.

Burke, Lisa A., and Monica K. Cummins. "Using Undergraduate Student-Faculty Collaborative Research Projects to Personalize Teaching." *College Teaching*, vol. 50, no. 4, 2002, pp. 129–33. *DOI.org (Crossref)*, https://doi.org/10.1080/87567550209595893.

Canagarajah, A. Suresh, editor. *Literacy as Translingual Practice: Between Communities and Classrooms*. Routledge, 2013.

Caulfield, Susan L., and Caroline Hodges Persell. "Teaching Social Science Reasoning and Quantitative Literacy: The Role of Collaborative Groups." *Teaching Sociology*, vol. 34, no. 1, 2006, pp. 39–53. *DOI.org (Crossref)*, https://doi.org/10.1177/0092055X0603400104.

Chandra, Usha, et al. "A Successful Model for Introducing Research in an Undergraduate

    Program." *Journal of College Science Teaching*, vol. 28, no. 2, 1998, pp. 116–18.

Cianciolo, Patricia K., and Tammy L. Henderson. "Infusing Aging and Public Policy

    Content into Gerontology Courses: Collaborative Learning Methods to Teach

    about Social Security and Medicare." *Educational Gerontology*, vol. 29, no. 3,

    2003, pp. 217–33. *DOI.org (Crossref)*, https://doi.org/10.1080/713844303.

Clark, Suzanne. "Rhetoric, Social Construction, and Gender: Is It Bad to Be

    Sentimental?" *Writing Theory and Critical Theory*, edited by John Clifford and

    John Schilb, MLA, 1994, pp. 96-108.

Cronin, Blaise, et al. "Visible, Less Visible, and Invisible Work: Patterns of

    Collaboration in 20th Century Chemistry." *Journal of the American Society for

    Information Science and Technology*, vol. 55, no. 2, 2004, pp. 160–68. *DOI.org

    (Crossref)*, https://doi.org/10.1002/asi.10353.

Cronin, Blaise. "Hyperauthorship: A Postmodern Perversion or Evidence of a Structural

    Shift in Scholarly Communication Practices?" *Journal of the American Society

    for Information Science and Technology*, vol. 52, no. 7, 2001, pp. 558–69.

    DOI.org (Crossref), https://doi.org/10.1002/asi.1097.

Delpit, Lisa. "The Silenced Dialogue: Power and Pedagogy in Educating Other People's

    Children." *Harvard Educational Review*, vol. 58, no. 3, 1988, pp. 280–99.

    DOI.org (Crossref), https://doi.org/10.17763/haer.58.3.c43481778r528qw4.

Delucchi, Michael. "The Efficacy of Collaborative Learning Groups in an Undergraduate Statistics Course." *College Teaching*, vol. 54, no. 2, 2006, pp. 244–48. *DOI.org (Crossref)*, https://doi.org/10.3200/CTCH.54.2.244-248.

Downs, Doug, and Elizabeth Wardle. "Teaching about Writing, Righting Misconceptions: (Re)Envisioning 'First-Year Composition' as 'Introduction to Writing Studies.'" *College Composition and Communication*, vol. 58, 2004, pp. 552-84.

---. "What Can a Novice Contribute? Undergraduate Researchers in First-Year Composition." *Undergraduate Research in English Studies*, edited by Laurie Grobman and Joyce Kinkead, Utah State UP, 2010, pp. 173 – 90.

Duffy, William. "Collaboration (in) Theory: Reworking the Social Turn's Conversational Imperative." *College English*, vol. 76, no. 5, 2014, pp. 416–35.

Ede, Lisa S., and Andrea A. Lunsford. *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*. Southern Illinois UP, 1990.

Foertsch, Julie, et al. "Summer Research Opportunity Programs (SROPs) For Minority Undergraduates: A Longitudinal Study of Program Outcomes 1986-1996." *Council of Undergraduate Research Quarterly*, vol. 20, no. 3, 2000, pp. 114–19.

"Framework for Information Literacy for Higher Education." *Association of College & Research Libraries (ACRL)*, 9 Feb. 2015, https://www.ala.org/acrl/standards/ilframework.

Furman, Jeffrey L., et al. "Governing Knowledge in the Scientific Community: Exploring the Role of Retractions in Biomedicine." *Research Policy*, vol. 41, no. 2, 2012, pp. 276–90. *DOI.org (Crossref)*, https://doi.org/10.1016/j.respol.2011.11.001.

Gafney, Leo. "The Role of the Research Mentor/Teacher: Student and Faculty Views." *Journal of College Science Teaching*, vol. 34, no. 4, 2005, pp. 52–56.

Hersh, Cara, et al. "The Undergraduate Literature Conference: A Report from the Field." *Pedagogy*, vol. 11, no. 2, 2011, pp. 395–404. *DOI.org (Crossref)*, https://doi.org/10.1215/15314200-1218112.

Howard, Rebecca Moore. "Collaborative Pedagogy." *A Guide to Composition Pedagogies,* 2001, pp. 54-70.

Huang, Ding-wei. "Temporal Evolution of Multi-Author Papers in Basic Sciences from 1960 to 2010." *Scientometrics*, vol. 105, no. 3, 2015, pp. 2137–47. *DOI.org (Crossref)*, https://doi.org/10.1007/s11192-015-1760-x.

Hunter, Anne-Barrie, et al. "Becoming a Scientist: The Role of Undergraduate Research in Students' Cognitive, Personal, and Professional Development." *Science Education*, vol. 91, no. 1, 2007, pp. 36–74. *DOI.org (Crossref)*, https://doi.org/10.1002/sce.20173.

Keene, Adrienne, et al. "Braiding Our (In)Visibility: Native Women Navigating the Doctoral Process through Social Media." *JCSCORE*, vol. 3, no. 1, 2018, pp. 42–76. *DOI.org (Crossref)*, https://doi.org/10.15763/issn.2642-2387.2017.3.1.42-76.

Kirsch, Gesa E., and Joy S. Ritchie. "Beyond the Personal: Theorizing a Politics of
Location in Composition Research." *College Composition and Communication*,
vol. 46, no. 1, 1995, p. 7. *DOI.org (Crossref)*, https://doi.org/10.2307/358867.

Landry, Réjean, et al. "An Econometric Analysis of the Effect of Collaboration on
Academic Research Productivity." *Higher Education*, vol. 32, no. 3, 1996, pp.
283–301. *DOI.org (Crossref)*, https://doi.org/10.1007/BF00138868.

Lee, Sooho, and Barry Bozeman. "The Impact of Research Collaboration on Scientific
Productivity." *Social Studies of Science*, vol. 35, no. 5, 2005, pp. 673–702.
DOI.org (Crossref), https://doi.org/10.1177/0306312705052359.

Lester, Jaime and Adrianna Kezar. *Organizing Higher Education for Collaboration: A
Guide for Campus Leaders*. Josse-Bass, 2009.

Lindsley, Dana H., et al. "Efficacy-Performance Spirals: A Multilevel Perspective." *The
Academy of Management Review*, vol. 20, no. 3, 1995, pp. 645-78. *DOI.org
(Crossref)*, https://doi.org/10.2307/258790.

Longmore, Monica A., et al. "Learning by Doing: Group Projects in Research Methods
Classes." *Teaching Sociology*, vol. 24, no. 1, 1996, p. 84. *DOI.org (Crossref)*,
https://doi.org/10.2307/1318901.

Lunsford, Andrea A., and Lisa S. Ede. *Singular Texts/Plural Authors: Perspectives on
Collaborative Writing*. Southern Illinois UP, 1990.

Macheski, Ginger E., et al. "Overcoming Student Disengagement and Anxiety in Theory,
Methods, and Statistics Courses by Building a Community of Learners." *Teaching
Sociology*, vol. 36, no. l, 2008, pp. 42-48.

McWey, Lenore M., et al. "Cooperative Learning Through Collaborative Faculty-Student Research Teams." *Family Relations*, vol. 55, no. 2, 2006, pp. 252–62. *DOI.org (Crossref)*, https://doi.org/10.1111/j.1741-3729.2006.00374.x.

Nolinske, Terrie, and Barbara Millis. "Cooperative Learning as an Approach to Pedagogy." *The American Journal of Occupational Therapy*, vol. 53, no. 1, 1999, pp. 31–40. *DOI.org (Crossref)*, https://doi.org/10.5014/ajot.53.1.31.

Pratt, Mary Louise. "Arts of the Contact Zone." *Profession*, 1991, pp. 33–40. JSTOR, www.jstor.org/stable/25595469. Accessed 20 Apr. 2022.

Purdy, James P., and Joyce R. Walker. "Liminal Spaces and Research Identity." *Pedagogy*, vol. 13, no. 1, 2013, pp. 9–41. *DOI.org (Crossref)*, https://doi.org/10.1215/15314200-1814260.

Rhetorics of the Web: Burke's "Unending Conversation" Metaphor. https://kairos.technorhetoric.net/2.1/features/brent/burke.htm. Accessed 20 Apr. 2022.

Schreiber, Brooke Ricker. "'I Am What I Am': Multilingual Identity and Digital Translanguaging." *Language Learning & Technology*, vol. 19, no. 3, 2015, pp. 69–87.

Smith, John B. *Collective Intelligence in Computer-Based Collaboration*. L. Erlbaum Associates, 1994.

Smith, Linda Tuhiwai. *Decolonizing Methodologies: Research and Indigenous Peoples*. 2nd ed., Zed Books, 2012.

Somerville, Margaret, and Tony Perkins. "Border Work in the Contact Zone: Thinking

Indigenous/Non-Indigenous Collaboration Spatially." *Journal of Intercultural*

Studies, vol. 24, no. 3, 2003, pp. 253–66. *DOI.org (Crossref)*,

https://doi.org/10.1080/0725686032000172597

Stachowiak, Bonni. "Antiracist Writing Assessment Ecologies: Asao Inoue" *Teaching in*

Higher Ed, episode 209, 14 June 2018,

https://teachinginhighered.com/podcast/antiracist-writing-assessment-ecologies/

Steiner, Sue, et al. "Using Cooperative Learning Strategies in Social Work Education."

Journal of Social Work Education, vol. 35, no. 2, 1999, pp. 253–64. *DOI.org*

(Crossref), https://doi.org/10.1080/10437797.1999.10778964

Stokols, Daniel. *Social Ecology in the Digital Age: Solving Complex Problems in a*

Globalized World. 2018. *Open WorldCat*,

https://www.myilibrary.com?id=1044357

Sugimoto, Cassidy R., et al. "Scholarly Use of Social Media and Altmetrics: A Review of

the Literature." *Journal of the Association for Information Science and*

Technology, vol. 68, no. 9, 2017, pp. 2037–62. *DOI.org (Crossref)*,

https://doi.org/10.1002/asi.23833

Swales, John M. *Genre Analysis: English in Academic and Research Settings*. Cambridge

UP, 1990.

Tang, Li, et al. "Retraction: The 'Other Face' of Research Collaboration?" *Science and*

Engineering Ethics, vol. 26, no. 3, 2020, pp. 1681–708.

Tortoriello, Marco, et al. "Bridging the Knowledge Gap: The Influence of Strong Ties,

    Network Cohesion, and Network Range on the Transfer of Knowledge Between

    Organizational Units." *Organization Science*, vol. 23, no. 4, 2012, pp. 1024–39.

    DOI.org (Crossref), https://doi.org/10.1287/orsc.1110.0688

Veletsianos, G. "Higher Education Scholars' Participation and Practices on Twitter:

    Scholars' Participation and Practices on Twitter." *Journal of Computer Assisted*

    Learning, vol. 28, no. 4, 2012, pp. 336–49. *DOI.org (Crossref)*,

    https://doi.org/10.1111/j.1365-2729.2011.00449.x

Voss, Julia. "Who Learns from Collaborative Digital Projects? Cultivating Critical

    Consciousness and Metacognition to Democratize Digital Literacy Learning."

    Composition Studies, vol. 46, no. 1, 2018, pp. 57–194.

Weller, Katrin, and Isabella Peters. "Scholarly Communication in Social Media." *The*

    SAGE Handbook of Social Media, edited by Jean Burgess and Alice Marwick,

    SAGE Publications, 2018, pp. 592-612.

Wuchty, Stefan, et al. "The Increasing Dominance of Teams in Production of

    Knowledge." *Science*, vol. 316, no. 5827, 2007, pp. 1036–39. *DOI.org (Crossref)*,

    https://doi.org/10.1126/science.1136099

Young, Louise, and Per Vagn Freytag. "Beyond Research Method to Research

    Collaboration: Research Co-Production Relationships with Practitioners."

    Industrial Marketing Management, vol. 92, 2021, pp. 244–53. *DOI.org*

    (Crossref), https://doi.org/10.1016/j.indmarman.2020.02.016

Young, Vershawn Ashanti. *Other People's English: Code-Meshing, Code-Switching, and African American Literacy*, Parlor Press, 2018.

Youtie, Jan, et al. "Career-Based Influences on Scientific Recognition in the United States and Europe: Longitudinal Evidence from Curriculum Vitae Data." *Research Policy*, vol. 42, no. 8, 2013, pp. 1341–55. *DOI.org (Crossref)*, https://doi.org/10.1016/j.respol.2013.05.002

Yosso, Tara J. "Whose Culture has Capital? A Critical Race Theory Discussion of Community Cultural Wealth." *Race, Ethnicity and Education*, vol. 8, no. 1, 2005, pp. 69–91.

Yu, Qi, et al. "World Scientific Collaboration in Coronary Heart Disease Research." *International Journal of Cardiology*, vol. 167, no. 3, 2013, pp. 631–39. *DOI.org (Crossref)*, https://doi.org/10.1016/j.ijcard.2012.09.134