Teaching Anthropology

2023, Vol. 12, No. 2, pp. 40-52.

A Vertically Integrated Project Approach to Ethnographic Methods Training

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Abstract: The Vertically Integrated Project (VIP) model, developed in engineering, is a methodological approach that integrates undergraduate students, graduate students and faculty in projects for both research and student training. Recent applications of this model report that it could foster student-faculty collaboration, empower senior students to mentor juniors, transcend disciplinary silos that often hinder research, and promote diversity and inclusivity in higher education. Our cross-disciplinary experimentation with this model in ethnographic methods training demonstrates its value to facilitate or even institutionalize faculty-student collaborative research and mutual learning in social sciences. We also suggest transforming this model to be less hierarchical in collaboration, more mutually beneficial for all involved, and more sustainable for long-term projects.

Keywords: Vertically Integrated Project, ethnographic methods, mutual learning, experiential learning, applied anthropology.

Introduction

In this article, we share the experiences and results of our experimental application of the Vertically Integrated Project (VIP) model from the STEM fields into ethnographic methods training through multidisciplinary applied research projects. The VIP model vertically integrates students and researchers, from undergraduate students all the way up to senior faculty under the institutional hierarchy of higher education, into a shared long-term project of research and student training, as exemplified in the long list of co-authors of this article. Before presenting our completed VIP projects, we first introduce the initial experience from a newly started project to illustrate our experimental articulation of the VIP model with ethnographic field research and training.

This ongoing project focuses on designing technical retrofits to enhance sufficient combustion in, and thus reduce emissions from, home-use firewood heaters in collaboration with rural and tribal communities in North America. Author Zhang leads the project's applied anthropology components which integrate ethnographic methods training with the VIP model experimentally applied. He and an undergraduate engineering student started drafting a needs assessment survey in summer 2022 as the first step of the project. We discussed basic words used in the survey questions, such as "seasoned firewood", and the possible different uses of the same words by researchers, rural families, tribal families, and heating stove regulators. Author Zhang introduced the practice of using other field methods, such as participant observation and open-ended interviews, to inform and improve survey design and discussed common challenges in mobilizing these methods for applied projects in limited time. This student did interviews in his home community about these essential words in our survey questions and the related local issues. He grew up in a firewood-heated rural house in a coastal area of the State of Oregon in the U.S. Visiting his family in the summer, he actively used ethnographic methods for designing the survey beyond professors' top-down training and expectation. As in his case, having life experiences from different parts of the world and academic training in different fields was beneficial to the professors and students of this project in practicing and using ethnographic methods, but often led us doing so in ways beyond the hierarchical order of a university's pedagogical setting. This example from our experimental application of the

VIP model across STEM fields and anthropology illustrates the potential for the VIP model and anthropology training to transform each other.

Our VIP project experiences like this have been beneficial to mutual learning between team members across different disciplines, perspectives and positions. The VIP model originated in the field of engineering. Increasingly claimed to be a multidisciplinary approach to productive research and innovative pedagogy, the VIP model is yet limited to several STEM fields. Therefore, we hope to explore and evaluate the benefits and limitations of this model in social sciences, especially anthropology, and possible contributions from social sciences to improving and upgrading this model. The field of anthropology has encountered various challenges in disciplinary practices including research methodology and student training, and thus is in need of disciplinary innovations, especially in applied anthropology (Brunson et al. 2021). For one thing, generations of anthropologists have been indulged in and proud of the iconic image of doing long-term archaeological or ethnographic fieldwork as a 'lone-wolf' adventurist in some wild or exotic part of the world, like the fictional Indiana Jones or the widely-known Bronislaw Malinowski. However, for various reasons as discussed below, that iconic image, although deeply embedded in anthropology textbooks and classic ethnographic monographs well read by anthropology students, is often not applicable today, especially to applied or practicing anthropologists almost always working in multidisciplinary teams. Would the VIP model with students' course training integrated into team projects lend some inspiration to anthropological research and pedagogy, especially for applied anthropological work? Scholars in anthropology and related fields such as Science and Technology Studies (STS) have made critical reflections on the subjectivity and positionality of individual researchers in knowledge production and also more constructive discussions towards the co-production of knowledge, based on researchers' different epistemic positions and perspectives (Haraway 1988; Holms & Marcus 2008; Jasonoff 2004; Strathern 2004). With its long and unique theoretical and methodological expertise in human (including researchers') diversity, could anthropology inspire the VIP model to transform from a vertical hierarchy of training and learning to a web of team collaboration and mutual learning?

This article aims to engage the above two questions based on our recent and ongoing experimental applications of the VIP model in applied anthropological research and student training. This article includes specific participation with The Confederated Tribes of Grand Ronde, which is a federally recognized Tribe that includes over 30 Tribes and bands from western Oregon, northern California, and southwest Washington. Such bands include the Kalapuya, Molalla, Chasta, Umpqua, Rogue River, Chinook, and Tillamook. The next section discusses related studies and debates, section three presents the methodological design of our experimental projects, section four reports and analyzes the developments and reflections of our projects, and section five summarizes and discusses the practicality and values of articulating the VIP model with ethnographic methods training.

Articulating the VIP Model and Ethnographic Methods Training

The VIP model emerged first in engineering faculty and students' pioneering efforts to integrate research and training (Coyle et al. 2006). It was initially aimed at building a more sustainable faculty award structure (Cullers et al. 2017) and emphasizing PhD research (Coyle et al. 2006). The model was soon developed to integrate students and researchers at different levels of institutional hierarchy that is typical in universities, from first-year undergraduate students all the way up to senior faculty. Its core tenets have been further developed and its adoption expanded to dozens of universities in the U.S. and abroad (Zoltowski & Oakes 2014). According to its recent development, the VIP model has become "a transformative approach to enhancing higher education by engaging undergraduate and graduate students in long-term, large-scale, multidisciplinary project teams that are led by faculty. (Undergraduate) Students earn academic credits, while faculty and graduate students benefit from the design/discovery efforts of their teams" (VIP Consortium 2020). VIP projects are embedded in faculty mentors' scholarship and exploration, as well as in curricular programs or special courses for students to participate in. The VIP model has been considered beneficial and sustainable as it fosters student-faculty collaboration (Abler et al. 2017; Strachan et al. 2019), empowers senior students to mentor juniors (Abler et al. 2017; Ferri et al. 2017), transcends disciplinary silos that often hinder research (Thomsen et al. 2018), and also promotes diversity and inclusivity in higher education (Sonnenberg-Klein et al. 2018).

On top of its success, the VIP model also started to see emerging critiques of its limitations. Early attempts have warned that some students' over-involvement in VIP projects could distract them from their other classes (Towhidnejad et al. 2011). A related warning is about faculty's or university's exploitative use of students', especially gender or ethnic minority students' (Hogan 2005; Rosales et al 2023), free labor without recognition or

compensation for faculty's research or higher education in general. Further on, despite the institutional power hierarchy in university settings, could the VIP model break down its hierarchical power structure for more robust learning and productive research? Some scholars recently pointed out that the application of this model has not been well experimented with peer-to-peer learning and mentoring (Strachan et al. 2019). Such peer relations could form a social and epistemic space open to different patterns of knowledge seeking and exchange, except an early case between students (Melkers et al. 2012). Thus, knowledge learning and creation in a VIP project probably doesn't have to follow the vertical order of project management. Moreover, the recent development of supposedly multidisciplinary VIP programs and courses is yet limited to STEM fields (Amoo et al. 2020; Cullers et al. 2017) with isolated exceptions (e.g. Collins 2021). Could the VIP model actually "break down the (disciplinary) silos" (Amoo et al. 2020) and be further extended to or even hosted in social sciences?

Anthropology is not exempted from a disciplinary silo either. First, the model of lone ethnographers (often white, male) (Gottlieb 1995) persists as the basis of ethnographic teaching and training for students, i.e. 'next generation' anthropologists (El Kotni et al. 2020; Yates-Doerr 2020), and therefore has been self-sustaining (Galman 2007; Ruth et al. 2022). However, the model has been facing increasing challenges both in research (Holmes and Marcus 2008; Yates-Doerr 2020; Thomsen 2022; Thomsen et al. 2022) and student training (Brunson et al. 2021; El Kotni et al. 2020). Anthropology students, including most undergraduates and ever more graduates, are moving toward various nonacademic jobs in multidisciplinary collaborative teams for solving real-world problems (El Kotni et al. 2020; Ruth et al. 2022, 61). There have been calls and attempts to build collaborative norms in teaching and training for both academic research (El Kotni et al. 2020; Gottlieb 1995; Holmes and Marcus 2008; Snodgrass 2016) and public or applied work (Brunson et al. 2021; Lassiter 2005). While a discipline-wide revolution of anthropology pedagogy is not easy due to institutional and resources limitations (Brunson et al. 2021; Ruth et al. 2022), recent pioneering experimental attempts are inspiring, such as the Collaborative Event Ethnography (Weston and Djohari 2018), the community-engaged student-led applied anthropology course (Miller 2021) and the multi-course pedagogical experiment during the Covid-19 pandemic (Finnis et al 2023).

Indeed, anthropology has advantages in adopting and upgrading collaborative approaches to research and pedagogy. Well aligned with critical STS, anthropology has a strong tradition of critical reflection on diverse positionality and perspectives in knowledge learning and creation, including in anthropology itself (DeLuca and Maddox 2016). Critical scholars in anthropology and STS argued that as part of human practice, scientific knowledge is situated knowledge created and exchanged from partial perspectives (Clifford and Marcus 1986; Haraway 1988; Strathern 2004). Therefore, science has always been a process of co-production of knowledge by collaborators (Jasanoff 2004). Various related barriers in collaborative knowledge production, including (post-)colonialism, racism and patriarchism, have been examined, leading to calls for decolonizing anthropology (Allen and Jobson 2016; Clifford and Marcus 1986; Harrison 1991). Anthropologists have acknowledged the often incomplete work and partial knowledge from anthropological research (Günel et al. 2020; Yates-Doerr 2020), and further suggested to adjust the goal of science to making connections between the collaborators' different modes of knowing for collective production of better knowledge (Haraway 1988; Holms and Marcus 2008; Strathern 2004). This goal is especially urgent nowadays for faculty research and teaching to adapt to, and take advantage of, the increasingly diverse student body in anthropology (Ruth et al. 2022) and other fields (Sonnenberg-Klein et al. 2018). The co-authorship of this article is meant to acknowledge the students', including local undergraduates', contribution to the collective process of experiential learning and knowledge production.

The shared foundation of experiential learning makes it practical to integrate the VIP model into ethnographic teaching and research especially for applied anthropology (Brunson et al. 2021). The VIP model started with experiential-learning projects in the Engineering Projects in Community Service (EPICS) program (Amoo et al. 2020). Its project-based approach turns research and learning to true-to-life processes (Melkers et al. 2012). Ethnographic methods teaching requires hands-on fieldwork training and practice as reaffirmed in a recent wide survey (Ruth et al. 2022). Moreover, the collaborative team mode of work in the VIP model is urgently needed for ethnographic methods training (El Kotni et al. 2020; Ruth et al. 2022), especially in applied anthropology (Brunson et al. 2021). The VIP model was designed for applied training programs and courses that aid critical thinking and professional development with students (Amoo et al 2020). Critical self-reflection on research experiences including researchers' subjectivity and positionality has been part of the disciplinary tradition of anthropology, but not so much encouraged in ethnographic methods teaching yet (Ruth et al. 2022). Our experimental VIP projects of research and teaching are inspired by and hopefully contribute to these discussions.

Research Design and Methods

This article is a self-evaluation (Ervin 2005; Patton 2002) of our experimental application of the VIP model in ethnographic methods training. We apply anthropology's critical reflection on knowledge learning and creation into the research design for this article. Self-evaluation "critically review their own programs and services and measure rates of progress as related to their missions, goals and objectives" which "may lead to revisions in long-term planning and changes" and establishment of "new goals" (Ervin 2005: 92). Our projects were designed to encourage faculty and students' active reflections during and after fieldwork for our self-evaluation here.

Data Collection

Data collection for this study was conducted in our VIP projects from 2021 to 2022. University ethics protocols were approved as 'exempt' and all ethical standards were followed for this study. The focused project in the rest of the article combined coauthor Copeland's PhD research with a Masters-level course of Tourism Management (MTM) led by coauthor Thomsen. Coauthor Zhang provided advice and feedback as a VIP collaborator and a co-advisor of Copeland's PhD dissertation study. The research team, including a full Professor, two Assistant Professors, three Ph.D. students, 13 Masters students, and three undergraduates, did two field visits over 12-months in the Columbia River Basin in the U.S. Pacific Northwest. The team was evenly split between self-identified males and females, aged from 19-55, and ~45% self-identified as ethnic/racial minorities. The first fieldwork trip, in fall 2021, focused on salmon-sea lion-human relations in fishing and ecotourism against the backdrop of climate change. Copeland took four junior students into the field with him as a pilot study, where they completed 44 semi-structured interviews and 46 in-person surveys at 3 different field sites over 9 days.

The second field trip, reaching broader topics, was integrated into a VIP-based ethnographic methods course in spring 2022. Before this trip, the course students conducted archival research and literature review, and also practiced interviewing, focus group meetings, and participant observation. In the field, Copeland first demonstrated live interviewing techniques, before assigning student groups interviewees to speak with. Two (near-)peer mentors provided assistance, including one senior undergraduate from the first trip and a first-year PhD student with his experience in ethnographic methods. The team conducted semi-structured interviews (52) and participant observation at four different field sites in the 10-day trip.

We integrated the self-reflective methodology into the design of our VIP projects. During the first fieldwork trip or the pilot study, the research team made individual fieldnotes, discussed collected data and field experience after each field session every day, and then analyzed data together after the trip. In the second field trip and the associated course, the faculty and students practiced multiple ways of advising, feedback and reflective discussions. Copeland led initial interviews where appropriate, demonstrated basic techniques such as snowball sampling, facilitated students' discussions on field experiences, and gave feedback immediately following. Students were also assigned to write an overall post-trip reflection essay to address what they felt was the most important takeaways of the field study, both on their findings from the research and on the VIP as a methodological training exercise. These reflections also provided a source for applying their newly acquired coding skills. Finally, students went through a series of 'revise and resubmits' to the first three authors to learn how to write for publication. Table 1 below details the key methodological components used pre, during, and post-trip.

Data Analysis

Data analysis for this article integrates students' fieldwork-collected data with our individual reflections and group discussions. Students were taught to code interview responses and observation notes using DelveTool software. Select students coded the reflections after Copeland separated comments for anonymity as part of deploying the VIP model for end-of-class project class marks. The first three authors used the students' feedback, fieldnotes, and group discussions to evaluate the effects of the VIP model on students' learning and faculty teaching of field methods. Our analysis first openly presents first-hand experiences and different perspectives by directly quoting substantially from our fieldnotes, discussions and reflections. Direct quotations, not limited by pre-established institutional categories or academic concepts, could open up an analytical space that starts with involved parties' perspectival experiences and leads to more effective evaluation (Patton 2002).

Table 1. VIP Methods Used Pre-, During, and Post-Fieldwork

Pre-trip	Fieldwork	Post-trip
● Course students were taught how to conduct archival research and literature review about the research topic, theoretical constructs, and methods. ● Students were taught how to use ethnographic methods. ● Students practiced methods and wrote up short literature reviews to prepare for the field. ● Students shared logistical planning tasks to appreciate the planning of fieldwork.	● Students conducted participant observation at over 10 field sites. ● Students had the first day, last afternoon, and evenings 'off' to bond as a team and appreciate local culture. ● Students were split into groups of 2-4 to conduct semi-structured interviews. ● Coauthor Copeland led student discussions after field site visit, after interviews, before each event, and in the evenings. ● 4 students led sub-topical discussions during debrief and reflection sessions.	● Students learned to code and analyze results. ● Students conducted in-class and written reflections. ● Students wrote-up results in groups. ● Students participated in three rounds of in-class 'peer-review' from the first three authors.

Findings: From the university hierarchy to a web of mutual learning

VIP integration of Ph.D. Research and undergraduate training

Our pilot study interviews were conducted primarily with environmental lawyers and nonprofits working on salmon-related issues, and also with community members such as sport fishers, recreationalists, green-belt walkers, city council officials, and Grand Ronde tribal representatives. The Grand Ronde website articulates Indigenous Peoples' strong ties to the local geography, and particularly that of the 23-acre site near Willamette Falls, named Tumwata Village (http://www.tumwatavillage.org). The commencement of this trip began at this location and a video was shared by Tribal staff that discussed the rich history of these sacred lands and ancestral practices, including shared intra-tribal connection and settler conflicts Copeland, the senior PhD student, also conducted participant observation and took field notes of quotidian practices in communities, including commercial fishers'. Each community had proximal locations to the Willamette and Columbia Rivers or Oregon Coast, including Portland, Oregon City, St. Helens, Rainier, Newport, and Astoria, all in the U.S. State of Oregon. The pilot study was also used to inform the basis of teaching other students about the topic that they were tasked to explore. Students found the materials from the pilot study helpful, but not as much as learning-by-doing later, as multiple students recalled,

> The initial studies [readings] we were given before the trip were a struggle for me to understand fully (Student 4). During the beginning of the trip, the majority of us were still confused on what exactly we were doing, the best way to approach people for interviews, and what exactly should be asked, until we had to explain the topic to the people that we were interviewing (Student 3). I definitely enjoyed learning about the dissertation topic once we started to gain more information about each of the components (salmon, sea lions, and especially tourism) (Student 7).

Students also participated in online semi-structured interviews, including four before the Fall 2021 trip and three before Spring 2022 trip, to build work knowledge and community partners for later field trips. Notably, the Fall 2021 VIP experimentation was as much an exercise for the PhD student to identify partners for recurring visits as it was a learning exercise for other students. Table 2 provides a snapshot of the locations explored for the Spring 2022 field study as part of the MTM course.

Table 2. Planned Tours and Course Student Initiatives

Place Name	Planned vs. Student Initiative	Organization Or Locality	Themes
The Astoria Column	Planned	Astoria	Municipal viewpoint, sightseeing, wildlife viewing, visitor center
Commercial Fishing Docks	Planned	Astoria-Warrenton; Fisheries Policy Staff	Commercial fishing regulations, whale-fisher conflict, fisheries policy, WA/OR harvest conflict
Hanthorn Cannery Museum	Student Initiative	Astoria	Historic museum, salmon industry, cannery packing, liberal feminism
Astoria-Warrenton Chamber of Commerce	Student Initiative	Astoria	Tourism planning, destination tourism, marketing and promotion, community conflict, whale-sea lion-fisher conflict
Columbia River Maritime Museum	Student Initiative	Astoria	Historic museum, exhibit strategy, marketing and promotion
Willamette Falls	Planned	Confederated Tribes of the Grand Ronde; Oregon Department of Fish and Wildlife	Cultural-environmental development, intra-tribal conflict, sea lion-human conflict, legal conflict
Willamette Valley Vineyards	Student Initiative	McMinnville	Agri-tourism**,** sustainable agriculture, wine production
Oregon State University	Planned	Corvallis	Organized lecture, salmon politics/policy, rural and urban conflict, Indigenous disposition
Newport Chamber of Commerce	Student Initiative	Newport	Tourism planning, destination tourism, marketing and promotion, community conflict, sea lion conflict
Marine adventure tour (environmental entrepreneurs)	Planned	Newport	Non-lethal marine and riparian tours, environmental education, entrepreneurship, storytelling
Commercial Whale Watching tour (fishers)	Planned	Depoe Bay	Non-lethal consumptive whale watching, consumptive fish charter
Otter Rock Marine Reserve	Student Initiative	Newport	Marine protected area, sightseeing, recreation
Chachula Museum	Planned	Confederated Tribes of the Grand Ronde	Cultural museum, guided tour, destination tourism, storytelling, tribal tourism initiatives, entrepreneurship

The planned visits, coordinated ahead of time, served as spaces for Copeland's unexplored questions and allowed him to further develop his thinking of the dissertation topic. At each planned visit, he and faculty probed questions for further exploration, a 'learning-by-doing' approach to prepare students for their own interviews, observation and fieldnotes later. Course students had time (2-4 hours a day) to apply ethnographic methods to explore their own environmental and tourism interests as well. Student 6 reflects:

> With every interview set up for the group, I was able to piece together the entire story behind why the salmon are becoming close to extinction. These interviews allowed me to ask more in-depth questions during the community interviews. I was able to better explain the issues to the tourists who didn't quite understand the relationship between the sea lions and salmon. I appreciated learning first hand from both locals and visitors about tourism in the areas and think it was beneficial regardless of whether I do research or a PhD.

The table also records 'Student Initiatives' to show how the fieldwork design inspired the course students to conduct further research and empower them to visit places important for their own learning or experience. Reflections from Student 7:

> This trip showed me that we can become tourism leaders by creating change, driving economies, and seeing just how important it is to preserve culture. I was able to apply concepts from other classes, such as sustainable tourism development.

Students' struggle in classroom understanding of the pilot study materials could be taken as a call for a real-world setting for experiential learning of ethnographic methods. The VIP integration of Copeland's PhD study provided a launch pad for the MTM course and the junior students' first fieldwork experience. It led the students not only to understand and practice ethnographic methods first-handedly but also to develop and explore their own research interests.

Leveraging un-comfortability in the VIP model

The pilot study showed that ethnographic methods are not always favorable to rigid plans and structures. Social adaptability to fieldwork settings provides a basis for critical theories to deeply wrestle (i.e. 'slow thinking') with everyday realities (Copeland 2022). A practical question is how to have the junior students better approach community members in the field. For example, the senior Ph.D. student leveraged a survey on the first trip. However, it turned out that the survey distanced students from conducting semi-structured interviews and that most community members only wished to do one or the other. Student 4:

> One of my goals was being able to gather enough information to have, at least, a short conversation with anyone about issues around the dissertation topic. In this way, we were able to move our education from the page to the person, from a screen to our lived experience.

Day one of the second field trip took place in Astoria, a coastal town at the Columbia River mouth. We spent one hour with our first knowledgeable informant at the Commercial Fishing Docks and this allowed for questions and interests to circulate in the team. We spent time relating this open conversation to semi-structured interview skills and gave the students three hours to explore the field, before assigning them a minimum of ten semi-structured interviews to be conducted. Student 1:

> As a student who has never conducted first-hand research, I found the live 'mock' interviews to be vital to the experiential process. I was able to build comfort with my peers and familiarize myself with how to conduct a research interview. In Astoria we were told to 'get our feet wet' which allowed us to practice unstructured interviews on the dissertation topic in efforts to build semi-structured interview skills to be applied the following days.

We led and observed groups of students approaching community members as a basis for building comfortability. In time passing, it was clear that some were reluctant and hesitant. After thirty minutes, the first three authors, and near-peer mentors, approached the students to better guide them, answered questions, and encouraged them to participate. Student 5 highly valued this learning process and shared especially her developed skills in participant observation:

> I value nontraditional, experiential, hands-on, and applied learning experiences. I wish a majority of my academic experience was outside the classroom like this. For me, I learn the most in-depth through silence, observation, assessing the environment, and physical experiences. This trip gave me the opportunity to learn a lot by watching people's behavior, listening to what they have to say, when they speak, and their choices in words.

The new development addressed a question that emerged in the first trip: how to have students feel comfortable with semi-structured interviews so that they are empowered to conduct more by themselves? We learned that this is a learning process where planned field visits provided situated knowledge of the topics. Student 2:

> I was so impressed with my peers and myself how we were able to just keep going in conversations with the Grand Ronde employees... I'm glad that we got to practice interviewing the day before. These conversations began creating a deeper understanding of why the research was so important to all of the stakeholders involved.

The process of becoming comfortable was rewarding, as student 3 summarized, "Being able to visit multiple locations and talk to the locals gave me a lot of insight on problems that I didn't know existed."

The rising Web of Knowledge in the VIP

In most field days, we conducted fieldwork separately for a few hours, with faculty and PhD students observing the junior students sometimes. After that, we reconnected for in-field reflections regarding our findings and experiences for about twenty minutes. The reflective discussions started an open space of knowledge sharing. For example, students in both Newport and Astoria led an initiative to speak with the municipality that governs tourism. In follow-up discussions, they shared how one marketing organization in Newport was hindered by their inability to promote visitors and sea lions together. As in student 9's fieldnotes:

> They know that people come to see sea lions, but there is no direct advertisement spending. There are competing interests to draw tourists in from a marketing perspective. The fishing industry brings in major tax revenues, so they are a bit limited in what they can do.

Student 7 made more analytical notes after pulling together alternative perspectives:

> Meeting each of the stakeholders was a great way of introducing us to the different points of view…One of the more interesting issues I was exposed to on the trip was the communication gaps between stakeholders, specifically between ODFW, and fisheries versus multiple communities and even Grand Ronde…Therefore, it is important to view things from a different perspective.

Insights like these allowed for deeper discussions between researchers, further highlighting the paradoxes of salmon-sea lion-human relations. Competing claims were also vetted, and some students had conversations with community members who believed that lethal removal on the coast was appropriate to manage the sea lion populations, despite our team finding of broader community acceptance. These paradoxes are further captured by Student 7 and used in the in-field reflective discussions:

> After doing interviews and reflecting on our findings, it seems clear that the majority of people enjoy having sea lions around, both on the coast and around Oregon City. I keep thinking about ODFW's argument because it doesn't match what people are saying. This tells me that ODFW communicated with one stakeholder, recreational fishers, who they feel are most impacted by the issue. This is a biased foundation of beliefs on how sea lions impact the broader community.

As we recorded during in-field reflective discussions in Newport:

> Most of the fishers, (and) shop and restaurant employees could not expand on their opinions of whether sea lions should be culled or not. However, the majority said no; it's something that they just have to learn to deal with. It was clear that sea lions bring immediate tension, and people didn't really have a thorough solution on how to coexist best. Some stated neutering and students agree that this may be a better mechanism than culling. Students discussed the need for broader solutions between stakeholders…

This reflective exercise also contributed to his own ethnographic insights. This process allowed him to confirm existing findings, understand what other students believed to be the major issues, and further explore unidentified topics or perspectives. Team triangulation of research findings is also demonstrated by Students 9 and 10:

> When conducting interviews with the Newport and Astoria community and chamber of commerce, the attitude around sea lions is seen as positive and inclusive. Astoria was actively planning tourism guides and promotional efforts around sea lions. These similar efforts were much more political in Newport. It was a great feeling knowing that this was something that [the senior PhD student] was mostly unaware of. I really started to see the importance of having multiple researchers in research.

Team findings and discussions helped the senior PhD student triangulate his data, remove bias, and further investigate these relational patterns. The insights between researchers allowed for greater dialogue and provided more depth to the complexities. While the professors and PhD students led the deployment of the VIP model, the Masters and undergraduate students played a vital role in informing the PhD students and professors and hence built up a web of mutual learning and methodological training for all.

Productive immersion in the less vertical VIP

As described above, our VIP projects generated dynamic flows of knowledge between team members. Research team hierarchy was well broken, if not flattened, by our designed activities, such as the training-by-doing, planned field visits, and in-field daily reflective discussions, and also by unplanned developments, such as the near-peer mentors' more-than-expected contribution, students' initiatives of field visits, and free time for students' own interviews. Student 1:

> Although being up in the chain of command, they [mentors] were not treated as such during data collection. They checked in, transferred knowledge to the professors, and conducted interviews on their own. This (project) did not really follow vertical organizational communication patterns, but rather left all individuals in the same operating division.

The tangible intellectual processes of data collection, results transfer and knowledge discovery in the field didn't follow the VIP model's hierarchical order, or in short, VIP became less vertical. Student 4 further pointed out that the open and equitable dynamics gave space for both planned research and new ideas:

> We sought to answer not only anticipated inquiries, but novel ideas through casual semi-structured interviews reporting our discoveries in an open and equitable manner.

Student 2, a nontraditional degree-seeker with his Masters study integrated in his job, has been in the program the longest (four years) and has seen multiple cohorts commence in and graduate from the program. He wrote:

> I have spent a considerable amount of time in educational settings. I find education to be invigorating, hopeful, and vulnerable. My educational experience, however, is entirely structured in a traditional model of pupil and instructor, textbook and test, concept and meaning, framework and lens. Little time has been devoted to applicability or practicality. At times I have found this traditional western educational structure exhausting, a litmus test of fulfilling requirements and checking boxes. Despite the numerous benefits of classroom-based education, growth is restricted by the setting and those associated constructs or norms. For a long time, I rationed my passion. Sacrificing ambitions for security, adventure for comfort. VIP challenges the safety of the classroom…I can attest vehemently that VIP is a refreshing approach to education.

Unexpected findings were further recorded, as in students' learning experience in faculty vehicles. What the faculty understood as a 'transition time' from classroom to field sites without pedagogical or research activity turned out to be a productive part of students' learning. As student 4 reflects:

> Speaking to [Ph.D. Student] personally during the car rides…gave me the chance to learn his motivation behind doing his research on sea lion-salmon-human relations. His use of the VIP model gave me the opportunity to understand Ph.D. work and humanized our educational experience. It personally ignited my passions and challenged traditional education models at the root of the hierarchical structure by which they are defined.

Lastly, significant themes emerged during the coding of the student reflections and are documented as 'nature connection' and 'Immersion/Relationships'. Two key partners were most influential to this end. We found that marine adventure tours (i.e., environmental education emphasis) as opposed to conventional whale watching operations (i.e., commercial fishers) were viewed as a much more impactful and ethical experience in marine tourism encounters. This is coupled with cultural immersion, drawing from Tribal perspectives. Students overwhelmingly recorded that as the most influential aspects of the learning experience, both the Willamette Falls and the Chachula Museum were aligned with their interests in, and focus on, tourism futures. This is especially significant to students with special backgrounds, such as student 8 as an international student:

> As a foreigner, I was often confronted with many cultural differences. I was really grateful that I could seek for answers or opinions immediately from my American cohort during the trip. This project certainly improved the inclusion of the program.

Overall, the team members, including faculty and students, observed and experienced the dynamic and not very vertical relationships between us and the organic flows of knowledge of research topics and field methods.

Discussion & Conclusion

In this article, we show that the VIP model could be extended to or even hosted in social sciences, applied anthropology in particular. Such extension into social sciences contributes not only to the focal research projects and student learning but also to methodological innovations in both the VIP model and anthropology. Ethnographic methods teaching requires hands-on fieldwork training and practice as reported in the recent survey of syllabi (Ruth et al. 2022) and demonstrated again in our projects. As shown above, students' experience was enhanced by an acceleration of the learning process surrounding a particular issue and a respectability for the departure from traditional classroom-based methods courses towards experiential learning in the field. Our experimental projects thus demonstrated the methodological articulation between the VIP model and ethnographic methods thanks to their shared central basis on experiential learning and anthropology's tradition in critical self-reflection.

Our critical self-reflections revealed the different ways and perspectives of learning and knowing in the project teams. Critical self-reflection on research experiences including researchers' subjectivity and positionality has been part of the disciplinary tradition of anthropology, but not so much encouraged in ethnographic methods teaching yet (Ruth et al. 2022). In our projects presented above, we mobilized this tradition of self-reflection for students' active learning, PhD students' research innovation, and faculty's evaluation of pedagogical experimentation. Indeed, this article is first an evaluation report based mainly on the active reflections as a special component integrated into the design of our research and teaching since the very beginning. The faculty, graduate students and undergraduates have different disciplinary expertise or majors, training history backgrounds, and academic or professional interests. Such diversity gives shape to project team members' different positions and modes of learning and knowing. The team members' different positionality and epistemic perspectives led initially to discomfort and struggles in learning, but soon to mutually beneficial intellectual experiences. It's especially worth-noting that the PhD students and the faculty also benefited from the undergraduates' field research and reflective thoughts. Overall, the team members became intellectual partners and collaborators in an epistemic community of reciprocal nature, which is acknowledged in the long list of authors of this article.

While the VIP model was originally built on the institutional hierarchy of higher education, it gave rise to a social web of mutual learning and benefits thanks to our project teams' rich diversity and active reflection. This result corroborates an earlier observation of the social web of multi-ranked students in engineering education with the VIP model (Melkers et al. 2012) and further extends the web of mutual learning also to graduate students and faculty. We thus argue that knowledge learning and development doesn't always follow, and could even challenge, the long established hierarchical order of project management and institutional structure. Therefore, the experimental approach of integrating the VIP model to field research and training could help to challenge multiple barriers, such as racism, conservatism and colonialism. In response to the recent calls of decolonizing anthropology (Ruth et al. 2022) and education (Demerath 2022) for example, experimentation with the VIP model like we did could help explore new ways of decolonizing anthropology starting with student training (including co-authorship) and community collaboration, not limited to debating among established senior scholars. The VIP model could help to encourage or even institutionalize collaborative and mutually beneficial projects for field research and teaching, such as in anthropology (Brunson et al. 2021; Snodgrass 2016). In return,

anthropologists' more reflective use of the VIP model could help rethink the established hierarchical order assumed in the model and hopefully transform the VIP model to less hierarchical and thus more mutually beneficial and more sustainable.

Acknowledgements
We would like to express our sincere gratitude to The Confederated Tribes of Grand Ronde in the Pacific Northwest of the U.S., especially the directly involved tribal bands including Kalapuya, Molalla, Chasta, Umpqua, Rogue River, Chinook, and Tillamook, for their valuable support, participation and guidance throughout the research and student training process. We would like to thank also the Honors College-Center for the Humanities Summer Internship Program of Oregon State University for the financial award and institutional support for an important part of our research and student training.

Disclosure statement
No potential conflict of interest was reported by the authors.

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