CASE STUDY

Employing customizable digital observation tools to support classroom-focused pedagogical partnership

*__Emily Pitts Donahoe__, Center for Excellence in Teaching and Learning, University of Mississippi, USA.

__Jess Staggs__, Department of Anthropology, University of Maryland, USA.

__Dominique Vargas__, Department of English, California Lutheran University, USA.

Contact: ejdonaho@olemiss.edu

ABSTRACT

This case study examines the use of the Generalized Observation and Reflection Platform (GORP)—a digital tool for developing fully customizable observation protocols as well as for collecting, analyzing, and reporting quantitative observation data—within the University of Notre Dame's Inclusive Pedagogy Partnership. We found that the tool enhanced collaboration between partners in articulating and setting goals for their work and in highlighting and conceptualizing growth in the classroom. It also improved the efficiency of classroom observations and generated visual and quantitative data that usefully supplemented more traditional qualitative observations. Because of a steep learning curve, however, providing extensive time and support for partners in incorporating GORP was key to its successful implementation. We also suggest that GORP may serve as a useful tool for helping partners move between product- and process-oriented understandings of their work and for empowering student partners to take ownership of their observations.

KEYWORDS

pedagogical partnership, classroom observation, generalized observation and reflection platform, observation protocol, digital tools

Many partnership programs focused on classroom observations rely on the student partner's qualitative feedback and analog observation notes or classroom maps (Cook-Sather, Bahti, & Ntem, 2019; Reyes & Adams, 2017b; Corbin, 2014; Battat, 2012). These tools and the feedback they provide are crucial in allowing partners to draw on their experiences in the classroom, discuss relevant teaching and learning concepts, and create meaningful connections

with one another. We believe, however, that diversifying observational methods and data collection can enhance ongoing dialogue in classroom-focused partnership, as some programs have already demonstrated (Addy et al., 2022). Specifically, many partners may benefit from quantitative, in addition to qualitative, observational data (Asgari et al., 2021; Reinholz & Shah, 2021; Reinholz et al., 2020; Reisner et al., 2020; Reinholz et al., 2019; Shah et al., 2016) and appreciate digital tools that provide more efficient ways of collecting it. Programs like UC Davis's Generalized Observation and Reflection Platform (GORP)—a digital tool for developing fully customizable observation protocols as well as collecting, analyzing, and reporting observation data—can aid student and faculty partners as they work to achieve their pedagogical goals, expanding the range of tools available to support partnership work.

This case study examines how the Inclusive Pedagogy Partnership (IPP) program at the University of Notre Dame incorporated GORP as one among several observation tools into its pilot program. Supported by program facilitators (Emily and Dominique) and an undergraduate research assistant (Jess), our faculty/student pairs drew on collaboratively generated goals to create unique GORP protocols for classroom observations. Student partners employed the digital tool in at least one observation and used the program to generate and analyze observation reports. They then shared the reports with faculty partners to enhance discussion and reflection in their regular meetings.

We evaluated the efficacy of the tool through an end-of-program survey and two focus groups. Partners found that GORP was beneficial to them in articulating and setting goals for their work together and in highlighting and conceptualizing growth. They appreciated that it increased the scope and efficiency of observations, allowing student observers to record classroom events more quickly. They also appreciated the visual and quantitative data that GORP provided as a supplement to their more traditional qualitative observations. Because of the tool's steep learning curve and some unanticipated delays, however, the timing of GORP's introduction to the program created several difficulties, and a research assistant with extensive knowledge of and experience with the tool was key to its successful implementation. We also suggest that GORP's inclusion in the IPP productively complicated the binary between product- and process-oriented work (the latter of which is most often ascribed to partnership initiatives), allowing partners both to work toward collaboratively generated goals and to iteratively discover new areas of inquiry for their partnership. We close by emphasizing the need for a robust support system in the implementation of GORP, suggesting how the tool may help empower student partners to take ownership in their observations, and highlighting the need for more work on observation processes within partnership programs.

PARTNERSHIP CONTEXT AND USE OF GORP

The Inclusive Pedagogy Partnership, proposed within the ND Learning | Kaneb Center for Teaching Excellence in Fall 2021, was built on the model of other successful classroom-focused partnerships and drew from the extensive scholarship on DEIJ (diversity, equity, inclusion, and justice) and partnership work (Cook-Sather et al., 2021; de Bie et al., 2021; Marquis et. al., 2021; Cook-Sather, 2020; Cook-Sather et al., 2020; Cook-Sather, 2019; Cook-Sather, Krishna Prasad, et al., 2019; Cook-Sather & Agu, 2013). The program was piloted with five student-faculty pairs from across the disciplines who worked together in Spring 2022, with

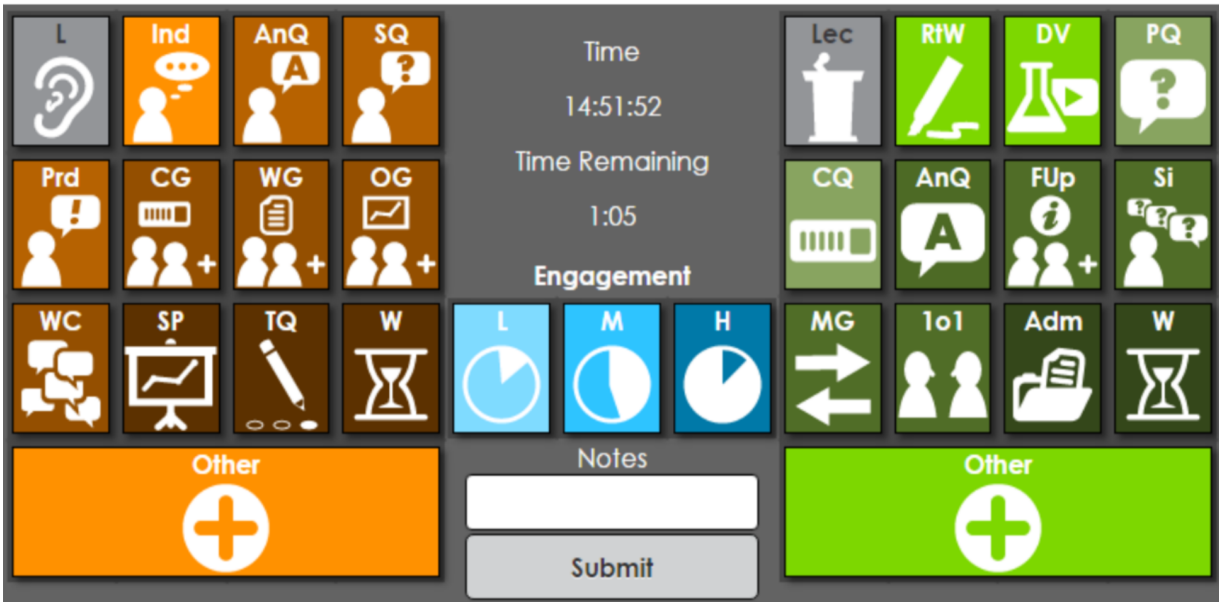
students observing faculty teaching on a weekly basis. Partners met regularly to exchange perspectives with the shared goal of creating more inclusive classrooms.

GORP was already being used by the center's Learning Research team to conduct observations for various research projects. It struck program facilitators, Emily and Dominique, as a useful tool for helping partners iteratively discover, set, refine, and pursue their pedagogical goals and record quantitative data to bolster observations. We were especially interested in how it might promote collaboration between partners as they developed individualized protocols to address unique concerns and in how GORP observation reports could complement other kinds of observational data they collected. Program facilitators partnered with an undergraduate assistant in the Learning Research area, Jess, who had used the tool extensively to introduce GORP into the IPP.

OVERVIEW OF GORP

GORP offers a means for creating and implementing classroom observation protocols as well as generating observational data. The platform, which can be accessed on a tablet, laptop, or desktop computer, provides users with popular existing observation protocols including COPUS (Smith et al., 2013), ELCOT2 (Tolnay et al., 2017), and OPAL (Frey et al., 2016) and the opportunity to create and customize their own. Protocols can be made by editing existing protocols or generating new ones. Implementing GORP observation protocols allows users to create real-time records of behaviors and events in the classroom using "buttons" representing these behaviors or events (see Figure 1). Pressing a button allows the observer to record events, measuring both their count and duration. GORP also allows users to insert time-stamped text entries for qualitative notes throughout the observation and for anything they observe that is not accounted for in the protocol.

Figure 1. GORP observer interface

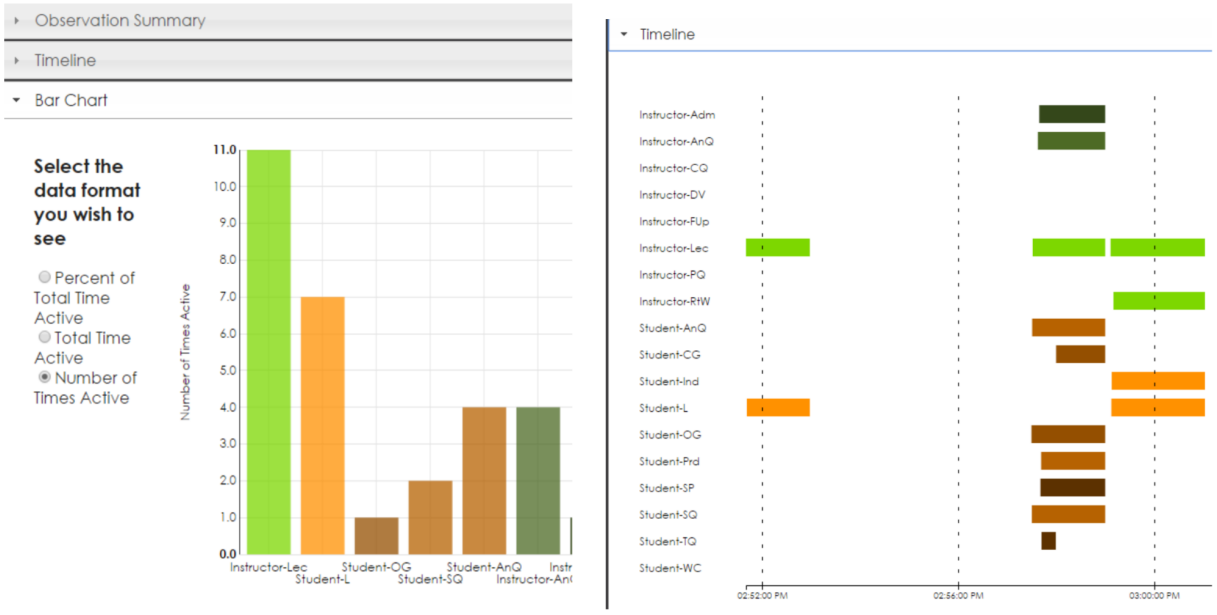


Screenshot of the GORP observer interface for the COPUS protocol, from GORP's user manual. The orange buttons at left indicate student actions like listening (L), working in groups (WG), whole-class discussion (WC), and completing a test or quiz (TQ). The green buttons at right indicate instructor actions like lecturing (Lec), asking a

clicker question (CQ), moving through the classroom (MG), or waiting (W). A full key for the COPUS protocol is available in Smith et al., 2013.

GORP provides a platform both for performing observations and for analyzing the results of the observation. After an observation, GORP creates a summary of all events, bar charts for the activity of each button, and a timeline of all activity during the observation period (see Figure 2). The bar charts allow users to see the percentage of the total observation time that each button was active, the total time in minutes that each button was active, and the number of times in an observation that the button was active. The report can show, for example, how many times an instructor answered students' questions and what percentage of the class time was taken by the instructor answering these questions. The timeline is helpful for visualizing the progression of the class and how the recorded activities changed over time. For the duration of the observation the timeline shows every button that was active, allowing users to perceive overlapping actions and patterns of events throughout the class period.

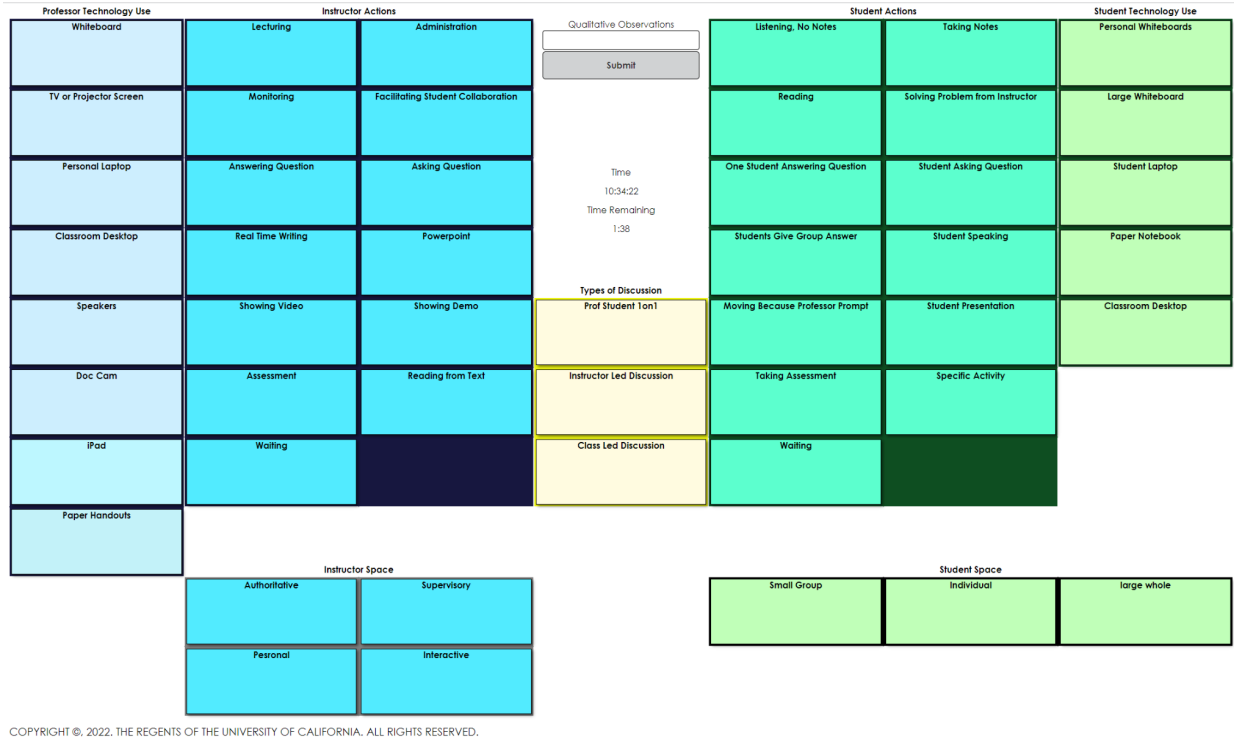
Figure 2. GORP observation report



Screenshot of a GORP observation report for an observation using the COPUS protocol, from GORP's user manual. The green instructor actions displayed include lecturing (Lec) and answering questions (AnQ). The orange student actions displayed include listening (L), group activities (OG), asking questions (SQ), and answering questions (AnQ).

The GORP platform can be used to create or customize observation protocols focusing on varied aspects of the classroom experience. The OPAL protocol, for example, monitors classroom activity levels and movement. In Spring 2020, the ND Learning | Kaneb Center created a protocol to measure active learning and engagement with technology in dedicated active learning classrooms. Buttons for this protocol allowed observers to record classroom actions indicating active learning and technology use for both students and instructors. Observers could also indicate when professors moved from one instructional space to another, as well as when students were working as individuals, in small groups, or as a larger whole.

Figure 3. Teaching center active learning protocol



Screenshot of the observer interface for the ND Learning | Kaneb Center's Fall 2021 protocol, designed to measure active learning and engagement with classroom technology in dedicated active learning classrooms. Buttons are in seven color-coded categories: Professor Technology Use, Instructor Actions, Types of Discussion, Student Actions, Student Technology Use, Instructor Space, and Student Space.

IMPLEMENTATION OF GORP

Student partner training and development of initial GORP protocols

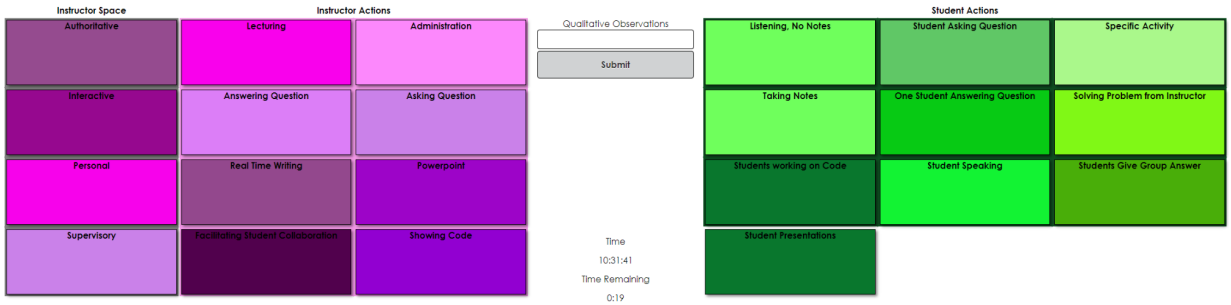
Jess, the Learning Research student assistant and an experienced user of GORP, introduced student partners to the tool during our January IPP orientation. Actual implementation of GORP was then intentionally delayed as student partners spent the first weeks of the semester generating qualitative observation notes and getting to know the classrooms and faculty partners they were observing. It was important to program facilitators that student partners build rapport with faculty and deeply understand their teaching practices and goals before building their observation protocols. At mid-semester, Jess conducted one-on-one consultations with student partners. These hour-long consultations included a walkthrough of the tool and preliminary discussion of how to create a protocol suited to the needs of their observational contexts. Students were trained on personal laptops or on university desktops, and students could use their laptops or tablets to access the platform during real-time observations.

After familiarizing themselves with the platform, students brainstormed individually and with the student partner cohort to design protocols based on the goals and concerns of their partnership. For example, one student observed a lab class in which their faculty partner was concerned that she took too long to answer student questions. To address this, the student

partner created buttons that allowed him to measure when students asked questions, what kinds of questions they asked (open or closed), and how long it took to answer those questions.

Student partners were given the option of creating an entirely new protocol or using an existing protocol that could be edited and customized to fit their needs. Most students chose to customize the teaching center's existing protocol for active learning (see Figure 4), as the protocol already addressed classroom interactions and student engagement and measured a range of inclusive teaching practices.

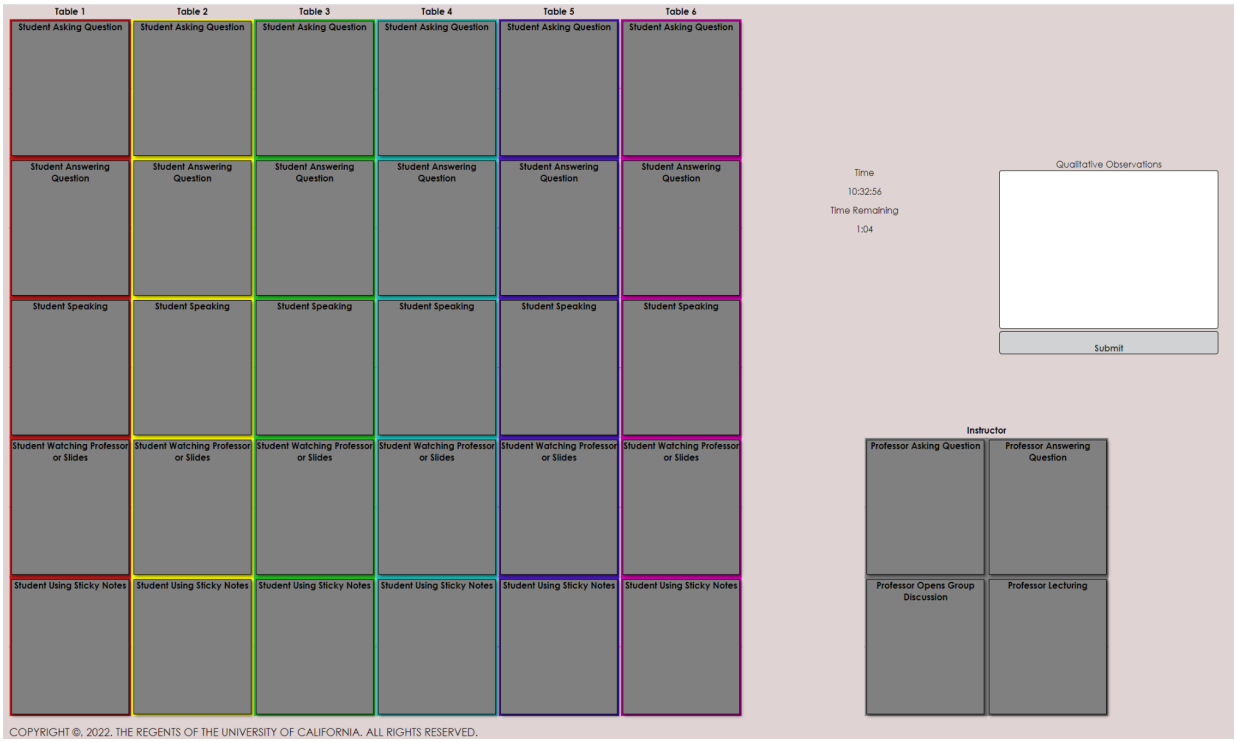
Figure 4. Sample student partner GORP interface, built on active learning protocol



Screenshot of a GORP observer interface for a protocol created by a student partner, modelled on the protocol in Figure 3. The purple buttons at left indicate Instructor Space (Authoritative, Interactive, Personal, and Supervisory) as well as Instructor Actions (like Lecturing, Facilitating Student Collaboration, and Showing Code). The green buttons at right indicate Student Actions (like Taking Notes, Solving Problem from Instructor, and Students working on Code).

One student, however, constructed an entirely original protocol that spatially reflected the classroom (see figure 5). He created six button groups, representing the six groups of students into which the classroom was divided. Each group had identical buttons to measure specific behaviors by the students: asking questions, answering questions, speaking, watching the professor or slides, and using sticky notes to record their questions. A separate button group was created to measure the faculty partner's actions as well. This design allowed the student to localize classroom actions and measure how differently the six groups of students interacted during class, addressing the faculty partner's concern that her students were differentially engaged. Visualizing which students were less or more involved during class allowed the partners to see where the engagement gaps were in the classroom and tailor teaching to fill these gaps.

Figure 5: Sample student partner GORP interface, original design



Screenshot of the GORP observer interface for a custom protocol created by a student, in collaboration with his faculty partner. Buttons are organized so that each row lists student actions (like "asking question" or "using sticky notes") and each color-coded column indicates the classroom table at which the action took place. A smaller interface to the right records instructor actions. This protocol reflected the spatial organization of the classroom and allowed partners to see patterns of student engagement.

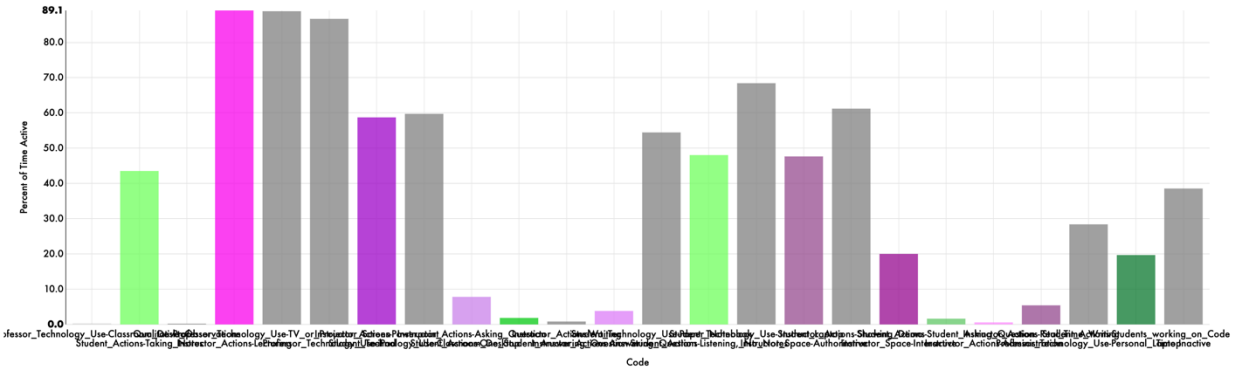
Implementing observations with GORP

Our goal was that each student would have an individualized protocol to use in their observations just after the midterm break. All students, however, faced at least one delay in implementing GORP. Several found themselves overwhelmed at mid-semester with other commitments and were forced to postpone their GORP consultations until after the break. Some took longer to develop their protocols than anticipated, either because of the steep learning curve for the tool or because they wanted more time to consult with their partner about the protocol. We also encountered technical difficulties in facilitating access to GORP for the student partners, which caused some students to lose their work on the protocols.

Four out of five student partners implemented GORP in at least one observation after midterm break. One partner used GORP for 2–3 observations, two used it for 4–5 observations, and one used it more than 5 times. After each observation, the student partners generated a report, which they shared with their faculty partner and/or used to inform their follow-up conversations with faculty. Three of four partners made changes to their protocols after their initial observation, refining protocols for usability or based on suggestions from their faculty partner. Student partners also met with one another and program facilitators during this process to share their protocols, draw inspiration from the work of others, and think collaboratively about how GORP could be used to fulfill their goals.

This iterative process was central to the experience of the tool, particularly for one student-faculty pair that was initially skeptical about GORP. They had already developed a mutually agreeable, individualized system for recording observation notes, which they used to collaboratively reflect on each class session. They felt that GORP might interrupt that system, and their initial experience with the tool validated some of their hesitation. The first protocol developed by the student partner included too many metrics, and the resulting reports were confusing and difficult to read or interpret (see Figures 6 and 7).

Figure 6. GORP observation report bar chart—early attempt



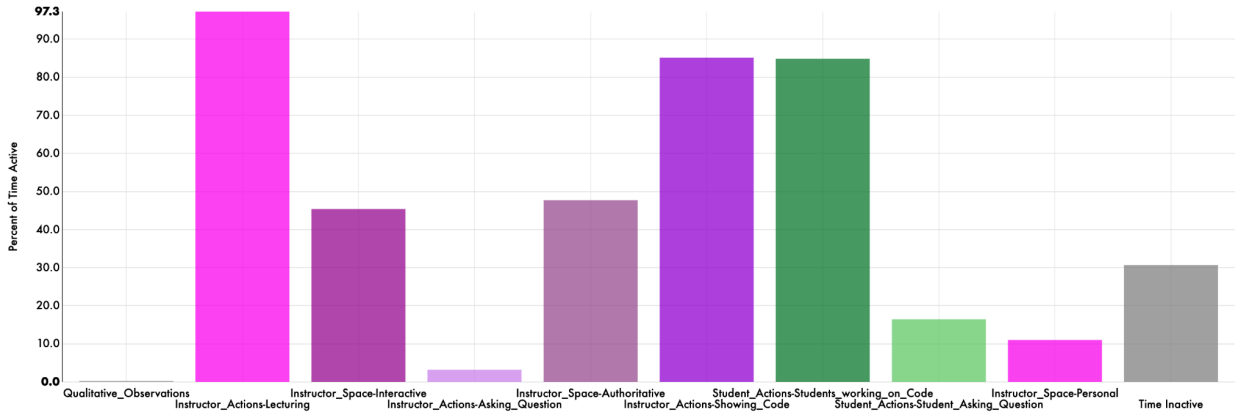
Observation report bar chart automatically generated from an early version of a student partner's custom protocol. Both student and faculty partner found these results overwhelming and difficult to interpret, not only because they included too many metrics but also because the button text overlapped on the bottom of the automatically-generated chart, making it impossible to read.

Figure 7. GORP observation report timeline—early attempt

Observation report timeline automatically generated from an early version of a student partner's custom protocol. Partners found the number of metrics here overwhelming.

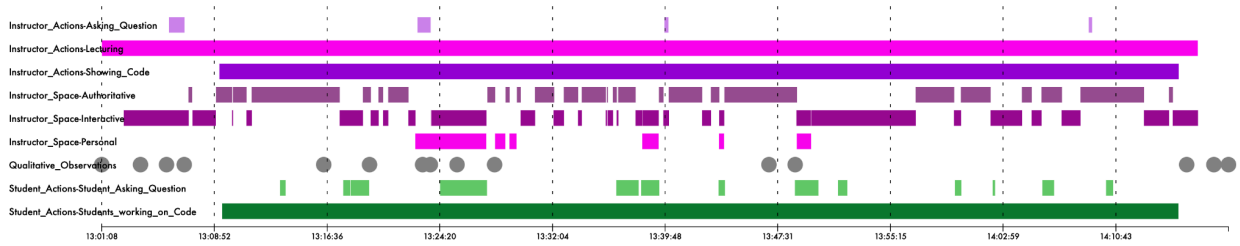
Though continuing to work with GORP was at the discretion of partners and not a requirement of the program, the student persisted in revising the protocol. By condensing and refining the metrics to prioritize specific elements of the classroom experience, she ultimately created a protocol that was useful both to her and her faculty partner. While the readability of the report's display still presented a challenge (see Figures 8 and 9), the student partner found the visual representation of information helpful, while the faculty member appreciated that it improved the efficiency of the observations.

Figure 8. GORP observation report bar chart—later attempt



Observation report bar chart automatically generated from the later version of the student partner's custom protocol. Though they still encountered challenges with the report's readability, partners could clearly distinguish color-coded categories like Instructor_Actions-Lecturing and Student_Actions-Student_Asking_Question on the bar chart. Both the student and faculty partner were pleased with the streamlined protocol.

Figure 9. GORP observation report timeline—later attempt



Observation report timeline automatically generated from the later version of the student partner's custom protocol. Partners found the number of metrics here much more manageable.

Because most partners implemented the tool late in the semester, the quantitative data it generated often reinforced what their qualitative observations and discussions had already revealed. It did, however, yield new insights for some. One partner pair reported that GORP helped them see patterns of classroom engagement they had not previously noted. The quantitative account of student behavior enabled by GORP contradicted both partners' general impressions of engagement in the course. According to the metric the partners designed to measure engagement, some students that they had previously assumed to be less engaged during class time were very engaged, while some students they presumed to be very engaged

were off-task for more of the class time than estimated. This led the partners to reflect on their assumptions about engagement and what an "engaged" student looks like.

RESULTS

At the end of the semester-long partnership, we surveyed all partners about their experiences with GORP and conducted two focus groups, one with two student partners and one with two faculty partners.

Timing

The most universal piece of feedback we received on the use of the tool is that partners wished they had been able to implement it earlier. Unanticipated delays, along with a steep learning curve, meant that some partners did not employ GORP until the final weeks of the semester when some classroom structures had changed, making GORP observations less useful. One student partner employed GORP only minimally because the last weeks of the class were devoted to student presentations rather than normal classroom instruction. Partners reported, however, that getting to know each other and the classroom context before creating their GORP protocol was essential. Moreover, they found it a useful way to re-energize their partnerships at mid-semester.

Program and technical support

Providing robust support for partners' use of GORP, in the form of a partnership with another undergraduate student, was also key. Because GORP presented a steep learning curve and its interface was not always user-friendly, incorporating it into the program required a knowledgeable and experienced user who could facilitate partner training and answer questions or solve problems as they arose. The program facilitators relied heavily on Jess, the Learning Research student assistant, to provide this support, and partners reported that the collaboration was key to their success in employing the tool.

Efficiency

Despite some difficulties, partners reported that using GORP improved the efficiency of their observations and even their regular meetings. Many of our student partners initially used the observation method recommended in Cook-Sather, Bahti, and Ntem's (2019b) book resources, in which students "provide a play-by-play of the class session" (Cook-Sather, Bahti, & Ntem 2019, p. 172), writing descriptions of what happens in the class from moment to moment in one column and offering their commentary on these happenings in another. Partners found these comprehensive records of classroom events useful and observed that GORP helped them create such records more efficiently. Instead of typing out a description of each event as it occurred, partners could simply press a button to record the event, leaving them more time to concentrate on their commentary on and qualitative observation of the event. While negotiating the interface was challenging at first, student partners found that GORP helped them focus more clearly on the goals they set with their faculty partner and improve the organization and accuracy of their observations. Additionally, one student reported that it improved the efficiency of her follow-up conversations with faculty, as she was able to draw

attention quickly to specific moments in the classroom and to articulate concisely what was happening in the classroom during those moments.

Visual and quantitative data reports

Partners also reported that the nature of the data and report generated by the tool was among its most significant advantages. One student partner noted that the report's visual display caused her to think about the goals she and her faculty partner had established in new ways. Faculty partners were also interested in how the quantitative data generated by GORP complemented their student partner's qualitative observations. They suggested that GORP might be an especially appealing tool to faculty who are more quantitatively-minded or who might be more fully convinced of qualitative observations supported by quantitative data. We would add that the combination of quantitative and qualitative observational data may benefit instructors regardless of their methodological preferences and may be especially useful in addressing equity concerns (Reinholz & Shah, 2021; Reinholz et al., 2020; Reinholz et al., 2019; Shah et al., 2016).

The tool was also valuable in its ability to visualize misalignments between partners' assumptions about what was happening in the classroom and what was actually happening. Instructors' perceptions of their own teaching are not always accurate, and neither, of course, are observers'; quantitative data, like that provided by GORP, can sometimes help alleviate misperceptions about classroom practice (Asgari et al., 2021; Cosbey et al., 2019; Lund et al., 2015; Ebert-May et al., 2011; Fung & Chow, 2002). Like other aspects of partnership, student-led conversations about these misperceptions have the potential to induce feelings of vulnerability, even when trust between partners is strong. When partners feel supported enough to engage these conversations, however, GORP can enhance the work of critical reflection and iterative revision already established in the partnership.

Process- versus product-oriented work

A core component of the framework for collaborative partnership practice is the insistence that partnership is a relational process rather than a means to achieve a fixed outcome (Matthews 2016; see also Abbott & Been, 2017). While partnerships can lead to various outcomes, what unfolds along the way "is as, if not more, important than what comes out at the end" (Cook-Sather, Bahti, & Ntem, 2019a, Partnership is a process section, para. 1). In our program, faculty and student partners needed increased support in order to develop this mindset. Conversations during the recruitment and orientation phase of the program often centered around faculty and student concerns about what the program was meant to "address" or "fix" in the classroom.

Implementing GORP, perhaps counterintuitively, encouraged partners to think about process- vs. product-oriented work in more nuanced ways. Partners indicated that the tool was most helpful in articulating and setting goals for their work together and in highlighting and conceptualizing growth—a possible indication that they conceived of partnership as product- or outcomes-driven rather than, as Healey et al. (2014, p. 9) suggest, a process that is "about being (radically) open to and creating possibilities for discovering and learning something that cannot be known beforehand." But while many used GORP to work toward specific goals or products, the tool also helped them discover new areas of inquiry for their partnership, leading

them to re-examine, for example, their assumptions about student engagement based on unexpected data collected through a custom protocol. GORP helped partners to better understand, in other words, how outcomes might emerge from process-oriented discussions, and process-oriented discussions sometimes influenced a revision of partner-produced goals.

We believe that incorporating GORP into partnership complicates the binary between product-driven and process-oriented work. When implemented successfully, it may allow partners to create a roadmap for their work together so they can proceed through the partnership with a sense of direction toward a shared endpoint. But it may also make visible new paths toward the same destination, illuminate other worthwhile destinations, or stimulate reflection on why some paths or destinations are prioritized over others. In this way, GORP may help partners move between product- and process-oriented work, allowing partners both to collaborate on a shared outcome and to discover alternative possibilities for collaboration along the way.

CONCLUSION

While the implementation of GORP in the IPP was not perfect, we believe the tool can play a useful role in partnership work when intentionally introduced and integrated. Our primary recommendation for employing GORP in such programs is to ensure that a robust support system is in place for all partners. For us, successful implementation of the tool required the help of an experienced user along with more time than we anticipated for student practice and partner collaboration. Allowing partners to get to know each other and the classroom context before implementing GORP is important, but we believe there are ways to preserve this time and space while also building the scaffolding partners will need to experiment with new observational methods and tools as their partnership evolves.

We would also argue that allowing partners choice in whether, how, and to what extent to use GORP or other observational tools is key. Our partners used GORP to measure a variety of things in a variety of ways. There was no one-size-fits-all guide to its implementation, nor would one be desirable. And while all our partners chose to experiment with GORP, some found it more valuable than others. At its best, the tool can provide a new way of looking at the classroom and a useful supplement to other observational methods. If part of the work of classroom-focused partnership is, as Cook-Sather (2008, p. 477) suggests in an early article, "multiplying the angles of vision" through which students and faculty examine the classroom, GORP and other quantitative observation tools can serve as yet another mirror that aids partners in their reflective processes.

Additionally, we see GORP as a tool that might empower students by inviting them to take ownership of partnership work. In the IPP, student partners were tasked with conceptualizing, conferring about, designing, implementing, soliciting feedback on, and revising their observation protocols. In the process of generating their own unique protocols and analyzing the data they created, they not only provided their faculty partners with a valuable source of information and feedback but also created tangible materials that they were proud to share with one another and with their partners. Moreover, their use of GORP allowed them to build a number of skills that are relevant to their academic work and research both as undergraduates and in their future professional lives. Employing tools like GORP, then, may help student partners see more clearly the value of their partnership work to all parties.

Finally, this case study also contributes to an emerging field of inquiry within the literature on classroom-focused partnership. Scholarly treatments of or reflections on specific partnerships mostly mention their observational procedures in passing (Bernstein, 2019; Eze, 2019; Signorini & Pohan, 2019; Daviduke, 2018; Oleson & Hovakimyan, 2017; Reyes & Adams, 2017a; Hagstrom et al., 2014; Wolkoff, 2014), even when they employ a variety of observational strategies (Addy et al., 2022). To our knowledge, there is no study that devotes sustained attention to what actually happens during classroom observations within partnership programs and how partners can work together to enhance observation processes. As partnership programs begin to incorporate more and more diverse observational tools and methods, we are likely to need more case studies examining their use and more work that marries the scholarship on classroom-focused partnership with the scholarship on classroom observation.

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NOTE ON CONTRIBUTORS

Emily Pitts Donahoe *is the associate director of instructional support in the Center for Excellence in Teaching and Learning at the University of Mississippi. At the time of this research, Emily was a postdoctoral fellow at the ND Learning | Kaneb Center, University of Notre Dame, USA.*

Jess Staggs *is a PhD student in anthropology at the University of Maryland, focusing on just energy transitions. At the time of this research, Jess was an undergraduate student and research assistant at the ND Learning | Kaneb Center, University of Notre Dame, USA.*

Dominique Vargas *is an assistant professor of English at California Lutheran University. At the time of this research, Dominique was a Postdoctoral Fellow at the ND Learning | Kaneb Center, University of Notre Dame, USA.*

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