

Problems of practice, solutions for sustainability: reconceptualizing mutual impact in school–university partnerships

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Abstract

Purpose – This study examines notions of sustainability in professional development schools (PDSs) through a critical, project-based (CPB) clinical model that challenges conventional concepts of sustainability in school–university partnerships (SUPs). Rather than focusing on structural SUP elements like formalized agreements or stable funding, the authors explore sustainability as an iterative process enacted through boundary-spanning activities that prioritize impact and mutual benefit for all participants. To this end, the authors propose a series of metaphors that help reconceptualize these more responsive PDS models.

Design/methodology/approach – This multiple case study analyzed qualitative data from four preservice teacher/school-based teacher educator pairs participating in the secondary education “Problems of Practice” CPB clinical experience. Examined through thematic analyses, data sources included pre-/post-surveys, observation logs, and interviews with eight participants.

Findings – Three key themes emerged: mutual growth, mutual goals, and relationship-based mentor selection. In the discussion, we examine these themes – alongside formalized “Essentials” of PDS sustainability – to propose illustrative metaphors for PDS sustainability.

Originality/value – This study reconceptualizes PDS sustainability by challenging intensification and scalability as primary metrics, instead emphasizing responsive, relationship-based interventions. While not discrediting other PDS formats, the CPB model offers an alternative pathway to sustainable partnerships that honors educators’ authentic needs while resisting neoliberal demands for replicability and standardization that often undermine boundary-spanning collaboration. Recognizing the potential of metaphors to crystalize complex ideas, the authors propose analogies to guide the development of novel PDS initiatives and better communicate with diverse partners.

Keywords Teacher education, Boundary-spanning, Clinical experience, Professional development school

Paper type Research article

The past two decades have witnessed an enduring call for the transformation of teacher education through clinically oriented preparation models. Since the Blue Ribbon Panel Report’s publication (NCATE, 2010) and the “clinical pivot” that followed, teacher educators have worked to develop and implement school–university partnerships (SUPs) that



meaningfully bridge the theoretical knowledge of university coursework with the practical wisdom of classroom practitioners. Among these partnerships, professional development schools (PDSs) represent a particular model – characterized by its emphasis on mutual benefits, collaborative inquiries, and the integration of preservice teacher (PST) preparation with ongoing professional learning for school- and university-based educators (NAPDS, 2021). Yet despite decades of research demonstrating the potential of PDSs to improve both teacher preparation and PK-12 student outcomes, questions persist around how to design – and, more importantly, sustain – these complex partnerships in ways that honor the needs and assets of all participants.

Sustainability represents a fundamental tension between the aspirational goals of partnership work and the material realities of institutional contexts. Teacher educators face intensifying demands to produce “practice-ready” graduates while navigating the deprofessionalization of teaching and teacher education (Zenkov & Rudder, n.d.; Clifton & Jordan, 2019). School-based partners find their workloads mounting and their profession routinely denigrated (de Saxe et al., 2020). The question becomes not simply whether PDSs can survive, but how they might be reimagined to remain responsive to the needs of the educators and students they serve. This query becomes more urgent when we consider that many PDS models emerged from elementary contexts, which may not capture the complexities of other teacher preparation realities, including the secondary education world of this article’s authors.

In this article, we examine notions of sustainability in PDSs by challenging conventional understandings of what makes such collaborations “sustainable.” Rather than focusing on structural elements such as formalized agreements, stable funding, or consistent leadership – though these certainly matter – we explore sustainability as an iterative, responsive process focused on impact, enacted through university-based teacher educators’ (UBTEs) and school-based teacher educators’ (SBTEs) “boundary-spanning” activities. We argue that sustainability in SUPs and PDSs is not a static achievement to be secured through the right combination of structures and resources, but rather an evolving accomplishment that requires continuous adaptation and prioritizes authentic impact.

Our examination of sustainability is grounded in a case study of an iterative PDS involving a university-based teacher education program and four local secondary schools. Unlike traditional PDS models typically established through top-down administrative agreements and formalized structures, our partnership emerged organically from shared concerns about the preparation of secondary English teachers; it has unfolded in response to changing contexts, emerging needs, and deepening relationships. Central to this evolution has been our implementation of a critical, project-based (CPB) clinical practice model that positions PSTs as co-researchers examining “problems of practice” identified jointly by school- and university-based educators. This model attempts to bridge the false theory/practice dichotomy by engaging PSTs in systematic inquiry and co-planning/co-teaching, drawing on scholarly literature and the situated knowledge of practicing teachers. In the process, SBTEs grow as pedagogues and mentors, and UBTEs engage authentically in sites of research, including via co-teaching in the classrooms for which they are preparing future teachers (Goldstein et al., 2019; Rudder et al., 2026; Rudder et al., n.d.; Zenkov et al., 2026).

We begin with a review of the literature on PDSs, considering notions of sustainability and mutual benefits. Following this theoretical grounding, we describe our research context and methodology, introducing our partnerships and the CPB clinical practice model that has been central to our work, followed by findings organized around two research questions.

RQ1. What are the outcomes of a pilot implementation of a CPB clinical experience centered on “problems of practice”?

RQ2. What structures supported the implementation of such a CPB model?

In the discussion, we examine these findings alongside pre-existing notions of sustainability in SUPs through the influential framework of [Lakoff and Johnson \(1980\)](#), proposing metaphors to guide teacher educators and scholars in reconceptualizing responsive, sustainable boundary-spanning. Metaphors function as a means for crystalizing complex ideas, and our aim is to propose ways in which partnerships might be reimagined through functional analogies and then differently enacted to prioritize mutually beneficial impacts across changing contexts. Ultimately, we highlight alternative, sustainable PDS models while offering conceptualizations that assist teacher educators in communicating with their many constituents.

Literature review

Teacher education scholars continue to recommend that school-based clinical experiences, fostered through mutually beneficial SUPs, should be at the core of teacher preparation practices ([AACTE, 2018](#); [Burns et al., 2025](#); [NCATE, 2010](#); [Kretchmar & Zeichner, 2016](#)). SUPs resist standard definitions, but they are typically identified by school- and university-based participants operating with common educational practices related to co-inquiry and/or co-teaching ([Rutten et al., 2025](#)). PDSs are a specific type of SUP characterized by four “pillars”: PK-12 student learning, jointly coordinated teacher education, mutual professional growth, and the construction of new knowledge through research ([NAPDS, 2021](#)). A primary rationale for PDSs is to bridge the gap between university- and school-based teacher education, drawing these two structures and their concomitant roles together around the shared endeavor of teacher preparation ([Zenkov et al., 2024](#); [NAPDS, 2021](#)). Professional associations (e.g. [Burns et al., 2025](#); [NAPDS, 2021](#)) and scholars (e.g. [Cosenza et al., 2024](#); [Rutten et al., 2025](#)) have explored the ways in which PDSs might be sustainably enacted while mutually benefitting all participants.

Focused on these two elements – sustainability and mutual benefits – here we first explore the scholarly groundwork of PDSs, then examine the practice of boundary-spanning – a complex element of PDSs that incorporates its own notions of sustainability and engendering mutual benefits for participants. We next describe CPB clinical experiences, the boundary-spanning model employed in our case. Finally, we briefly detail the framework of conceptual metaphors that underpinned our study.

Professional development schools (PDSs)

PDSs have been most comprehensively defined by the National Association of School-University Partnerships (NASUP, formerly NAPDS) via its “Nine Essentials,” working elements of these clinically oriented SUPs ([NAPDS, 2021](#)). While all of the Essentials offer considerations for designing and implementing sustainable PDSs, we focus our attention on Essentials 6–8; these offer considerations for how PDSs might be sustainably implemented and mutually beneficial to all partners. And, based on a recent systematic review, these are infrequently examined in PDS studies ([Polly, 2023](#)). We first investigate Essentials 6 and 7 (Articulated Agreements and Shared Governance), considering limitations and barriers to these practices. Afterward, we explore Essential 8, boundary-spanning, noting ways in which boundary-spanning efforts promote and complicate concepts of “sustainability” in SUPs.

Articulated agreements (Essential 6). Above all, PDS structures need to be relevant to the partners they serve and the contexts in which they operate ([Cosenza et al., 2024](#); [Dresden et al., 2016](#); [Rutten et al., 2025](#)). Even PDSs that adhere to the characteristics established in the Nine Essentials can take many shapes: They may be ad hoc, short-term arrangements (e.g. [Polly, 2017](#)) or long-term, ongoing partnerships framed by memoranda of understanding or MOUs (e.g. [Dresden et al., 2016](#)). Yet while broadly defined, Essential 6 specifies that each PDS should be undergirded by articulated agreements regularly renewed to ensure shared goals and outcomes ([Goree et al., 2023](#); [NAPDS, 2021](#)).

And yet, scholars have acknowledged that PDS partnerships necessitate *improvisations* that may supersede or adapt written agreements for the sake of generating more responsive initiatives (Hudson & Harder, 2025). The localized complexity of PDSs is often viewed as a strength of these partnerships (Garin & Burns, 2020), but the amorphousness of these structures affects how success is evaluated and replicated (Clifford & Millar, 2008; Fynn *et al.*, 2020). Without common tools to support the innovations in teaching and learning produced through partnerships, PDSs' co-created knowledge can demonstrate only limited replicability (Fynn *et al.*, 2020). Further, due to hyper-contextuality, what was successful in one classroom/school may not be adaptable to other contexts (Sarmiento-Márquez *et al.*, 2025).

Shared governance (Essential 7). In any SUP, engagement deepens when members from both school and university contexts serve as leaders and contribute toward a mutual goal (Sterrett *et al.*, 2022). With a deeper sense of engagement, partners become more adaptive to challenges as they develop the ability to co-create knowledge around problems (Hudson & Harder, 2025; Sarmiento-Márquez *et al.*, 2025). Essential 7 stipulates that PDSs are designed and operated through equitable collaboration that values all participants' voices (Coler *et al.*, 2023; NAPDS, 2021). However, maintaining a PDS requires an investment of time and effort by all actors, and such activities and commitments are often unpaid and under-appreciated (Zenkov *et al.*, 2024; Sarmiento-Márquez *et al.*, 2025).

While UBTEs' greatest strength may be their skill at reinventing themselves to meet the needs of their partners, UBTEs engaged in SUPs can struggle to explain their ever-shifting roles to administrators or external stakeholders (Clifton & Jordan, 2019). Offering such rationales becomes more difficult in a political context where the fields of education and teacher education are under assault (Zenkov & Rudder, n.d.; Clifton & Jordan, 2019). For school-based partners, governance that includes only executive school leadership can negatively impact teacher engagement and outcomes (Shekitka & Coakley-Fields, 2025). And yet, engaging in the activities of shared governance places more responsibility on already overburdened teachers and administrators (de Saxe *et al.*, 2020). Counterintuitively, such leadership opportunities actually *promote* teacher well-being (Maslach & Leiter, 2022) and decrease attrition (Drew *et al.*, 2024; Fatahi & Warner-Griffin, 2024). Designing PDS governance then becomes a tricky balancing act: PK-12 partners benefit most when they help define the PDS initiatives and outcomes, but embracing those leadership opportunities further encumbers an intensified profession (Mkhomi *et al.*, 2025; Zenkov *et al.*, 2026).

Boundary-spanning (Essential 8)

We propose that the key criteria of a PDS model that meets an alternative, more operational notion of sustainability is Essential 8: Boundary-Spanning (NAPDS, 2021). In this section, we contextualize boundary-spanning and problematize the ways in which "mutual benefits" relate to sustainability in teacher education. Finally, we examine CPB clinical experiences as an example of sustainable boundary-spanning in action.

Definitions and benefits of boundary-spanning. In the earliest conceptualizations of clinical PDSs, universities were the primary impetus for these often transactional collaborations: Universities needed school sites for PSTs to complete "clinical" (né "field") experiences and for education scholars to conduct their research. However, boundary-spanning endeavors predicated on mutual benefits for all partners are intended to shift the focus of the partnership and address all collaborators' concerns (AACTE, 2018; Rudder *et al.*, 2026; Zenkov *et al.*, 2026). Boundary-spanning within SUPs describes a model wherein educators in one context (e.g. a university) move into another professional context (e.g. a school) to work alongside educators in differing roles (AACTE, 2018; NAPDS, 2021; Rudder *et al.*, 2026; Zenkov *et al.*, 2025). In such a configuration, partners take on the capacities of the other in a hybrid (or sometimes third) space (Akkerman & Bakker, 2011; NAPDS, 2021; Rudder *et al.*, 2025, 2026).

Thus, boundary-spanning partnerships are, by design, responsive, contextually relevant endeavors that necessitate ongoing renegotiations of expectations and norms (Risan, 2022) –

an iterative process incompatible with rigid MOUs or standardized expectations. Boundary-spanning PDSs are often enacted more informally, centering the needs of the boundary-spanning partners rather than organization- or system-level agendas (e.g. Polly, 2017; Rudder *et al.*, n.d.; Zenkov *et al.*, 2026). While acknowledged in the Nine Essentials (NAPDS, 2021), we propose that these often ad hoc engagements need their own unique considerations of sustainability.

Complicating sustainability. In theory and practice, such cooperative structures are more sustainable because each party is able to tailor goals and outcomes to their specific needs and interests. For example, in a boundary-spanning PDS, SBTEs develop professionally by learning new instructional and mentoring practices, UBTEs establish a better understanding of local contexts for their research and PSTs gain teaching experience (Goldstein *et al.*, 2019). As such, the mutual learning may offer a form of compensation that motivates educators to engage in this complex, voluntary work (Rutten *et al.*, 2025).

However, while *theoretical* definitions of boundary-spanning emphasize the idea of engendering benefits for all partners (AACTE, 2018), *practicable* boundary-spanning has historically neglected to address this tenet (Beck, 2018; Rudder *et al.*, 2026). For example, education researchers too often disregard how their findings can be shared with school-based personnel, leaving these “partners” feeling exploited (Chen & Mei Yi Lin, 2025; Lentz *et al.*, 2024) or only report one-way benefits for the school-based partners, reflecting what has been characterized as a paternalistic orientation (Beck, 2018; Rudder *et al.*, 2026). Even the title “boundary-spanner” is too often only ascribed to UBTEs, discounting the expertise of SBTEs as equal partners with the capacity to work across institutional contexts (Akkerman & Bakker, 2011; Rudder *et al.*, 2026; Zenkov *et al.*, 2025). These intrinsic hierarchies raise questions about equity in determining partnership goals, allocating resources and recognizing expertise across institutional contexts (Beck, 2018; Rudder *et al.*, 2026).

We suggest that these concerns about equity, sustainability, and mutual benefits might be answered in part by CPB clinical experiences. As we detail below (and further explicate in our Methods section), the actual application of boundary-spanning roles and structures that *enact* mutual benefits reflect iterative, responsive and impact-focused notions of sustainability.

Critical, project-based (CPB) clinical experiences

CPB clinical experiences are a form of ad hoc, boundary-spanning PDS that attempts to promote mutual benefits for partners through iterative, responsive and impact-focused concepts of sustainability (Zenkov *et al.*, 2026). Informed by Kretchmar and Zeichner’s (2016) community-oriented notions of “Teacher Preparation 3.0,” CPB structures are contextually relevant, community-based, and consider the authentic circumstances and needs of PK-12 students. CPB clinical experiences call on PSTs to partner with established teachers serving in mentor capacities (i.e. SBTEs), co-planning and co-teaching to address the SBTE’s pedagogical challenges (Zenkov & Pytash, 2022, p. 65). Unlike traditional clinical experiences – where PSTs passively observe a mentor’s classroom – CPB initiatives require PSTs co-teach with SBTEs (Strutchens *et al.*, 2019; Leonard *et al.*, 2021) and center the perspectives of young people in PK-12 classrooms as a form of criticality (Zenkov & Pytash, 2022; Emdin, 2016; Zenkov & Rudder, 2025).

When PSTs engage in the classrooms like those where they might one day teach, they learn to adapt skills from their university courses in contextually relevant ways (Roegman *et al.*, 2020), and SBTEs have the opportunity to expand their pedagogies and grow as mentors (Dutro *et al.*, 2018; Rudder *et al.*, n.d.). Uniquely, these shorter engagements can also provide UBTEs with opportunities to co-teach with preservice and veteran teachers (Dennis *et al.*, 2017; Zenkov *et al.*, 2026), further expanding potential mutual benefits (AACTE, 2018; Clarke *et al.*, 2014; Fitchett *et al.*, 2018; Zenkov *et al.*, 2025). Combined, these features demonstrate a level and type of mutuality that should be central to sustainable boundary-spanning endeavors.

Typically occurring early in teacher candidates’ programs, these brief clinical experiences are more sustainable – and justifiable – than some PDSs as they do not require long-term

commitments from or rigid agreements with partners (Álvarez, 2023; Zenkov & Pytash, 2022). Although abbreviated in length, these clinical experiences share governance among participants, uniting educators across roles with opportunities to address their professional and academic needs (Zenkov & Pytash, 2022; Dutro *et al.*, 2018). These structures offer an alternative to formal PDS models – countering the time-, scale- and replicability-bound concepts of sustainability in which SUPs have long been rooted. We acknowledge that CPB clinical experiences are a relatively new construct within the field of teacher education, and while some scholarship exists that investigates this model, additional research is needed to document their impact.

Conceptual framework: metaphorical analysis

To understand both the notions of sustainability that have traditionally undergirded PDSs and to begin to reimagine alternative ideas, our study was rooted in the foundational work of George Lakoff and Mark Johnson (1980). Lakoff and Johnson argued that all of our operational conceptual frameworks – what we endure or witness, how we communicate and the actions we take – are metaphorical or analogous. They theorized that conceptual metaphors subconsciously take shape when we attempt to comprehend difficult or abstract notions (Gibbs, 2014).

While most often unarticulated, our everyday lives are suffused with metaphors (e.g. “argument is war”), influencing our understanding of the world around us (Gibbs, 2014). These metaphors are *not* objective phenomena, and they can be communicated and manipulated, and even become pervasive, productive, or destructive – intentionally or unintentionally. But, in the words of Lakoff and Johnson, the metaphors we *live* by – or, in the case of SUPs and PDS, the metaphors we *partner* by – are, with rare exception, not part of our conscious operation in the world (Zenkov *et al.*, 2024). Employing this metaphorical analysis framework in our study, we propose that an awareness of the conceptual metaphors that our PDS structures unconsciously enact might enable us to identify alternative, more accurate analogies.

In the Discussion and Conclusion of this article, we propose that these alternative conceits might better reflect our endeavors and build both a conceptual and practical bridge across that traditional school–university divide. Our consideration in this article of the metaphors related to notions of SUP/PDS sustainability began with our enactment of a version of the CPB model we have described above. In the next two sections, we examine this pilot CPB initiative – known as the “Problems of Practice” (PoP) project – to assess how such models might be structured to ensure authentic mutual benefits and deepen ownership of outcomes, enacting the alternative notions of SUP sustainability around which this article is oriented.

Methods

This multiple case study (Stake, 2006) evaluated qualitative data from the first-year implementation of the PoP project – a CPB clinical model – as part of a Secondary Education (SEED) Methods I course. In this section, we detail the context and bounds of the case, then describe data collection and analysis methods, followed by limitations. We begin with a portrait of our positionalities as these professional roles and social identities impact our work as boundary-spanners and scholars.

Positionality

Kristien (Author 2) – a veteran UBTE and director of the SEED program at the university – designed the PoP model with feedback from Lin (Author 1) – an alumna of the program and doctoral student in teacher education. In addition to her doctoral work, Lin is a veteran high school teacher. In this role, she has served as a boundary-spanning SBTE since 2021 in various CPB projects with Kristien. Jenny and Stephanie (Authors 3 and 4) assisted in designing the multi-case study, analyzing data, and writing the manuscript. Jenny is another UBTE and clinical

coach with the SEED program, and Stephanie is a doctoral candidate studying teacher education. Their perspectives added critical objectivity: Lin and Kristien functioned simultaneously as participants and researchers, which reasonably complicated their interpretations.

As the most veteran teacher and UBTE of our team, Kristien operated as a mentor to Lin during the enactment of the PoP and to the entire research team throughout the course of the study. As a White cis-gender man (and the only male-identifying member of our team) he remains cognizant of how his professional role and social identities can impact collaborative work and his perspectives as a scholar (Ríos & Patel, 2023). The other three authors all identify as White cis-gender women.

Bounds of the case: context and participants

The PoP project was a CPB clinical experience at George Mason, a large mid-Atlantic university that paired SEED students (i.e. PSTs) enrolled in their initial English instructional methods course with program alumni, who were veteran teachers recognized for their pedagogical abilities and chosen to serve as SBTEs (i.e. mentors). Figure 1 illustrates the PoP project across the method course’s 15 required clinical hours.

In Fall 2024, one UBTE (Kristien, Author 2) designed the PoP project with feedback from program alumni (including Lin, Author 1), all of whom were veteran teachers and experienced SBTEs. Next, with assistance from the university’s teacher preparation office, he matched the 14 PSTs enrolled in his cross-listed undergraduate/graduate Methods I course with those same alumni. Using convenience sampling, this project examined four such pairs (Figure 2). SBTEs included Lin, Paulina, Tim and Savannah (pseudonyms); paired PSTs included Melissa, Rus, Giulia and Beatrice (pseudonyms), respectively. The case was bound by the data from these eight participants who participated in PoP during Fall 2024. Because each pair selected a distinct PoP – and in some cases interpreted the requirements of the project differently – each pair was treated as a single case. These four cases comprised the multiple case study described in the data analysis below.

Figure 2 also details the year SBTE alumni graduated from the university and the class of focus for the PoP project as well as the PSTs’ college level when enrolled in the Methods I course. All PSTs were graduate and undergraduate students in their first semester of teacher preparation coursework, and all SBTEs were at different secondary schools. The UBTE was able to co-teach with the PST/SBTE pair in two of the four cases.

Data collection

Qualitative data for this study were drawn from surveys, clinical observation logs, and interviews (Figure 3). PSTs completed open-ended pre-/post-surveys at the beginning/end of the fall semester (Appendix A), and SBTEs completed an open-ended survey at the conclusion of the PoP project (Appendix B). These qualitative surveys were developed by Jenny (Author 3) with critical feedback from the other authors, asking participants to describe the PoP they

The Problems of Practice Model

- **Stage One:** PST observes their mentor’s (i.e., SBTE) classroom.
- **Stage Two:** PST & SBTE determine the PoP (i.e., pedagogical learning challenge).
- **Stage Three:** PST researchers pedagogical solutions based in high-leverage practices.
- **Stage Four:** PST and SBTE co-plan a lesson with feedback from UBTE.
- **Stage Five:** PST and SBTE co-teach the lesson (alongside UBTE when possible).
- **Stage Six:** PST and SBTE debrief and reflect on the lesson (with UBTE when applicable).

Figure 1. PoP project clinical experience

SBTE Info	PST Info	PoP Challenge
Lin English 12 Graduated 2017	Melissa Undergraduate Senior	Encouraging academic risk-taking through arts-based pedagogy*
Paulina English 12 Graduated 2020	Rus Undergraduate Senior	New methods of writing feedback
Savannah 7th Grade English Graduated 2024	Beatrice Undergraduate Senior	Writing efficacy through creative writing*
Tim English 11 Graduated 2011	Giulia Graduate Student	Writing efficacy to combat reliance on generative Artificial Intelligence (AI)

*Denotes lesson co-taught with UBTE

Figure 2. Participant pairings

Timeline	Data Source	Description
September 2024	PST Pre-Survey	Short, open-ended survey collaboratively designed by research team and administered to PSTs.
October 2024	Observation Log	Graphic organizer completed by PSTs during initial observation hours of their clinical experiences.
December 2024	PST Post-survey	Same as pre-survey with additional questions asking for logistical feedback on PoP Project.
December 2024	Mentor Survey	Short, open-ended survey collaboratively designed by research team administered to SBTEs.
Spring 2025	Interviews	45 minute semi-ethnographic interviews with each participant.

Figure 3. Data collection protocol

selected, how the issue was addressed, and ways in which the experience may have differed from other clinical experiences. The observation logs were developed by Kristien (Author 2) as part of his Methods I coursework: On their first clinical visit, PSTs recorded observations of student success/struggles, effective pedagogies, and questions/concerns into a graphic organizer which they submitted for a grade. This artifact helped provide context for PSTs' insights before selecting their PoP. Finally, after Fall 2024, semi-structured interviews (Spradley, 1979) were conducted virtually with each participant. These recorded and transcribed interviews explored participants' perceptions of the PoP process, challenges encountered, and perceived learning outcomes.

Data analysis

All authors engaged in a multi-phase analysis protocol drawn from complementary qualitative traditions to balance inductive openness with systematic rigor primarily guided by "interpretive reflexive" thematic analysis (Braun & Clarke, 2021, p. 334). This approach aligned with pragmatic research paradigms that prioritize methodological fit over methodological purity (Patton, 2015). In the first step of analysis, we familiarized ourselves with all data (survey responses, interview transcripts, and observation logs) during a period of "digesting and reflecting" (Clarke, 2005, p. 84). This inductive process led to the development

of 13 initial codes (Corbin & Strauss, 1998) that promoted more authentic conceptualization of participants’ experiences (Stake, 1995; e.g. calibrating support and autonomy, navigating hierarchy, bridging theory-practice, discomfort/vulnerability, etc.). We then met to finalize codes.

Next, qualitative data were organized using a multiple case study design (Stake, 2006). During the first round of coding, data were bound by specific PoP pairs (e.g. all data from Savannah and Beatrice related to their identified challenge were organized into one spreadsheet). To promote reliability, each case was then independently coded by Author 1 and at least one other researcher. We approached each case by first individually writing a descriptive analysis of the data (Miles et al., 2020), and then, through coding, identifying specific “issues” in each case (Stake, 2006, p. 11). Researchers met after coding each individual case to evaluate code application, discuss issues, and reconcile analysis, producing iterative analytical memos of our dialogues.

Next, we compiled noted issues alongside insights from the memos into matrices (Miles et al., 2020) to track cross-case patterns (Stake, 2006). This process allowed us to preserve within-case analyses (Ayres et al., 2003) while developing an overall depiction of the experience as a whole (Miles et al., 2020). This progression (illustrated in Figure 4) facilitated an evolution of our understanding into preliminary themes.

Given our dual roles as both researchers and participants in the case, Lin and Kristien (Authors 1 and 2) were attentive to how our insider perspectives might shape our interpretations; to temper the subjectivity of these interpretations, we relied on critical input from Jenny and Stephanie (Authors 3 and 4) and our participants. After data analysis, we conducted rigorous member-checking (Varpio et al., 2017) to ensure each participant reviewed transcripts and our interpretations matched their experiences. When one participant raised a concern, Lin met with them to discuss and reconcile interpretation, documented through additional memos. Finally, the authors met to discuss these additional memos and determine three themes: mutual goals, mutual growth, and relationship-based mentor selection.

Limitations

One apparent limitation of our study is its scope and scale: This was a pilot examination conducted with a small pool of PDS constituents identified through convenience sampling. As with any small-scale case, its results might be affirmed, expanded upon or impeached by further explorations. Critics might also reasonably argue that the relationship-based features of our project and sampling methods compromised the reliability of our interpretations.

Stage	Example	Analytical Question	Function
Initial Codes (n = 13)	Discomfort/vulnerability: Acknowledging anxieties or personal struggles	What is apparent in the data?	Descriptive labels
Issues (n = 8)	Overcoming fears: Pushing through discomfort to grow in confidence	What connects these codes conceptually?	Conceptual categories
Themes (n = 3)	Mutual Growth: Lasting benefits for SBTEs and PSTs	How does this relate to our research questions?	Interpretive synthesis

Figure 4. Data analysis progression

Findings

In this section, we present our findings as they address the two research questions. The first question is addressed by our first theme – mutual growth – an outcome of the pilot PoP CPB clinical experience. The last two themes – mutual goals and relationship-based mentor selection – address the second query, examining structures that supported the implementation of such a CPB model. Guided by our conceptual framework (Lakoff & Johnson, 1980), in the Discussion, we explore how these results and structures might influence the metaphors of sustainability with which PDSs (and, by extension, SUPs) could potentially operate.

Mutual growth

Our first research question prompted us to identify and consider the self-reported benefits for the participants, revealing the theme of mutual growth. For SBTEs, explaining their practice to PSTs helped them recognize their own expertise as teachers, professionalizing their roles while expanding their pedagogies. For PSTs, opportunities to collaboratively co-plan and co-teach enhanced their self-efficacy as pedagogues and professionals. Participating in the PoP project – although a brief partnership – promoted benefits beyond the short-term clinical experience.

Professionalizing SBTEs' practice. The SBTEs expressed ways in which the PoP project almost demanded them to reflect on their practice – and even on teaching as a profession. In her survey, Paulina wrote,

When planning becomes a standard routine, it can be easy to forget the amount of thought that goes into each lesson and each interaction. When I explain my thought process to people who have not done it before, it reminds me just how much I have grown when I can answer their questions; but also how much more I have to grow when I do not have all the answers.

In her interview, Savannah described a similar experience, noting how the co-planning process in particular impacted her as a teacher: “Opening up that dialogue, especially around how to scaffold reading was interesting. . . I feel like I know what the right answer is, but there are other answers as well.” She added, “Teaching is one of the really great things where we can see everyone’s creativity. . . I had new perspectives on the actual planning piece as well.” Savannah also admitted, “It’s so easy to kind of get stuck in my ways. . . to have that fresh perspective opened my mind up to, ‘Oh, that’s a good idea’.” Tim noted how he appreciated the project for how it professionalized teaching: “You guys at George Mason really do a good job of focusing on this professionalism of the profession.” He added, “Teaching’s not something you go in, you know, guns ablazin’, and you can figure it out on the fly. It’s something you need to be thoughtful about in a lot of ways, and I really appreciate that focus.”

PSTs' teaching experience. As Beatrice noted in her post-survey, the PoP experience provided PSTs with “hands on experience with teaching” in the first semester of their teacher education program. The following semester, when Beatrice was interviewed, she described how that initial exposure to authentic teaching had lasting impacts: “I went into [PoP] more nervous. Now I’m going into my internship, and I feel fine in a classroom setting.” Like Beatrice, Giulia recognized how the project gave her experience for her future classroom: “Observing my mentor teacher was incredibly valuable for me as someone who doesn’t have much teaching experience.” And, in her final survey, Giulia wrote, “It was so rewarding to see even just a few of the students engage meaningfully with the material!” Now in her first year as a full-time teacher, Giulia reflected in her interview, “I think my biggest takeaway is that’s how you meet your students’ needs: by finding that problem that they’re having. I think it’s really interesting going into your own classroom and asking, ‘what’s a problem?’”

Melissa noted in her interview how the PoP “was so uncomfortable. . . But, we all walked away okay. I felt like I had more control in my hands going into the classroom now because I had taken a risk like that.” Like Beatrice and Giulia, she appreciated how it gave her experience “actually planning a lesson, and helping to teach it” because “now in my internship, you have to do it.” She added, “There’s only so much that your college classes and observing can do.”

Like Melissa, Rus noted how the PoP made them uncomfortable, largely due to a fear of making mistakes. Rus reflected on how one of their PoP lessons went poorly because after changing their groups, the class fell silent: “I had not considered the way that this [strategy] would impact the engagement in a classroom with a lot of multilingual learners.” But in the process of completing the PoP, they overcame that fear:

I feel like now I realize that I will make mistakes. There’s no avoiding that. I am a human being. My students are human beings, too, which also means that if I am doing my job, and we are building relationships in the classroom, that they will forgive me if I make a mistake.

While our study did not measure potential long-term benefits, PSTs recognized an immediate impact on their approach to future clinical experiences and their own classrooms, and their overall self-efficacy as instructors. Further, data indicated ways in which PSTs were attuned to student engagement as a measure of success, embedding that student-centered criticality of CPB experiences.

Mutual goals

In response to our second research question, we identified mutual goals as a key facet of functionality and sustainability in CPB clinical experiences. As implied by its name, a necessary element of any CPB clinical experience is the “project” that PSTs attempt to accomplish during their time in the PK-12 classroom. Diagnosing a “problem of practice” naturally promoted a solution-oriented, asset-based approach to lesson planning that united educators across roles. Data revealed that SBTEs accomplished PoP in various ways, but all participants (PSTs and SBTEs) engaged thoughtfully in identifying and pursuing a mutual goal. And establishing a common goal leveled the hierarchy between PSTs and SBTEs, providing both educators with collaborative support.

Project-based design. In each case, PSTs approached the project the same way, but cases diverged with how problems were ultimately identified. PSTs began the PoP project by observing their SBTE teach and identifying potential pedagogical challenges, which PSTs felt gave them a greater sense of purpose in their observations. In comparing the CPB clinical experience to more traditional clinical experiences, PST Rus said in their interview, “Because I was working towards a goal of actually teaching those kids, I noticed more things.” The process resulted in the educators diagnosing student needs rather than criticizing student struggles. PST Giulia wrote in her post-survey, “I like that this project stemmed from a problem, which naturally led me to think about possible solutions.”

In two of the cases, the PoP selection was guided primarily by what the SBTE perceived would serve the PST’s development. In her interview, Paulina said the project “changed the way [the PST] observed, but not necessarily the way I taught.” Yet two cases sought to address genuine gaps in the SBTEs’ practice. For example, Savannah asked PST Beatrice take the lead in identifying the problem: “After the first three times that [Beatrice] observed me, she observed, ‘Hey, you have not taught writing this whole time that I’ve been here.’” Savannah admitted that because writing did not fit in with her state standards, she sometimes overlooked it. Savannah and Beatrice collaboratively developed a creative writing lesson with the aim of introducing writing in an engaging way to boost the students’ writing efficacy, while still following the curriculum.

Like Beatrice, PST Giulia identified her problem by observing what would serve SBTE Tim’s practice. Giulia noticed how often students were on their cell phones during class, which led to a discussion with Tim about technology and AI use in writing. Their approach again illustrated the asset-based orientation that emerged from the PoP design: by observing the problem of cell-phones, Tim and Giulia arrived at strategies for improving student efficacy to increase engagement rather than reactively disciplining students. In his interview, Tim recalled, “She seemed really interested in studying where the students were, and also being able to deliver a lesson that met them on a level that was a little different than just academic.”

Collaborative support. Because the project oriented PSTs/SBTEs around a mutual goal, PSTs operated more as supportive partners with SBTEs than subordinates. Further, participating in this collaborative manner helped to concretely support the SBTEs' students. In her survey, SBTE Savannah wrote, "It is always nice to talk through problems with others and hear their unique perspectives." In his interview, SBTE Tim called Giulia a "second voice in the classroom" and appreciated how Giulia noticed "gaps" in his practice. In her survey, Lin described Melissa as more "like a co-teacher than a mentee." And in her interview, Lin highlighted a moment during the co-taught lesson when the teachers (Lin, Kristien, and Melissa) realized that something about the original plan was not going to work after all:

We huddled up at the back of the classroom [and] chang[ed] the lesson behind the scenes while the kids were working. . . As a teacher, you have to do those pivots all the time, but you rarely get other people in the trenches with you.

The PoP project lessons genuinely contributed to the SBTEs' curricular goals, and SBTEs also noted ways the benefits extended beyond the brief initiative. Giulia's lesson on dialects and writing efficacy helped introduce Tim's study of *A Raisin in the Sun* which, he said, "I've since had several opportunities to refer back to her lesson [with the students]." Inspired by Beatrice's PoP lesson, Savannah said, "I've definitely done a lot more writing [with the class]." After the fall semester, all of the SBTEs continued to serve as mentors in future iterations of PoP and other CPB clinical experiences, indicating it was valuable enough to sustain in their busy professional lives.

Relationship-based mentor selection

In consideration of the second research question, we identified the theme of relationship-based mentor selection as an important mechanism. Our analysis revealed how leveraging pre-existing bonds with alumni enhanced the functionality of the PoP model. In some cases, this prior relationship also allowed the SBTE (Kristien) to intentionally match SBTEs/PSTs based on his knowledge of their teaching styles and needs.

Leveraging alumni connections. All four SBTEs in our cases were alumni of the teacher education program with pre-existing relationships with Kristien Zenkov, the second author of this article and the Methods instructor who designed PoP. Kristien also introduced the project and its expectations before the project commenced, and he served as a co-teacher in two of the four cases. Data revealed that these elements helped promote a more functional clinical experience – and exposed a less beneficial experience when these elements were absent.

PSTs were asked in the post-surveys and interviews to compare their experience with PoP to other clinical experiences in their program. PST Beatrice described how her more traditional clinical experiences felt less valuable: "There was no way for me to participate. But with Savannah [her PoP SBTE], on my first day I'm walking around the room, helping kids." PST Melissa shared a similar experience in her interview, detailing how during her Methods II class the following semester, she had another PoP CPB clinical experience with a randomly assigned SBTE: "That mentor didn't seem to understand how the project was supposed to work." Melissa compared it to her first semester: "[Lin] having that deeper knowledge of the project really helped." In her own interview, Lin said she felt prepared for the project: "Before the class even started, [Kristien] sent us the syllabus, talked us through it; I think without laying any of that groundwork, this project would be really difficult."

The pre-existing relationship with Kristien seemed key to not only the introduction of the project, but also to its implementation. His feedback during the co-planning process – and presence during co-teaching – were cited as helpful by many of the participants. In his interview, SBTE Tim remembered the feedback Kristien had offered Giulia on their co-planned lesson: "Dr Zenkov is a great educational mind. So, you know, we [Giulia and Tim] kind of talked about how those comments would play out in the classroom. . . And I think

that having that structure was really helpful.” SBTE Savannah said in her interview that she enjoyed co-teaching with Kristien and her PST: “It was awesome. The more adults that you can get in a class, the better. . . it was really nice to feel like each kid got individual attention.”

SBTEs were comfortable enacting their own pedagogical decision-making due to this familiarity. Both Melissa and Lin described receiving feedback from Kristien on their lesson – and both remember deciding not to implement many of his suggestions. In her interview, PST Melissa admitted, “I think we ended up not doing Zenkov’s idea, actually.” In her own interview, Lin said, “For Melissa’s benefit, I wanted to go through piece-by-piece all of [Kristien’s] feedback and explain either why we were implementing or why we weren’t.” Lin considered the feedback so closely out of respect for Kristien based on their prior working relationship, and she felt comfortable discarding some of his suggestions for that same reason. She said, “[Kristien] isn’t offended because when he’s asking something, he’s really asking. He’s curious. But Melissa might not know that.” Lin described how the moment made her recognize that part of her role was to operate as a liaison between Melissa and her professor, Kristien: “I had the most movement within that hierarchy.” Lin felt more comfortable serving as that liaison because of her experience with Kristien in a variety of contexts – from preservice teacher, to alumna and practitioner, to collaborator and SBTE.

Intentional matching. Data also revealed how aligned personalities and teaching dispositions were markers of a successful clinical experience in the context of the CPB structure. Paulina and Rus had very similar approaches to the classroom. Paulina described in her interview how she had struggled in school, and after arriving at teaching as a second career, she was motivated to support student well-being. Her PST Rus also had a student-first orientation before entering Paulina’s room, and they described in their interview how that orientation blossomed under Paulina’s mentorship: “I always knew, going into teaching, that I wanted to make my classroom a safe space.” Rus expressed a desire for their teaching to be a positive experience for students, avoiding making students “feel like they don’t belong in the classroom.” In subsequent semesters, Rus requested and Paulina agreed to serve as their mentor for their final teaching internship.

Although dissimilar in their teaching personas, Melissa and Lin were also well matched. In her interview, Melissa described her teaching style as “Type A” and Lin as “Type B,” adding that “seeing her handle her own classroom. . . was pretty beneficial to me.” The PoP Melissa and Lin selected involved fostering academic risk-taking with Lin’s high school seniors. Melissa said it felt as if – in designing and teaching that lesson – she was participating in her own PoP: “I’m a planner, I like to plan everything out and have everything clear, and so doing all that research made me realize I also had to do our own problem of practice. I had to take a risk, and try to step back a second.” She added, “Lin was super, well. . . hands-off isn’t the right word. . . it was more of putting a lot of the responsibility and choices onto me.” In her own survey, Lin noted how Melissa was able to offer important insights around academic anxiety, writing “I personally have never struggled with that type of anxiety. . . [Melissa’s] insights into their behavior, and research on mental health, helped me immensely.”

Difference did not always equate to compatibility, and it was harder to adapt to diverse teaching personas when partnerships were not one-on-one. Paulina was paired with two PSTs, Rus and another SEED student. Both Rus and Paulina struggled with this structure. In her interview, Paulina said, “In an ideal situation, if you can do a one-to-one match rather than a two-to-one match, that’s going to be better.” In her survey she explained that although “both beneficial in their own ways,” the two PSTs she mentored had very different orientations to teaching. In their interview, Rus also admitted that working with another PST “was a challenge” because they had “different expectations” for the project.

Discussion: conceptual metaphors of sustainable SUPs

While the results of our study of the PoP project version of the CPB model suggest clear benefits of and limitations to this alternative clinical experience structure, it is the nature of this pedagogical and partnership architecture – this edition of a PDS – to which we turn here. Based on these findings, what are the elements of “sustainability” that we have seen operationalized and that we might suggest be considered foundational to SUPs/PDSs in the teacher education field, in this era? We propose that it is not only the alternative traits of such partnerships on which we should focus, but also the ideas in which these are grounded. In an effort to effectively challenge existing notions of sustainability and illustrate the concepts the CPB model enacts, we consider the metaphors (Lakoff & Johnson, 1980) in which both these traditional and these alternative ideas are rooted. We look to each of our key findings as the impetus for these conceptual elements, suggesting (as we have argued elsewhere; Zenkov *et al.*, 2024) that the future of clinical and partnership structures might best be guided by deeper understandings of the ideas – the metaphors – upon which these elements have been built.

Mutual growth: symphony

In defining PDSs, Essential 8 calls for the implementation of boundary-spanning practices that center on mutual benefits (NAPDS, 2021). And yet, research on practicable boundary-spanning has revealed how such mutuality can remain elusive (Beck, 2018; Rudder *et al.*, 2026). While traditional notions of PDSs highlight as a key goal the professional learning of all parties, these structures too infrequently name the mechanisms through which such growth can occur, and the development of SBTEs and UBTEs is clearly secondary to that of PSTs. Metaphors for these standard PDS features might be “pecking order” or “veil”: the hierarchy of who is served and whose needs are addressed still exists, but can be shrouded in aspirational language.

In contrast, a metaphor of the reciprocal PDS-like structures we are proposing might be “symphony.” The CPB PoP intentionally places the mentor (the SBTE) and their classroom pedagogical practices in the middle of its exchanges, shifting the notion that the UBTE acts as the primary conductor. Instead, the SBTE is at the center of both the questions asked and the answers employed. Living in the everyday of PK-12 classrooms, their concerns orchestrate the PDS elements and their well-being – and the well-being of their students – become key factors in assessing the harmony of a partnership.

The findings of our study spoke explicitly to the mutual professional growth – for PSTs and SBTEs – that resulted from the CPB PoP structure. SBTEs and PSTs felt as if their roles and their efforts had been professionalized as a result of a collaborative, authentic project. The project co-developed by the partnership served the curricular goals/needs of the secondary students. Further, while not an empirical focus of this article, our UBTE participant (Kristien) acknowledged benefits to his own professional development (outcomes to be explored in future studies of the CPB PoP structure beyond this initial pilot). While each partner plays their distinct parts, boundary-spanning PDSs are sustained by mutual resonance.

Mutual goals: tapestry

Per Essential 7, PDSs are guided by notions of shared governance (NAPDS, 2021). Too often, traditional PDS structures idealize the development of stable structures and top-down administration (Clifford & Millar, 2008; Fynn *et al.*, 2020; Hudson & Harder, 2025), which best promote replicability and scalability – highlighting “machine”- or “automaton”-like features rather than human elements. Such conceptualizations of sustainability prioritize rationalized metrics (Sterrett *et al.*, 2022) while excising decision-making input from school-based partners. We propose that the metaphor for PDSs that engage all partners in the shared identification of goals might be “tapestry.” This analogy suggests a more artisanal, braided structure that builds and develops over time – an interweaving of differing but complementary needs and outcomes, comprising a give-and-take exchange culminating in a final construct.

To generate partnerships that prioritize impact for all constituents, partners need meaningful access to the determination of PDS goals and practices. And yet, such concepts are complicated by the realities of teaching and teacher education: While partners are more invested in PDS work where they can meaningfully shape its outcomes and activities, SBTEs may struggle to shoulder the additional burdens of partnership work in a time of intensification and deprofessionalization (de Saxe *et al.*, 2020; Mkhomi *et al.*, 2025). Thus, sustainable PDSs must be flexible and responsive to partners' needs and capacities without compromising SBTEs' agency.

The solution-oriented design of our project made it feasible for individual SBTE/PST pairs to redesign the model in ways that served their contexts and students to achieve deeper impacts. Further, it provided SBTEs with additional support by flattening the hierarchies and installing genuine collaborators in their classrooms. In the process, participants recognized their own and their various partners' strengths. This orientation suggests that all parties – including the young people whose learning is the focus of instructional interventions – bring expertise to such clinical partnership exchanges. While student engagement was used as a measure for PoP success, future CPB initiatives should consider how PK-12 students might meaningfully participate in goal-setting to strengthen the “critical” element of the clinical experience. Ultimately, weaving a tapestry takes skill and practice, as does governing a PDS. Such a textile represents a PDS where individuals – across roles – are prepared to take on this capacity through access, mentorship and support.

Relationship-based mentor selection: dance

PDSs are guided by articulated agreements which – as specified in Essential 6 – must be *written* (NAPDS, 2021). Articulated norms are best when developed collaboratively – designating articulated agreements from “the top” can decrease engagement from PDS partners (Shekitka & Coakley-Fields, 2025). PDSs should then distinguish between *organizations* and *communities*. Schools are organizations, governed by specific regulations to promote efficiency and accountability. Communities, meanwhile, are more responsive to individual needs, guided by “collective beliefs and moral virtues that guide norms for behavior” (Badiali *et al.*, 2022, p. 52). PDSs operate within the organization of schools while fostering a community orientation reliant on common values and moral agreements (Lentz *et al.*, 2024; NAPDS, 2021). Such agreements may not manifest as written rules or MOUs, particularly for ad hoc partnerships such as ours.

These elements and our findings challenge the top-down and structural orientation of many standard notions of PDS sustainability, which might be described through the metaphors of “pillar” or “cannon.” A traditional PDS aims to develop somewhat rigid sets of elements, assuming that only these can stand the test of time and shifting circumstances. In this standard model, PSTs can sometimes be “loaded” at the university and “fired” into schools, with all parties hoping that they land safely and engage successfully. The findings of the CPB PoP model highlighted a relationship-based clinical experience that prioritized meaningful impact for both PSTs and SBTEs. Leveraging existing relationships also encouraged SBTEs to define the partnership as it best served them and their students.

The guiding metaphor for this alternative concept of sustainability might be “dance.” The CPB PoP project intentionally matched partners and prompted them to responsively shuffle along with or even scurry around one another's needs, interests, and assets – the equivalent of professional courtships. However, many school-based PDS partners are often untrained for these capacities and navigate these responsibilities incidentally (Lampert *et al.*, 2025). Our pilot was no different, and future implementations of such models should consider how even relationship-based PDSs are preparing school-based partners for boundary-spanning roles – teaching them the steps of the dance.

Conclusion

Rather than attempting to replicate PDS or SUP structures that may require resources, time and institutional commitments beyond what is feasible in our contexts, the CPB model offers an

architecture that can adapt to changing circumstances while maintaining fidelity to the core principles of collaborative inquiry and mutual benefit. This approach acknowledges the political and professional pressures that shape contemporary teacher education – including accountability mandates, standardized curricula, high-stakes testing and the erosion of teacher autonomy – while seeking spaces within these constraints for meaningful partnership work. As a result, this article contributes to ongoing conversations about the sustainability of SUPs in several ways.

- (1) We offer a reconceptualization of sustainability as an iterative, responsive process rather than a stable state to be achieved. This shift has implications for how we design, implement and evaluate partnership work, suggesting that adaptability may be an important marker of sustainability beyond traditional indicators like longevity or replicability.
- (2) We provide a detailed examination of how boundary-spanning work can support this iterative approach to sustainability, drawing on data from our own partnership to illustrate both the possibilities and challenges of these collaborations.
- (3) We offer the CPB clinical experience as a nimble PDS model capable of navigating changing contexts while maintaining commitment to core principles of collaborative inquiry and mutual benefits.

Our examination of this partnership is informed by a recognition that the metaphors through which we understand PDS work and its sustainability matter. As secondary teacher educators who have never had access to a “traditional” PDS with all of its attendant structures and supports, we have found that many of the common metaphors for partnership work – often drawn from elementary contexts – do not adequately capture our experiences or the particular affordances and constraints of secondary settings. Throughout this article, we have attended carefully to the language we use to describe our work, recognizing that more apt metaphors might open up new ways of thinking about what sustainability means in SUPs. Further, such analogies not only assist us in conceptualizing our own practices, but they also offer us tools to communicate with the many constituents of teacher education.

As UBTEs, SBTEs and boundary-spanning leaders, we bring multiple perspectives to this examination while also acknowledging the limitations inherent in studying our own practice. We embrace this positionality not as a weakness to be overcome but as a strength that allows us to offer insider perspectives on the daily work of sustaining partnerships – work that is often invisible in research that takes a more distanced stance. We have proposed specific ideas – metaphors – that might both offer conceptual guides for alternative notions of SUP sustainability and serve as inspirational exemplars for novel SUP structures. While creative interpretations of existing and future sustainability analogies, these are intended to be practical rather than precious. In sharing our story, we hope to contribute to honest conversations about what sustainability actually requires in SUPs and what might be possible when we approach this work with both clear-eyed realism about constraints and a steadfast commitment to the collaborative ideals that drew us to partnership work in the first place.

Ethical statement

This study was conducted in accordance with the ethical standards of George Mason University and was approved by the Office of Research Integrity and Assurance (Approval no.: 1517578–2, Date of Approval: 02/03/2023).

Supplementary material

The supplementary material for this article can be found online.

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