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## Exploring Collaborative Professionalism as a Means of Virtually Supporting Rural Teachers

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## Exploring Collaborative Professionalism as a Means of Virtually Supporting Rural Teachers

### Cover Page Footnote

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## **Exploring Collaborative Professionalism as a Means of Virtually Supporting Rural Teachers**

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*Thirty percent of US teachers work in rural schools where geographic isolation and lack of peers can make it difficult for them to engage in collaborative professional relationships with colleagues. Facilitated professional development can be used as a way to build these networks. Using a situative perspective in which teachers are viewed as experts and agents in their own professional learning and by capitalizing on the rapid increase in understanding and use of video conferencing in 2021, the research team developed an open-enrollment, co-designed series of workshops for rural teachers in the intermountain West. The team was interested in how collaborative professionalism (Hargreaves & O'Connor, 2018a) could be built and used to bring these rural teachers together to support each other as they explored their own identified problems of practice. The analysis of the collected qualitative and quantitative data (including videos, reflections, and documents used and created in the sessions) revealed initial trends that supported the development of solidarity and solidity in this group of teachers and facilitators. The authors posit that this perspective could be productive in connecting rural teachers in collaborative professional relationships despite their isolation.*

In the United States, rural public schools account for approximately 20% of students (more than 9.3 million) across the K-12 educational system (Showalter et al., 2019), which represents 30% of all public schools (Education Commission of the States, 2017) and half of all school districts (Lavalley, 2018). Rural schools tend to serve a smaller number of students in sparsely populated communities that are geographically dispersed (Avery, 2013; Mitchem et al., 2006; Rude & Miller, 2018) and often experience less funding (Colson et al., 2021) and fluctuations in student populations due to the communities' economic changes (Avery, 2013). Despite these commonalities across rural schools, each has a distinct culture and landscape, based on location, population, and local histories (Hunt-Barron et al., 2015). Within each of these landscapes, teachers are expected to support students in authentic, equitable learning opportunities. Today, rural teachers, who often teach many—or even all—small classes across multiple subjects (Avery, 2013), are asked to provide this high-quality learning while themselves learning about and aligning to complex teaching reforms such as that accompanying the Next Generation Science Standards (National Research Council, 2012).

A primary way in which in-service teachers receive supports to improve their practice and support their students is through collaboration with other educators in their field. While research demonstrates the benefits of educators being able to collaborate to provide more effective instruction (e.g., Hargreaves & O'Connor, 2018a; Schleifer et al., 2017), rural schools tend to have smaller staff and few teachers that teach the same grade or subject areas, which limits collaboration. Even less attention has been given to rural schools' unique contexts and how these contexts influence teaching and learning (Biddle & Azano, 2016) and professional development (PD) needs (Barrett et al., 2015).

One major affordance that emerges from the literature on rural education is that PD can be a method to address teacher isolation and build a network of collaborators (Hellsten et al., 2011). This form of support can be invaluable for supporting rural teachers in examining and shifting their practice toward more effective instruction. The authors piloted a virtual PD that brought rural teachers from different districts together to address isolation, create a cost-effective collaborative network of peers, address problems of practice, and engage in collegial support networks. The team was interested in examining how this method of support might build

*collaborative professionalism* through the use of PD best practice. The question that guided the research and this article is: How might collaborative professionalism be built over time in online communities composed of rural teachers from discrete districts?

This case study provides background on open-enrollment, online, responsive, monthly PD sessions for rural teachers and initial data trends that suggest productive collaborative professionalism was fostered. The authors posit that this PD approach could provide support for teachers who might not have opportunities to explore problems of practice with others and might be limited in their ability to travel, due to their geographic isolation or circumstance.

### Theoretical Framework

As a professional development and research team, the authors embrace a situative perspective. This recognizes that PD situated in and informed by teacher experiences, individual needs, and school contexts holds promise for making PD more effective and relevant (Shriki & Lavy, 2012; van Veen et al., 2012; Wilson & Berne, 1999). This situative perspective requires recognizing teachers as experts in their practice and agents in their learning. As strong evidence suggests that learning happens best when learners have agency (Bruner, 2003; Coffey et al., 2011; Dewey, 1997; Thompson et al., 2016), it follows that teachers in PD should be treated as experts with agency to take ownership of goals, processes, and overall efforts to bring a reform into their work (e.g., Hoban, 2002). Together, these situative and agentive perspectives shape a co-designed PD structure, which dictates that all PD should be collaboratively designed by both participants/teachers and facilitators. Consensus is forming around the ideas that truly co-designed PD stems from teacher agency in articulating and pursuing their needs, and that this co-design supports action and change in teachers' own situated contexts (e.g., Deschênes & Laferrière, 2019; Severance et al., 2016). These intertwined theoretical frames form the foundation of the online and statewide PD format used in this study.

### What is Collaborative Professionalism?

Collaborative professionalism has emerged as a structure of *evidence-informed dialogue*, rather than restrictive data cycles, that provides space for educators to teach and *learn together*. This is

achieved through *collaborative inquiry* with *honest, constructive feedback* and *collective responsibility* (Hargreaves & O'Connor, 2018a). For effective collaborative professionalism, there must exist both *solidarity*—the need for “a sense of togetherness expressed in mutual support and the feeling that everyone is in the same boat and doing their best”—and *solidity*—the need for “specific designs, protocols, structures, and processes to guide conversations. . . . It needs solid expertise about curriculum, teaching, and learning, too,” that “ground[s] the inquiry process in solid research and knowledge” (Hargreaves & O'Connor, 2018b, p. 21)—among the teachers. It is an interplay between *high trust*, which leads to an atmosphere in which teachers can make mistakes and take risks, and *high precision*, which refers to the presence of some protocols and tools to provide structures for giving feedback, planning, engaging in action, and improving as a collective. In other words, “collaborative professionalism is rooted in *deep relationships* combined with *deliberate design*” (emphasis added; Hargreaves & O'Connor, 2018a, p. 7).

The specific design of how groups engage in collaborative professionalism can vary, so long as the characteristics discussed above are met and/or built. While examples of collaborative professionalism have been identified in a variety of contexts and designs (e.g., lesson study, PLCs, and collaborative planning networks), there is little regarding design that is not district and/or school specific. For many rural educators, science-specific learning communities require collaboration beyond the district level. Further, rural districts that reside in states with high levels of local control may not have the ability to organize at multi-district levels. The present study explored the possibility of building collaborative professionalism in unique, rural-friendly settings across district lines.

### The Online Learning Context

The authors' PD used an online, synchronous, video conferencing platform as this unique rural-friendly setting. The aim of this pilot was to use technology to bridge geographic divides and connect teachers to each other and to university pedagogy experts. Promising results from recent studies (e.g., Durr et al., 2020) show increased teacher efficacy, enjoyment, and value in online PD, which provides some credence to the pilot PD's structure. Inventories of more informal PD approaches, such as

professional learning networks and mentorship networks, highlight the value in leveraging online resource and sharing platforms. These collaboration platforms provide space and opportunity for teachers to identify, act as agents in, and pursue their preferred types of relationships in their own PD (Javier, 2021; Kyndt et al., 2016; Trust, 2012). While the present PD operated on a much smaller scale than these national and global models, it embodied informal PD elements that allowed for the rural participants to still act as agents in their network. Dede and colleagues (2009) conducted a study on online professional learning and warned that non-coherent modules void of discussion and collaboration result in a disconnect when implementing the ideas into practice. In contrast, the currently discussed PD-created a coherent online learning community through synchronous, discussion-based sessions that, as defined by Lock (2006), fostered a sustained, flexible, and purposeful environment to support teacher knowledge.

### **Framing the PD Intervention**

The PD intervention was designed to integrate these situative, agentive, collaborative, and online frames. Three relatively simple components supported this integration: a check-in (community building time) to start each session, time to share and exchange feedback around teacher-identified topics and structures, and time to reflect and look to the next session. Together, these practices embodied the frames in order to foster a multi-district collaborative group that supported varied needs and afforded teachers' agency in identifying and pursuing these needs. Figure 1 details these three components across the PD sessions; the paragraphs below highlight how the components embodied these theoretical frames.

Lasting between 7 and 15 minutes, each session's check-in provided space for teachers to share their current challenges and affect, to forge less formal connections with one another, and to identify, as a group, the supports that would help address their individual and community needs. In this way, teachers took the lead in the situative nature of the PD and became agents in their collective learning from the beginning of each session (Bergmark, 2020). Given that these check-ins required teachers to learn about one another and identify online structures of learning that would best support them all, each session was designed to build the group's solidarity and solidity. Using video conferencing also provided valuable online networking opportunities for teachers to personally connect to the PD and their co-learners.

The structures and topics teachers identified in their check-ins were pursued in each session. Following through on teachers' articulated needs is essential for authentically situative and agentive professional development (Watkins, 2020), and fosters solidarity by building solidity around this agency. Teachers' desired solidity structures shifted over the course of the sessions, and ranged from open sharing, to independent exploration and collective discussion of specific resources, to highly structured opportunities to discuss research and practice around specific instructional strategies. This afforded valuable time for teachers to learn from one another and concretely consider and plan application of these (Darling-Hammond et al., 2017). Facilitators supported this work by suggesting solidity structures that could harness increasingly effective online learning and networking strategies that addressed the teachers' articulated needs. (See Figure 1 for the topics and structures teachers identified and pursued.)

Reflection time at the end of each session served as a bridge between the sessions and a key

<b>January: Co-creating Community</b>			
<b>Getting under way:</b> Introductions; goals; open discussion for desired supports and topics 25 min.	<b>Session structures (synthesizing, responding, and sharing):</b> honing in on structures and goals that will address teacher needs (full group) 55 min.		<b>Closing:</b> journal reflection (independent) 10 min.
<b>February: Analyzing &amp; Interpreting Data (A&amp;ID)</b>			
<b>Getting under way:</b> community building; idea proposal around A&ID 15 min.	<b>Session structures (synthesizing, sharing, &amp; feedback):</b> identifying themes in A&ID ideas ( <i>K-5 and 6-12 groups</i> ); determining sharing/feedback approach; refining/generalizing A&ID examples ( <i>K-5 and 6-12 groups</i> ) 60 min.		<b>Closing:</b> sharing takeaways & identifying next steps 15 min.
<b>Cont'd:</b> journal reflection (ind.) (after)			
<b>March: Assessment Resources</b>			
<b>Getting under way:</b> community building; synthesizing assessment needs ( <i>K-5 and 6-12 groups</i> ); open discussion for emergent themes and session plan 35 min.	<b>Session structures (exploring):</b> reviewing resources to address needs (independent) 30 min.	<b>Closing:</b> sharing takeaways and identifying next steps; journal reflection (independent) 25 min.	
<b>April: Assessment</b>			
<b>Getting under way:</b> community building; ideal proposal; synthesizing needs related to assessment tools and session goals 30 min.	<b>Session structures (sharing and feedback):</b> applying checklist to refine assessment examples 40 min.		<b>Closing:</b> sharing takeaways and identifying next steps; journal reflection (independent) 20 min.
<b>May: 3D Lesson</b>			
<b>Getting under way:</b> community building; idea proposal for desired feedback 15 min.	<b>Session structures (sharing &amp; feedback):</b> 3D lesson examples and feedback from colleagues 60 min.		<b>Closing:</b> journal reflection (independent); sharing gratitude 15 min.

Note. Major session components from the five sessions are illustrated here with associated times spent on each. For consistency and where possible, qualitative code names were included in descriptions.

Figure 1. PD Program Session Components

opportunity for facilitators to gauge individual and collective progress and upcoming needs. Teachers used an online journal to make connections between session conversations, their teaching needs, and next steps. This structured time for teachers to think about their practice supported their ability to act as informed agents of their subsequent application and learning (Darling-Hammond et al., 2017; Hokanson et al., 2019). Using these journal entries enabled facilitators to identify trends in teacher reflections, pursue relevant resources to support teachers' articulated needs, and anticipate strategies to better support agency, situative learning, solidarity, and solidarity in future sessions.

## Methods

### Participants and PD Overview

The study took place with teachers across seven rural school districts in the Intermountain West. The PD program was a voluntary open-enrollment series, in which teachers had to register and had the option of earning Continuing Education Units. A total of nine teachers registered and attended the PD

program. They came from diverse contexts, including districts with student populations ranging from 150 to 13,330 students, teaching roles across K-12, and teaching responsibilities of one to six science courses, often without the support of colleagues teaching the same courses. Demographics of the participants are detailed in Table 1.

Structurally, the PD program spanned five sessions approximately one month apart during the Spring of 2021. Each session was run by two facilitators from a university science teaching center, both of whom had expertise in current research on science teaching, learning, and professional development, as well as extensive experience supporting rural science teachers. Having two facilitators supported the PD program's capacity to responsively foster situative, agentive, online, collaborative professionalism in numerous ways. Most foundationally, this structure enabled one facilitator to support the teachers in the "room" while the other provided technical troubleshooting support for the online platform. This addressed persistent challenges for online learning such as creating community quickly and effectively, helping participants feel comfortable and familiar with online

Table 1  
Participant Demographics

Name	District	Role	Locale*	District size (student population)*	# science courses taught	# colleagues teaching same courses
Sandy	6	7-12th	rural: remote	150	6	0, 0, 0, 0, 0, 0
Dana	7	3-5th	rural: remote	1,120	3	0, 0, 0
Barbara	5	5th	rural: fringe	1,782	1	1
Sophie	4	HS	town: remote	1,821	3	3, 0, 0
Kristen	1	7th	town: remote	4,067	1	1
Beth	1	7th	town: remote	4,067	1	1
Lewis	3	HS	town: remote	6,215	2	3, 2
Ellen	2	HS	city: small	13,330	3	5, 0, 0
Mason	2	HS	city: small	13,330	1	3

Note. \*Data taken from NCES CCD <https://nces.ed.gov/ccd/districtsearch/index.asp>

platforms, and ensuring that technical difficulties do not get in the way of learning. Likewise, when teachers opted to work in grade-level teams on specific problems or ideas, facilitators were able to spread out, monitor, and collaborate with teachers. Having two facilitators provided continuity and flexibility as sustained PD requires consistent evaluation and adjustment, and provided similar professional collaboration supports to the facilitators that they aimed to foster in the participants. With the exception of the first, each session had a focus and structure that was determined by the participating teachers. In this way, teachers co-designed the workshops with facilitators, who largely chat transcriptions were analyzed qualitatively using a priori codes to identify differences in interactions and quantitatively using the times participants spent within each code.

#### Data Analysis

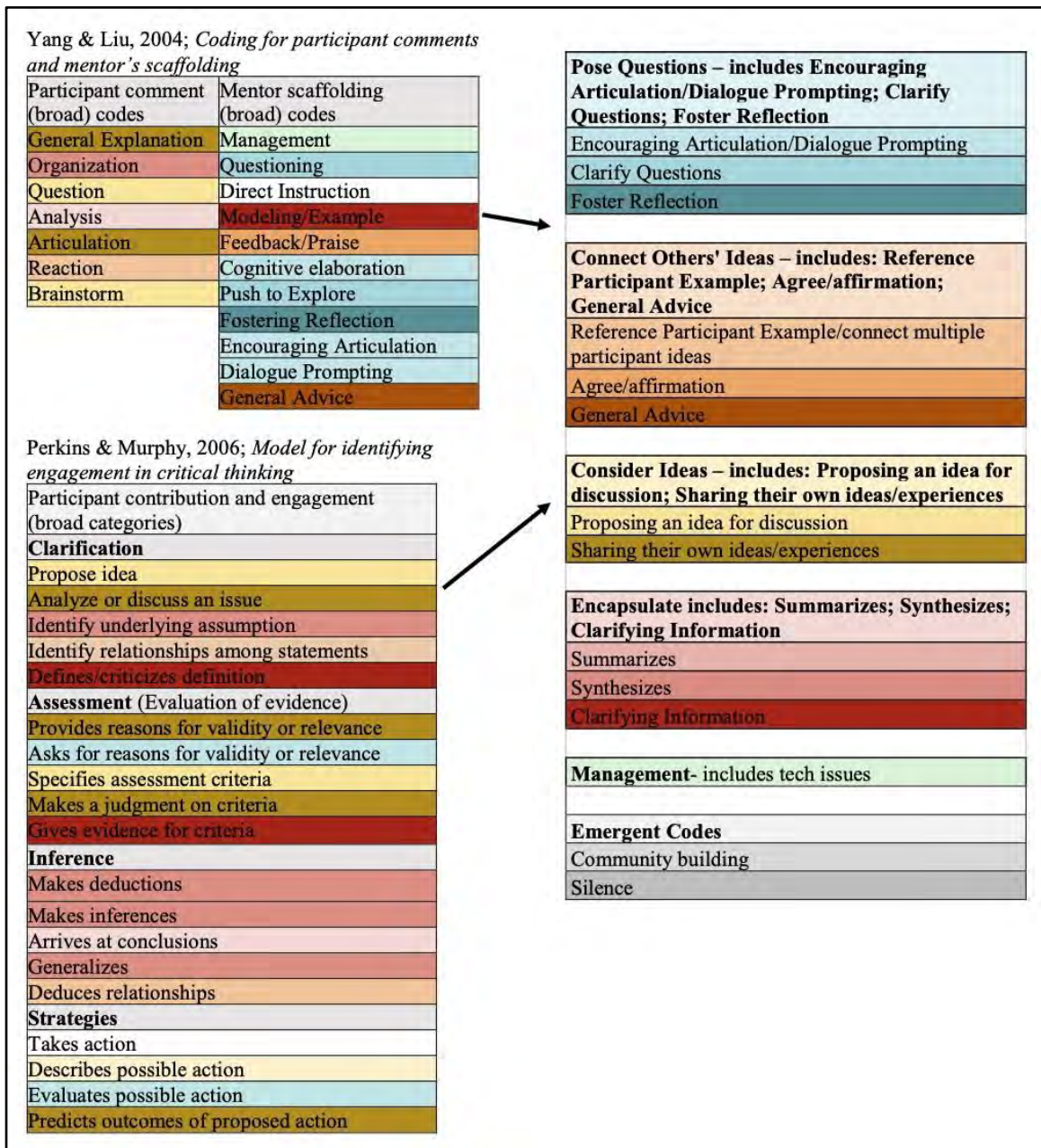
Quantitative and some qualitative data analyses in this research were based on two dialogic coding schemes, Yang and Liu (2004) and Perkins and Murphy (2006), which divided their codes into Participant Comment and Mentor Scaffolding codes and into Clarification, Assessment, Inference, and Strategies, respectively. From these two coding structures, dialogic codes were merged when they aligned with the workshop structure and philosophy. Codes that fell outside of these structures were removed. For example, since the PD was designed to be a community of practice, it did not include any *direct instruction* (Yang & Liu, 2004), thus this was not included in the final coding structure. The PD structures similarly did not include the *specifying assessment criteria* or *making value judgment* codes in the Assessment category within the Perkins and

worked to alleviate structural and coordination burdens in order for participants to be able to spend their time connecting, collaborating, and learning in ways they identified. See Figure 1 for the breakdowns of each session.

#### Data Sources

This study included several data sources. Each session was recorded (in the main and breakout rooms) and transcribed verbatim. Chats were saved and aligned with the recording transcripts. Facilitator and participant reflective journals and related documents (e.g., agendas, shared resources) Murphy (2006) scheme. Likewise, within Strategies, the PD did not engage in any *prediction or evaluation of actions* as evaluating participation was not a focus of this work. Based on the team's situative and collaborative stance, codes were applied equally to facilitator and participant voice, rather than maintaining the separation in Yang and Liu's codes. Figure 2 shows the merging and final dialogic coding structure.

**Qualitative Coding.** Deductive, or *a priori*, analyses were conducted with all five workshop video and chat transcripts, using the merged coding structure (see Figure 2). Video and chat transcripts were coded using this structure, so that these data could be quantified later (see Quantitative Coding section below for further video and chat analysis description). One researcher coded 100% of all transcripts, and two additional researchers provided quality assurance by coding between 10% and 100% of each transcript. The researchers compared their results to establish intercoder agreement, whereby they noted agreement and discussed discrepancies to



Note. The original coding structures appear on the left, with arrows showing their consolidation into the codes used in this article on the right. Colors are mapped according to the big ideas that constituted the merged and refined coding scheme.

Figure 2. Original and Collapsed Dialogic Coding Structure

refine their understanding and reach consensus about codes (Campbell et al., 2013).

Inductive, or emergent, coding was used to analyze all 45 journal entries made by the course participants. Since these reflections did not fit within the facilitation-oriented deductive coding scheme, these codes were not applied to the reflection data. Two researchers used the constant comparative

method (Glaser & Strauss, 1999) to identify themes that emerged from participant reflections, and similarly compared their analyses to establish intercoder agreement (Campbell et al., 2013).

**Quantitative Coding.** Quantitative analysis of the video and chat transcripts was conducted by time (seconds) afforded to each dialogic code (noted in the Qualitative Analysis section above). Using these



data, R statistical software (R Core Team, 2020) was applied to conduct descriptive statistics and repeated measures analyses of variances (ANOVAs) to test the difference between each of the broad codes and all subcodes of the participants, both as a collective and as facilitator and participant groups (Field et al., 2012; Leech et al., 2015). Mixed ANOVA was not used because of the small sample size of the facilitators.

### Findings and Discussion

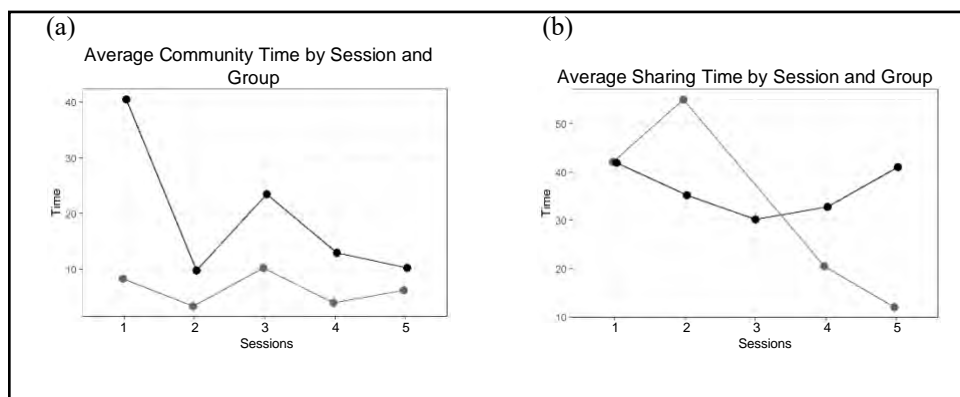
What is the evidence of building collaborative professionalism in online communities of rural teachers from discrete districts? As stated above, effective collaborative professionalism requires both solidity and solidarity. Within these two constructs, there needs to be a *deliberate design* to support the building of togetherness and high trust, the *engagement of solid expertise*, and the productive inclusion of *constructive dialogic structures* driven by *collective responsibility*. Following a general overview of the quantitative data, this study's findings are organized using these characteristics. Results from the ANOVAs, designed to test the differences between the five sessions for each code and sub-code of Facilitators and of Participants, showed no statistically significant differences. However, there appeared to be some emerging trends and variable changes over time for each of the dialogic codes. For example, while average community time saw a spike in the initial meeting, it appears to be fairly consistent across all other sessions for both groups (see Figure 3a). Time also appears constant across sessions for management, posing questions, and summarization. The larger category code that includes posing ideas for

discussion and sharing ideas saw variation over the sessions, spiking during the last measurement period for participants. The time spent on sharing ideas and community time saw consistently higher averages for participants than facilitators. For complete descriptive statistics and line graphs of codes/subcodes over the five sessions, see Appendix A, which can be found online at <https://scholarsjunction.msstate.edu/>.

### Deliberate Design

Evidence of solidity, in terms of using a deliberate design to guide conversation, emerged in multiple places across the data. While specific topic foci varied across sessions, all sessions included check-ins where the group collectively got under way, sharing and feedback opportunities, and independent reflection. Revisit Figure 1 for an overview of each session. Specific protocols were also used to guide the discussions (e.g., specific time increments were used for each teacher to share and then receive feedback; feedback was structured to include positive and critical feedback with suggestions/questions, in that order, and an opportunity to respond/ask follow-up questions). Teachers reported that these structures enabled open and engaging discussions, while also focusing the discussion through a relevant and participant-determined topic lens.

Some of these structural designs supported solidarity (i.e., deep relationships) among the group. As evidenced by Figure 3, which shows the amount of time in each session coded as community and sharing times, the PD design included explicit time to build a culture of trust and open dialogue. Community time (Figure 3a) was most pronounced in



Note. Black lines represent participants and gray lines represent facilitators.

Figure 3: Evidence for Deliberate Design

the beginning but was still present throughout. For instance, this time included giving gratitude to each other and framing that recognized the effort and care everyone was investing in their work. Teachers reported that introductions and time to build community within the group led to more productive and supportive sessions. Dialogue to promote sharing of ideas and feedback on those ideas was present in every session (Figure 3b). Facilitators supported this norm early through modeling and progressively passed it off to the participants, as evidenced by their decreased sharing of experiences over time. Throughout, teachers reported feeling heard, feeling more comfortable with each other, having more confidence in their ideas, and appreciating the ideas others brought. As evidenced by their journal reflections, it validated them, their work, their thinking, and their shared struggles.

### **The Presence of Collective Responsibility**

The sessions were organized in such a way that at the end of each session facilitators asked participants if the previously agreed-upon structures and topics were still relevant and desired for subsequent sessions. In this way, session topics and format were driven by the participants and their collective agreement. Foci were flexible and focused on the content relevant to each teacher's current classroom, using structures of productive comparison, sharing, and/or discussion. One example of a shift that resulted in dialogue and collective responsibility came at the end of the March session. When prompted to consider what was and was not working, teachers decided that co-leading sessions was not a structure they wanted to keep, so the remaining sessions were led by facilitators. The teachers' willingness to voice concerns and come to consensus showed a sense of togetherness (solidarity) and led to a structure (solidity) that supported their voice and agency (solidarity and solidity).

Across the sessions, evidence of collective responsibility in terms of bringing in materials for feedback increased. More teachers brought in examples as sessions progressed, which suggests increased collective responsibility and perhaps increased trust to receive critical feedback on their instruction over time.

### **Solidarity Requires Honest, Constructive Feedback**

True collaborative professionalism cannot be built in a cohort in which only general affirmation

and no honest dialogue through critical feedback is given. While affirmation can foster a sense of togetherness and mutual support, productive growth also requires inquiry into each other's instruction and its efficacy. This study's data suggest a growing presence of affirmations as well as critical feedback between participants. While affirmations were more present across all five sessions, critical feedback increased in the last two sessions. This is especially powerful in the context of these sessions, which included more evaluating of individual lessons teachers implemented. There was enough trust built in the first sessions that participants felt comfortable critiquing others' ideas and receiving other's critiques. For example, in the April session, Beth pushed another to improve her lesson:

“... [W]e know that 3D is good teaching. I know you're creative because we've worked together before. How can you alter some of those questions that you're asking about the egg? How can you bring in the practices we know into this? How could you bring in some modeling opportunities or sense making chances into this?”

Critical feedback was present across several other codes, including clarifying questions (e.g., “I'm wondering of an example for #12, are students given opportunities to actively engage? In traditional assessment, I don't always see choice in engaging, could you explain that for me?”). The structure (solidity) of the sharing time continued to promote specific, positive affirmations (“Love the scavenger hunt idea. Fun way for evaluating data, analyzing, looking for patterns! That's really clever”), as well, so as to maintain the togetherness and trust that was developing in the first sessions. These moments of honest dialogue sparked deeper discussions and resulted in participants reflecting that they appreciated their peers' input and had better ideas for refining their lessons.

### **Shifts Toward More Constructive Dialogue Over Time**

Evidence of solidarity and solidity built over the sessions. One indicator of a growing collaborative professionalism culture is the way in which the topics (or problems of practice) were explored. The initial sessions included an emphasis on less critical dialogue that built the togetherness and trust (solidarity) of the group, in order to have the deep relationships necessary to build toward more critical dialogue that can include more honest, constructive

feedback. The last two sessions focused on teachers presenting examples of their own instruction and getting feedback from peers on what they did well and what could be improved. While there still appeared to be hesitancy in some of these discussions in the last two sessions, there was evidence of teachers giving honest, constructive feedback and of teachers appreciating the presence of that feedback.

### Engagement of Expertise

One component of solidity is that expertise is recognized and promoted within the group. There were instances across all five sessions in which participants requested that facilitators use their *expertise* and *experience* to bring in resources or share the ideas of others around the state. The facilitators also recognized the varying levels of familiarity and expertise among the teachers and used that knowledge to encourage some to articulate their reasoning more and provide constructive feedback to colleagues.

### Conclusion

For decades, researchers have explored tenets of PD that best support teachers in improving their practice and support increased student learning. Through this work, many best practices have been identified. While the PD structure for this study embodied many PD best practices, several that most impacted the trends described above include:

1. facilitators considering the participants' *contexts* (e.g., Thompson-Robinson et al., 2004; Guskey & Yoon, 2009),
2. customizing workshops to *meet participant needs* (e.g., Coffey et al., 2011; Darling-Hammond et al., 2017; Guskey, 2002),
3. *participant voice* being viewed as a resource (e.g., Levin et al., 2009; Maskiewicz & Winters, 2012; Darling-Hammond et al., 2017), and
4. *developing a community* among participants (e.g., Darling-Hammond et al., 2017; Hokanson et al., 2019; Vangrieken et al., 2017).

In the PD program documented in this article, facilitators considered teachers' distinct and similar contexts across their classrooms and districts, which provided solidity when teachers had the space and support to bring in resources, ideas, and questions relevant to them. This consideration further used structures to support group solidarity in sharing resources that supported multiple group members'

contexts. By customizing workshops to meet participant needs, facilitators and teachers boosted solidarity by acknowledging and addressing timely needs, and both solidarity and solidity by collaboratively structuring future meetings to get deeper into addressing the group's cognitive, pedagogical, and affective needs. Soliciting and eliciting participant voice enabled this solidity and solidarity by allowing needs and other ideas to be surfaced, discussed, and acted upon in sessions. This also kept the participants at the center of the goals and structures. Throughout this work, an explicit emphasis on developing a community ensured that the group's solidarity was a clear goal and outcome. Table 2 summarizes the connections between these four PD practices and how they supported solidarity and solidity in the workshop series.

Taken together, these connections demonstrate that structures of solidity helped to build solidarity in the group, and vice versa. Deliberate design allowed participants to dig into ideas that matched their needs (solidity) and to develop community over time. Developing that community allowed for teachers to provide increasingly constructive feedback and to shift toward more constructive dialogue over time (solidarity). These shifts in turn impacted the deliberate design and engendered collective responsibility in the group to acknowledge and seek expertise, to identify and pursue their needs, and to do all of this with the goal of the group growing as a collective (solidarity and solidity). Despite its short duration, this program made clear strides toward building collaborative professionalism for these rural, geographically isolated educators that was rooted in and driven by PD best practices.

The research team views the success of this rural-friendly, teacher-centering, online, collaborative, and network-oriented PD program as replicable and worth replicating. For PD practitioners interested in connecting rural teachers with one another, this study supports a general structure that provides space for teachers to work together and facilitates reflections that are also useful in anticipating and preparing for future needs. This research further demonstrates that PD can be short in duration but should be sustained in regular meetings. This type of work might be successful in a single school or school district, but its power in this present study was in the ways that teachers were able to access thoughts, experiences, and connections with their geographically distant colleagues. Building solidarity and solidity in a PD series with a similar structure should hold these connections at the core,

and any practitioner considering a similar approach might consider the following questions:

1. ***Is an online platform the most appropriate way to connect teachers to one another? Does the online platform provide a meaningful way to provide a situative, agentive, and collaborative space for teachers to network across large geographic regions? Are we providing sufficient supports to help teachers make meaningful connections and navigate the chosen platform?*** Online platforms certainly have

affordances, but they can also pose limitations. The present research and facilitation team found that using two facilitators and limiting the number of platforms used helped to achieve this approach to online PD.

2. ***Is the time chosen convenient for teachers?*** This PD was held on a consistent weekday, shortly after the school day so teachers could join remotely from home or school. This did not work for all teachers, some of whom had family or extracurricular responsibilities,

Table 2  
*Connections Between PD Best Practice and Collaborative Professionalism*

Solidity Structures	Related PD Best Practices	Evidence of Solidity Building Solidarity and Connecting to PD Best Practices
Community time	(4) Develop a community	Explicit community-building time took the form of structured beginning-of-session check-ins, gratitude, and allowing teachers to discuss non-workshop topics (4).
Sharing	(1) Context (3) Participant voice (4) Develop a community	Participant voice was a primary resource (3) as teachers shared their classroom contexts (1) and needs (2). Structures where participants were expected to share and to offer their feedback helped build community (4).
Collective responsibility	(1) Context (2) Meet participant needs (3) Participant voice (4) Develop a community	Sessions were structured to meet the affective, cognitive, and pedagogical needs teachers voiced (2, 3). They progressed to more critical dialogue of teacher ideas as community relationships and trust were built (4). Structures that included people bringing in resources, ideas, and questions relevant to their contexts (1) helped foster a sense of shared responsibility in their community (4). Teachers started taking responsibility for identifying, sharing, and meeting their own and the group's needs (2, 3).
Increasing dialogic expectations	(1) Context (2) Meet participant needs (3) Participant voice (4) Develop a community	Solidarity requires mutual support as well as honest critical dialogue. PD structures emphasized building togetherness and trust in initial sessions by eliciting needs, validating teacher voice, and acknowledging participants' contexts (1, 2, 3). While these supports continued in later sessions, the addition of structures to include more critical feedback about participant ideas was expected and enabled by community building structures (4).
Expertise	(2) Meet participant needs (3) Participant voice	Flexibility to meet participant requests (3) for facilitator expertise is an example of customizing to meet participant cognitive and pedagogical needs (2)
Affirmation and critical feedback	(4) Develop a community (2) Meet participant needs	Solidarity requires honest, constructive feedback, which requires care and trust. Affirmations, a demonstration of care and investment in community (4), were modeled and encouraged in all sessions. Later sessions included more critical feedback, suggesting the community built enough trust to engage in harder conversations (4) that could help colleagues meet their articulated needs (2) by receiving valuable feedback.

however, this was the most equitable approach for cross-district connection. The facilitation team surveyed interested teachers to best schedule the PD, and intends to do the same with each following cohort.

3. ***How comfortable are facilitators with being highly responsive to teacher needs?*** This co-design process is fundamentally intended to create space for situative supports where teachers are agents in their own collaborative professionalism and learning. This means that facilitators must consciously approach PD sessions with the intention to elicit, attend to, and respond to teachers' articulated needs. This research suggests that including space for check-ins, collaborative time, and reflection enables teachers and facilitators to effectively co-design sessions that might look differently in order to meet teacher needs. Consistent reflection and feedback opportunities for teachers and facilitators enables them to meaningfully engage in co-design.

### Limitations & Recommendations

Some necessary structures limited this research. Due to a small sample size and the possibility of this sample being non-representative (e.g., teachers who enroll in optional PD might have more motivation, more buy-in to the PD, fewer outside-of-school obligations, etc.), we hesitate to make claims about the immediate generalizability of these findings. The co-creation approach also contributed to this uncertainty; it meant that each session was different to meet changing and timely participant needs, which in turn made it more difficult to document and make

claims regarding trends we noted. On the other hand, these examples had programmatic advantages. Several participants expressed appreciation that the group was small, enabling them to hear ideas from and build community with everyone. Others appreciated that monthly sessions were manageable in terms of their available time. The video conferencing platform similarly posed interesting limitations and affordances; it enabled participation and community building across a large geographic area, but it also led to instances of internet connectivity issues.

Despite these limitations, this small, initial study provided evidence that structures and interactions among rural teachers in the online PD program did support collaborative professionalism. Since research limitations were often paired with program strengths, these points merit particular focus for future research. Additionally, continuing this research longitudinally could afford opportunities to make comparisons across larger sample sizes. Several other research paths also emerged, such as exploring how varying expertise can be uncovered, honored, and shared over short time periods, and refining our understanding of which structures and interactions provide the highest leverage in building collaborative professionalism. The present research and facilitation team is continuing their work with this structure and aims to continue similar study of building collaborative professionalism, expanding to capture experiences across cohorts. The team sincerely hopes that others inspired by a similar approach to PD will explore how collaborative professionalism is built and impacts teachers, so as to better understand and afford our rural teachers with high-quality, research-backed, and accessible PD opportunities.

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