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Penny Bishop

John Matthew Downes

Steven Netcoh

Katy Farber

Jessica DeMink-Carthew

*See next page for additional authors*

## Authors

Penny Bishop, John Matthew Downes, Steven Netcoh, Katy Farber, Jessica DeMink-Carthew, Tricia Brown, and Rachel Mark

# TEACHER ROLES IN PERSONALIZED LEARNING ENVIRONMENTS

**ABSTRACT**

As school districts, major cities, and entire states in the United States adopt personalized learning as a reform strategy focused on the co-construction of learning opportunities between teachers and students, educators face shifting roles. This study examined the roles of teachers in personalized learning environments within a policy context of statewide legislation of personalized learning plans, flexible educational pathways, and proficiency-based assessment. The study used data from interviews with a purposefully selected group of 20 elementary and middle school teachers from 11 schools. Findings revealed teachers' perceptions of their roles as (*a*) empowerers, (*b*) scouts, (*c*) scaffolders, and (*d*) assessors, as well as associated strategies within each role that participants perceived to be constructive. The use of role theory illuminated the potential for intrarole conflict and role strain between and among these roles along with the cultural dimensions of the shift to personalized learning.

Penny A. Bishop
John M. Downes
Steven Netcoh
Katy Farber
Jessica DeMink-Carthew
Tricia Brown
Rachel Mark
UNIVERSITY OF VERMONT

"**PERSONALIZED** learning" has garnered considerable attention in recent years as a growing number of states, districts, and schools have sought comprehensive responses to students' diverse learning needs (Levin et al., 2014; Netcoh, 2017). On a national scale, the US Department of Education stimulated interest in personalization with its Race to the Top-District competition, which awarded more than $500 million in grant funding to support school districts' transitions to personalized learning environments (PLEs) (Sykes et al.,

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2014). With passage in 2015 of the Every Student Succeeds Act (ESSA), state interest in personalized learning expanded. According to one analysis, 39 states referenced personalized learning in ESSA plans (KnowledgeWorks, 2018). Personalization also has made its way into state policy with Vermont's Flexible Pathways Initiative (2013); Rhode Island's RI Personalized Learning Initiative (2017); and Massachusetts's Personalized Learning Network (French & Lebeaux, 2017). Philanthropies such as the Bill & Melinda Gates Foundation and Chan Zuckerberg Initiative have also adopted the term "personalized learning" to describe reforms they have bolstered with millions of dollars of funding (Herold, 2016; Pane et al., 2015).

With this growing attention, personalized learning has become a subject of debate in many communities, often compounded by disagreements about its definition. Some scholars and educators assert that personalized learning represents an effort to replace teachers with computers and further privatize classroom learning (Boninger et al., 2019). In some instances, families have protested the implementation of personalized learning and pressured their schools to abandon computer-intensive approaches (National Education Policy Center, 2018). Most recently, *The New York Times* reported on the backlash to Summit Learning's version of personalization in Kansas, where students and parents raised issues with the amount of time learners spent in front of computers and lamented their limited access to teachers (Bowles, 2019).

An alternative conception of personalized learning, relevant to this study, invokes a number of assessment and instructional principles and practices, generally emphasizing a shift from teacher direction to student direction of the learning process and expanding learning opportunities to incorporate flexible pathways to graduation, including real-world, out-of-school learning (Bray & McClaskey, 2015; Clarke, 2013). Although varying widely in scope and stages of implementation, many states across the United States have adopted policies aligned with this conception of personalized learning (Gross et al., 2018). In the case of Vermont, the location of this study, the Vermont Agency of Education (2016, p. 5) asserted that personalized learning involves "plac[ing] students at the center of the construction and implementation of their own learning experience" and that the role of educators is to work with students to design opportunities that "acknowledge individual goals, learning styles, and abilities."

Although this vision of personalized learning is built on teachers partnering with students to design responsive learning opportunities, little empirical research exists to demonstrate how these applications of personalized learning play out in practice. A series of studies commissioned by the Bill & Melinda Gates Foundation (Pane et al., 2015, 2017a; RAND Corporation, 2014) found that students in PLEs demonstrated greater gains in reading and math than a matched comparison group. However, the researchers noted that there was "considerable diversity in the details of the schools' instructional models" and that the schools in the study did not adopt "a single standardized model of personalized learning" (Pane et al., 2015, p. 3). Indeed, follow-up research that focused on implementation found that "it was rare for students to choose their own instructional materials or the topic of the class focus," indicating relatively little co-construction happened among teachers and students in these schools (Pane et al., 2017b, p. 13). Zeiser et al. (2014) found on average positive effects on interpersonal and intrapersonal outcomes, cognitive and complex problem-solving measures, and postsecondary participation rates among students who attended a network of high schools emphasizing personalized practices, yet they found wide variation in outcomes across individual pairs of schools. Similarly, a study in which personalized practices

were found to have a negative or ambiguous impact on student test scores left unexamined the degree of implementation of specific practices and struggled to reconcile the personalized assessment principles under study with the design of established standardized assessments (Zimmerman & Kuhlmann, 2019). In short, studies to date on the impact of personalized practices on student outcomes acknowledge a number of common yet significant shortcomings: There remains considerable variation in the definitions of personalized learning, prevalent measures of student outcomes are frequently poorly aligned with the desired outcomes of personalized learning, significant variation in implementation across study sites undermines confidence in findings, and much remains to be learned about the implementation at the classroom and school levels to increase the fidelity of taking these programs to scale. This last problem is particularly important for the study presented here.

Given the continued ambiguity and debate surrounding personalized learning, the purpose of this study was to investigate the instructional roles and strategies of elementary and middle school educators teaching in PLEs that emphasize co-construction between teachers and students. We define personalized learning as an approach that encourages partnership between individual students and teachers in the design of learning that emerges from students' interests, questions, needs, and preferences to foster self-directed learning (Bray & McClaskey, 2014). These learning opportunities respond to the wide variance of students' identities and needs (e.g., cultural, cognitive, physical, social, emotional, and moral) and often prioritize the development of twenty-first-century skills such as citizenship, problem solving, quantitative reasoning, and oral and written communication (e.g., World Economic Forum, 2016). Relatedly, assessment takes many different forms within a PLE, such as portfolios of student work, authentic performance tasks, and exhibitions of learning that make space for demonstrating proficiency in these skills (Bray & McClaskey, 2014). According to this definition, personalized learning happens both within and beyond the school walls and school day, as proficiency-based assessment affords opportunities for students to develop and demonstrate proficiency through community-based learning experiences (Clarke, 2013). Implementation of this multifaceted approach to personalized learning, particularly for teachers responding to state and school system mandates to do so, entails teachers making significant and simultaneous changes to core instructional, assessment, and management strategies in conjunction with potentially dramatic shifts in control and responsibility from teachers to students.

In this article, we introduce role theory as a framework for studying teachers' experience with the implementation of PLEs and then outline our research design and methods. Next, by grouping the educator-identified strategies into broader roles, we illustrate how teachers navigated promoting students' self-direction while supporting their capacities to lead their own learning. We then consider how role theory contributes to our understanding of teachers' potential role conflict in PLEs. Finally, we explore the implications of these findings for personalized learning implementation, teacher preparation, and future research.

## A Framework for Examining Teacher Roles in PLEs

Central to understanding the role of teachers in PLEs is first understanding the wide array of practices and dispositions that characterize teaching in PLEs. These

practices and dispositions help to shape a conceptualization of teacher roles in PLEs. Below we review nationally recognized teacher competencies for personalized teaching. We then provide a brief discussion of role theory (Merton, 1957b) and traditional teacher roles. We introduce what is currently known about teacher roles in PLEs and connect it to the proposed educator competencies for personalized and learner-centered teaching that explicate the theorized roles and responsibilities of teachers in PLEs.

## Educator Competencies for Personalized Learner-Centered Teaching

A number of organizations have articulated teaching practices and dispositions aligned with the demands of PLEs. Drawing on standards for teacher quality, including the Danielson Group's Framework for Teaching, the Teacher Standards produced by the Interstate Teacher Assessment and Support Consortium (InTASC), as well as the Blended Learning Teacher Competency Framework, offered by the International Association for K–12 Online Learning (iNACOL), and the Educator Competencies for Personalized, Learner-Centered Teaching (the Competencies; Jobs for the Future & the Council of Chief State School Officers [JFF & CCSSO], 2015) outline the knowledge, skills, and attributes across several domains that are deemed important for educators in PLEs. The Competencies' instructional domain proposes a set of "pedagogical techniques that educators use to sustain the personalized environment" (JFF & CCSSO, 2015, p. 7). These include engaging "learners and other faculty in co-designing projects that stretch and deepen the learning experience" (JFF & CCSSO, 2015, p. 18) and promoting "student agency and ownership with regard to learning," such as "providing opportunities for students to contribute to classroom or school-based decision-making processes, including participatory action research, place-based education, restorative circles, and class meetings" (JFF & CCSSO, 2015, p. 17). The Competencies' interpersonal domain is similarly relevant as it identifies the "social, personal, and leadership skills educators need to relate with students, colleagues, and the greater community" (JFF & CCSSO, 2015, p. 7), including the teacher's ability to create learning spaces that "build students' ability to engage in self-directed learning and emphasize opportunities for student voice and choice, such as their ability to co-design their own learning paths, self-assess and reflect, and provide constructive peer feedback" (JFF & CCSSO, 2015, p. 13).

These emphases on self-direction, co-construction of learning opportunities, and collaboration with community members on out-of-school learning present teachers with challenges that extend beyond the uptake of discrete practices. Shifts in teacher practices take place within a complex social and institutional milieu, one that may vary significantly from school to school, and may reflect long-held norms and expectations of traditional rather than PLEs. Role theory provides a framework for examining how teachers perceive and adapt their practices within a broader set of perceived expectations and responsibilities.

## Role Theory

Defined as a specific social position, a role is comprised of a set of expectations, norms, and behaviors that a person fulfills (Banton, 1996). With roots in both sociology

and social psychology, role theory posits that people behave in ascribed ways based on socially defined categories (Biddle, 1986; Merton, 1957b). The theory is based on the observation that people behave in predictable ways, that those behaviors are context specific, and that behavior is driven by norms, as well as the internal and external expectations for the role. When individuals consider a role to be valid, appropriate, and productive, they are more likely to carry out that role with fidelity and even to incur costs to conform to the role norms. When conditions change and render a role outdated or invalid, social pressures typically lead to role changes. When a person assumes two or more roles that possess important differences in expectations, role conflict may emerge. Role confusion can ensue when individuals have difficulty determining which role to assume. Similarly, when individuals face incompatible expectations, behavior, or obligations associated with a single social role, role strain may result. Role strain can also result when individuals do not concur with others' assessments of their performance or when they assume roles beyond their capacity (Biddle & Thomas, 1966; Merton, 1957a; Turner, 2001).

## Traditional Teacher Roles

Lortie's (1975, p. 24) seminal study of the teaching profession illuminated how "the ways of teachers are deeply rooted in traditional patterns of thought and practice." Although reforms have led to changes in some contexts and individual classrooms, the expectations, norms, and behaviors that teachers fulfill have remained quite consistent over time (Cuban, 1993, 2007). Historically, teaching has been characterized by authority and control. In describing the relatively stable role of teachers over time, Cuban (1993, p. 17) asserted, "The teacher is expected to maintain control, teach certain subject matter, motivate students to learn, vary levels of instruction according to student differences, and display evidence that students have performed satisfactorily." In most classrooms, teachers are responsible for setting learning objectives, planning activities that help students meet these objectives, monitoring student progress, and managing group interactions, among other tasks (Pedersen & Liu, 2003).

These behaviors, norms, and expectations of teachers are shaped by many factors, including cultural beliefs and educational policy. At the root of most educational decision making is a cultural belief about the nature of learning that assumes teachers are authorities who "pass on required knowledge to students" (Cuban, 1993, p. 15). This belief, in turn, shapes educational policies such as "value-added methods" of teacher evaluation, which reward and punish teachers based on their contributions to students' learning as measured by standardized tests (Darling-Hammond, 2015). These cultural beliefs and policies position teachers as authorities who are expected to exert control over students to fulfill their roles. This role is reproduced over time as future teachers' beliefs about the behaviors, expectations, and norms of the profession are shaped by their own experiences and observations in classrooms as students (Cuban, 1993, 2007; Lortie, 1975).

## Teacher Roles in PLEs

In contrast to this more authoritarian view of the teacher role, teachers in PLEs often find themselves adopting new roles and related strategies because personalized

learning changes some fundamental conditions of the learning context (Bray & McClaskey, 2015; Clarke, 2013). Whereas in traditional classroom settings the teacher primarily determines learning objectives, teachers in PLEs base the learning objectives on the questions, interests, and aspirations of individual students. Therefore, teachers in PLEs are expected to serve as facilitators of "inquiry, problem solving, and creative expression" by transferring "control over learning toward the students themselves" (DiMartino & Clarke, 2008, p. 74). Similarly, rather than preparing resources based on teacher-identified learning goals, teachers may become curators in PLEs, helping students access appropriate resources that are suited to their unique projects (Keefe & Jenkins, 2005). Finally, because personalized learning focuses on tailoring instruction to individual students rather than an entire class, teachers in PLEs may find themselves acting as coaches to individual or small groups on project tasks, goals, and standards, as they forgo whole group instruction (Bray & McClaskey, 2015; Clarke, 2013; DiMartino & Clarke, 2008).

Because this study's definition of personalized learning is rooted in students directing their own learning, literature on student-directed learning (SDL) skills is also helpful. Many scholars have identified teacher roles that support SDL skills, primarily in the context of adult education. In a synthesis of the empirical and theoretical literature on SDL, Francom (2010, p. 33) identified four principles to be used within formal teaching and learning situations: "(1) match the level of self-directed learning required in learning activities to student readiness, (2) progress from teacher to student direction of learning over time, (3) support the acquisition of subject matter knowledge and self-directed learning skills together, and (4) have students practice self-directed learning in the context of learning tasks."

Similarly, Hiemstra (2011, pp. 51–52) asserted that teachers have six instructional roles in SDL, including "content resource, resource locator, interest stimulator, positive attitude generator, creativity and critical thinking stimulator, and evaluation stimulator." Despite the relative abundance of anecdotal evidence from the adult education literature and although the examination of teachers' perceptions of their role is not itself new (e.g., Gehrke, 1982; Gerald, 2014), little empirical work addresses teacher roles in PLEs specifically.

## Study Design

This study investigated three research questions: (1) How do teachers of elementary and middle grades perceive their roles in PLEs? (2) What strategies do teachers of elementary and middle grades identify as central in PLEs? (3) What potential conflicts exist between and among roles? To examine these questions, we employed "pragmatic research," which "draws upon the most sensible and practical methods available in order to answer a given research question" (Savin-Baden & Major, 2013, p. 171). Because our research was concerned with teacher perceptions of personalized learning, interviewing teachers who were regularly involved in the enactment of personalization guided our participant selection and subsequent data collection.

### Site Selection

As one of the first states to pass legislation mandating personalized learning plans, access to flexible educational pathways, and proficiency-based graduation requirements

(Bishop et al., 2017), Vermont offered a rich policy context for the study of teacher roles within PLEs. We purposively selected 11 Vermont schools implementing intensive, school-wide personalization initiatives, as they represented illustrative cases that allowed us "to understand a specific issue" (Creswell, 2013, p. 98). The schools included a variety of grade configurations (e.g., K–6, K–8, 5–8) and were located in a range of rural, suburban, and small city communities. The schools served predominantly White student populations that were socioeconomically diverse, with 15%–60% of students qualifying for free or reduced-price lunch. English-language learner rates across the schools varied from 3% to 25% and special education rates ranged from 15% to 35%.

## Participant Selection

Across these 11 schools, we invited professional development coordinators who were familiar with teachers' practices to nominate educators to participate in this research. To meet our selection criteria, a teacher needed to be implementing substantial PLE initiatives, which were defined as partnering with students in the design of learning, and basing learning opportunities on students' individual interests, questions, and preferences. All 20 teachers who were nominated agreed to participate. The participant group was comprised of 14 female and 6 male teachers, whose teaching experience ranged from 4 to 20 years. Because this group was predominantly but not exclusively White, we did not include race or ethnicity within the disclosed demographic data to protect confidentiality. The teachers were situated in a range of teaching and teaming configurations, including self-contained classrooms; interdisciplinary teams; single-grade, multi-age, and looping structures; and various combinations of grades 3 through 9. These educators taught a variety of subject areas, including math, science, humanities, sustainability, literacy, and art (see App. A). Approaches to personalized learning also varied across participants. Some created PLEs within the context of their classrooms; others used team-wide strategies; and still others were involved in advancing school-wide personalized learning initiatives. The PLEs offered a variety of approaches, including negotiated curriculum, genius hour, personal interest projects, service learning, and project-based learning. In all cases, access to technology was considerable with a majority of classrooms operating with one tablet or laptop per student.

## Data Collection

Our research team used a common semistructured protocol to interview all 20 teachers individually to explore their conceptions of personalized learning and associated roles (see App. B). Questions invited teachers to reflect on the nature of their roles when teaching in PLEs. Because the approaches to personalization varied, some teachers reflected on their own classroom practices whereas others reflected on school-wide personalization initiatives. Common to all, however, participants grounded their responses in times when their teaching met this study's basic definition of personalized learning. Ten of the interviews were conducted in a private space at the teacher's school, typically within the teacher's classroom. The other 10 interviews were held in a private office on the college campus of a weeklong summer institute that teachers

attended. Interviews ranged from approximately 30–90 minutes and were audio-recorded and transcribed in full.

## Data Analysis

Using Dedoose (2017), an online research platform, we applied inductive, open coding to all interview transcripts, aiming to identify teachers' roles and related strategies in PLEs. A minimum of two researchers coded each transcript during the initial phase of coding, asking of the data, "What is going on here?" (Glesne, 2016). Segments of data were classified with a short term or "code" in response to that question, and those codes were used to comprehend the situation under study (Charmaz, 2006). Following first-round coding, we applied a form of interpretive convergence, by way of merging data, group discussion, and consensus, to increase the trustworthiness of our findings (Harry et al., 2005). We compared and modified the codes based on this process. For example, in some cases we combined codes that described finer-grained strategies that were closely related. In others, we broke apart codes that indicated multiple strategies. Next we conducted a second round of coding to apply and refine the codes, eliminating any preliminary groupings that lacked evidence from a sufficient diversity of participants (Charmaz, 2006). One researcher then conducted third-round coding and subsequent analysis. This included eliminating codes that conveyed characteristics of respondents that were common to many but not necessarily pertinent to how they enacted personalized learning in their settings. From these third-round codes, we identified strategies and articulated four broad-based roles that the coded strategies comprised.

To assess the coherence of the coding schema and the roles framework, we conducted a research consultation with eight qualitative researchers and professional development providers, all of whom were familiar with the aims of personalized learning. At this consultation, we presented four preliminary roles, along with associated strategies and representative excerpts from transcripts. This consultation revealed considerable conceptual overlap between two roles and, therefore, we eliminated one of the four proposed roles and identified another. We recoded the 60 excerpts associated with that role, identified 3 new codes, and tightened the framework overall as a result.

As we analyzed the four roles in relation to one another, we noted the presence of role conflict between some of the roles. External reviewer feedback encouraged us to conduct a fourth round of coding to determine the extent to which participants' responses conveyed a sense of role conflict. As a result, we added a third research question to the study and returned to the interview transcripts with role conflict as an a priori code (Glesne, 2016), resulting in the second set of findings reported within this article.

## Limitations

Like most research, this study has several limitations. First, because the exploratory nature of the research question was an appropriate match for qualitative methods, the findings cannot be generalized to other settings or actors. Further, given the study's location in a predominantly White state, the sample lacked racial and ethnic diversity, raising questions about how greater diversity might have influenced the findings.

Finally, unlike a scripted intervention, personalized learning is defined and enacted differently across different contexts. Despite our defining terms before and during the interviews, participants still may have reflected on circumstances that did not align with our definitions.

## Findings

As they reflected on their roles in PLEs, many teachers in this study distinguished between their earlier teaching roles and those they now assume in their PLEs. Natalie (all names are pseudonyms), for example, explained: "[When] differentiation was the big buzzword, it was typically trying to get everyone to arrive at the same spot through different means. And the teacher would design all the different assignments or projects or problems so that . . . students would be able to work in their strengths in order to achieve the goal. But I think of [personalized learning] as learner differentiation so that the students are bringing their interests, their readiness, their needs and showing me their path really. And then my job is to support them along those lines."

As Natalie and the other research participants described their work before and after introducing personalized learning, they identified strategies that our research team grouped into four distinct but related roles: empowerer, scaffolder, scout, and assessor (see Fig. 1).

### Empowerer

As teachers pursued personalization, they sought to empower students by increasing student independence and ownership of their learning. Leisl stated, "I have a student teacher this semester and I love when I say to her, 'Look, they don't need us!

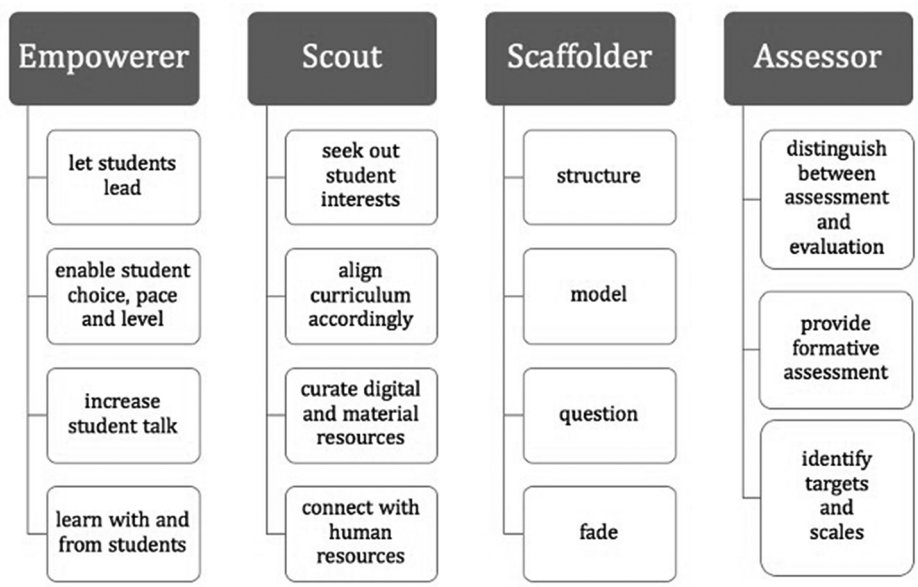


Figure 1. Teacher roles in personalized learning environments. Color version available as an online enhancement.

They just don't need us.'" For these teachers, much of the purpose of personalization was to promote student self-direction. Teachers described several strategies they used regularly to empower students in this manner: letting students lead, offering student choice, enabling students to work at their own pace and level, increasing student talk, and learning with and from students.

**Let students lead.** Empowering students required that teachers allow and, in fact, encourage students to lead. Natalie described, "I think of it kind of as a dance where the student is leading and I'm following. I'm trying to go along their path." Natalie expressed concerns about the more traditional school system, stating, "I don't think we do a very good job teaching for that through school. Finding your own way and your own purpose." Jason explained, "I think [personalized learning] completely changes the way you teach because you're giving more of the power and more of the control to the students." And Maria described being intentional about teaching students to find their own way. She at times adopted a hands-off approach to manage her tendency to control the learning environment, offering, "I typically will walk around, but I usually let them take the lead to come up and talk to me. I feel like if I do too much checking in, I start to manage more." Although letting students lead was important to these teachers, it did not mean allowing students to choose their paths randomly. Many teachers described approaching student choice with great deliberation.

**Offer student choice.** Student choice is a well-recognized attribute of personalization efforts (Netcoh, 2017), and this study proved no exception. Part of empowering students meant creating options in a variety of ways. Paul described his approach to offering choice within a broader curricular framework, "Here's the tent that we're all under right now, and there's a lot of space to explore here. You're going to choose an area in this tent to become an expert on." Teachers acknowledged that creating the conditions for authentic student choice could be challenging at times. Paul identified the tension involved in empowering students to make their own decisions: "When you ask a kid to make choices and you would have a different choice, you have to let them do that. You have to let them be who they are." Stacey also felt this challenge acutely. She explained trying to ensure that students could "have a lot of choice within the day where they felt comfortable and where they wanted to explore, and then to challenge them to add to and improve and expand on what we already do." Part of these teachers' approaches to student choice was enabling the learners in their classrooms to select the pace and level at which they worked.

**Enable students to work at their own pace and level.** Many teachers emphasized the importance of students working at their own level or pace as a strategy for empowering learners. Although most teachers had experience employing individualization or differentiation strategies in their classrooms, they were quick to contrast these with the PLE. For example, Travis explained the difference between differentiation and personalization in this way: "Differentiation in my classroom used to be just 'Okay, you can work on these math problems. You work on these math problems. You work on these math problems. But at the end of today's lesson, we're moving on to tomorrow's lesson.' Now, personalization can be self-paced and . . . kids should be working in their challenge zone. Personalization allows all kids to do that instead of this bigger range of grouping kids."

The way Travis compared the flow of his math class before and after his adoption of personalized learning strategies illuminated how he empowered students to

work at their own pace. He contrasted, "Two years ago, we'd all start with the same introductory activity. . . . Now there's a chunk of my class period where kids are working on totally different things at their own pace." Crystal described how she felt personalized level and pace could inform students' sense of self-as-learner. She explained, "It's giving them the power to, one, learn at their own pace so they don't feel like they're in a race; two, feel empowered to learn about themselves as math learners; and three, feel like they're making progress." Under these conditions, Crystal added, students learn "in the way that works best for them, and learn what that is so they can advocate for themselves. . . . And that way, they're not constantly feeling like, 'Oh, I'm falling behind. There must be something wrong with me.'" Relying on examples from their own varied contexts, each of these teachers described enabling students to work at a pace and level suitable for them. As they sought to further empower students, many also described yielding to greater student talk in the classroom.

**Increase student talk.** Teachers in this study called attention to the prevalence of student talk as an indicator of student empowerment. Leisl explained succinctly, "The person doing the talking is the person doing the learning." She reiterated what she often tells her students: "If you could teach somebody else how to do it, you're learning it. So I need you to always be talking to somebody else." Jason's approach to shifting talk from teacher to student was also a conscious act. He explained, "I wanted my voice to be . . . less than 40% of the class. It was just one of those things that I decided I wanted to work on." Vanessa acknowledged her attempts to empower students more in the classroom, reflecting, "One of the goals that I have, that I'm still working on, is the amount of time that it's my voice versus their voice, not that I'm necessarily lecturing but because I get really excited." The teachers in this study felt that empowering students required enabling students to discuss, confer, and debate in ways that might not have occurred previously, when their own teacher voices may have tempered or overridden much of the student dialogue.

**Learn with and from students.** Finally, as they empowered learners, these teachers learned alongside students. Often this emerged as a response to the wide range of topics students chose to study. Many of the teachers were content specialists who now found themselves acting as generalists. Keb pointed out, "As a generalist rarely do I have the luxury of being an expert on whatever I need to be facilitating or instructing on." He elaborated on the importance of "making very clear that I'm not the expert" and described asking students to Google or conduct fact checks because he was "not afraid to not be the content expert." Margot appreciated "knowing that you don't have to be the person with all the answers, with all the structure, with all the ideas, that we're all in it together. You and the kids, it's one classroom."

In addition to learning with students, teachers learned from them. They positioned students as educators in the room. Jim explained, "When the students are presenting and sharing their learning, they're the expert in the room, so there's definitely a shift in the student-teacher dynamic." Vanessa provided an example, declaring, "I'm not an expert on snowmobiles. I've never ridden one in my life! If that was what they wanted to focus on for their procedural paper, [it's] offering those opportunities to teach me and others." Teachers also encouraged students to learn from one another. As Melanie explained, "It's like they're seeing each other as mini-experts on what they're doing, and then they can ask the other one for help." Victoria felt that setting up this role shift, to establish students as teachers, required great deliberation: "I'm

going to be a lot more intentional in the beginning of the year, that we're all teachers in this classroom and we're all learners in this classroom, even me. I'm going to learn just as much from you as you're going to learn from me. . . . These skills, they don't just need to get them from me. They can get them from each other, too."

In sum, the teachers in this study described empowering students by letting them lead their own learning, offering a range of choices, enabling them to work at their own pace and level, shifting the classroom talk from teacher to student, and learning with and from students. They spoke of enjoying this opportunity to be colearners, as well as to shed their typical content area roles. As she adopted the empowerer role, Natasha emphasized that the teachers on her team were "not just math teacher, science teacher, humanities teacher, but [instead] mentors, helping kids learn how to be self-directed and practice the mindsets that are needed to become motivated learners." And Amelia explained, "[I] like the idea of being more of a generalist . . . I won't always be seen as the science teacher. I want to be seen as somebody who can talk to you about things and figure things out." This need for students in a PLE to "figure things out" also called on teachers to adopt a second role, which we have come to call scout.

## Scout

When letting students lead, teachers in PLEs often found themselves needing to scout for resources and map out next steps. Given the broad range of knowledge and skills students were pursuing in their PLEs, these teachers no longer fell back on the familiar routine of preparing one set of resources or even leveled sets on one topic. Instead, the necessary materials and other supports varied considerably from student to student. They described four strategies they used to act as a scout—by which we mean a person sent out ahead of a group to gather information and explore options—on behalf of the students. They sought out students' interests, aligned curriculum accordingly, curated digital and material resources, and connected students with human resources.

**Seek out student interests.** As scouts, teachers sought out students' interests, both existing and new. Michael offered, "My advice is really to find out specifically what the kid is into, and let them tell you about it, let them show you . . . That's [coming] from them, so it's not coming from the teacher." Connie similarly emphasized the role of student interest and enthusiasm as she reflected, "To me authentic learning starts with an idea, something kids are really, really excited about." Paul spoke about student interests in terms of teacher and student goals: "What's the difference between personalization and differentiation as it comes to the teacher's desired goals? For me, that it's a genuine goal that kids have, which means I'm loosening up my curriculum to accommodate more of their personal interests." With that distinction between personalization and differentiation, Paul came to appreciate the importance of student-driven goal setting and the implications of those goals for the curriculum. In addition to honoring students' existing curiosities, these teachers viewed their role as assisting students with finding new areas of interest, or, as Margot put it, helping them "look for cool ideas they might be interested in." As Margot's comment suggested, not all students arrive at school with clear passions; it was not unusual for students in these classrooms to need support in identifying new topics or concepts. Maria tried to help

students find new ideas to explore by asking, "How can we find something for you that you're really going to enjoy? This should be the best part of your day." Once students identified their individual interests, teachers leveraged those interests to build curriculum.

**Align curriculum with student interests.** As teachers came to understand students' existing interests, as well as help them uncover others, they planned curriculum accordingly. Teachers discussed scouting for possible pathways and learning opportunities while remaining flexible throughout a project. Michael described, "You really need to be able to listen to what [students] are saying, and think about it, and make connections to move them forward." Natalie noted, "I'm always farming for emerging curriculum, seeing what would interest students or what they need next or what they bring to the classroom." Natalie's responsiveness to students' evolving interests contrasted with the more rigid unit mapping teachers recalled from their earlier approaches to teaching. Michael, for example, offered that, "In the beginning, I'd say, 'No, you have to draw. This is the time to draw. What's wrong with you? If someone gave me an hour to draw, I'd love it.'" He smiled as he elaborated, "By the end, I was like, 'Yeah, let's take the screen apart and see how the window works,' or something." Cassandra traced a similar shift in how she prepared for two units:

> The perfect example was the difference between my first and second units, when I had spent hours creating a website for the kids for their town history project, outlining every single step that I wanted them to take, and I had an idea of what I wanted the end product to be. As the kids started questioning things and stating their own ideas, we started changing the website together. I realized it was a much better way to do it. And so, with the second unit, we started with a blank website with just the question, and they came up with what the project needs to have.

Drawing on her 4 years of experience with personalization, Stacey described the flexibility inherent in being a curriculum scout in a PLE: "That's how I've changed as a teacher within these 4 years of running this program. Year 1 I had every day planned start to finish. I don't do that anymore." As these teachers attested, responding to students' interests—sometimes on the fly—challenged their skills as curriculum designers. Moreover, it stretched their ability to curate resources to meet students' needs and interests.

**Curate digital and material resources.** Teachers in the study described scouting for digital and material resources for their students' varied learning needs. Stacey talked about developing a resource base, "and for me a lot of that was just physical materials." Crystal saw her curation as a playlist, explaining that "each student has their basic plan that they're working on. They start with a pretest for the unit. I make recommendations for them. It's like a playlist of what they still need to work on within that unit." Connie leveraged technology to support personalization in the art classroom, recognizing that students in a PLE need access to resources and instruction at different times. She offered, "I've started creating little videos . . . I have a video on Vimeo that tells you how to use watercolors." Victoria compiled resources on a digital tablet for students' independent use, explaining, "I use a tablet a lot to put up resources for them, and I just say 'Go to the tablet. Find your topic. Find your resources. And if that's not helping, call me back.' It's a lot of fostering independence."

And Travis illustrated his role as scout in helping students access content for their learning, as he described, "I am not the one that holds all the content anymore. I'm the one that's going to help them access it if they need help and then figuring out what to do with it." Melanie struck a similar note, as she explained: "One of the students is really into, I would say, farming, I guess, so goats and chickens. And I've never had any sort of livestock or poultry or anything. So she's learning all about animal husbandry, and she's going to start breeding her goats and showing them. And I feel totally comfortable with her doing that because I don't view my role at all to be the expert. It's just in guiding the students, making sure that they have the resources, connecting them."

Melanie's observation illustrated how aligning the curriculum with students' interests often drew teachers far afield of their familiar content areas and stretched their capacity to manage the logistical demands of self-directed learning. In these cases, teachers also described the need to connect students with human resources.

**Connect students with human resources.** As students pursued learning that was personally meaningful, teachers described identifying people to serve as resources on students' learning journeys. Keb described, "We can't offer everything, but it's not our job to offer everything. It's our job to explain how to navigate the world. You want to learn jiu-jitsu? Great, here's where the jiu-jitsu studio is. Here's how to contact them." Natasha similarly described, "If I do have a kid who isn't quite saying it, but I think might be really into coding, well, I know a teacher who's into that and I can sort of send them in that direction."

Sometimes teachers sought human resources as a means to juggle the various groups of students that often emerge in a PLE. Victoria explained how she scouted for support when one group needed to use the school's maker space: "If we're doing a tech-based [project], I can't bring all 21 fourth graders down to the maker space with me to work on one group's project. That's not going to work. And we don't always have the staffing for someone to come in and take out that group, so it's been a lot of flexibility and a lot of, 'Hey, does anyone want to take these kids to record? Can someone help us out here?'"

In the role of scout, teachers described letting students lead while simultaneously needing to scout the way ahead, curate resources, and look out for potential opportunities, misunderstandings, and challenges. They also recognized when students would benefit from greater support and scaffolding.

### Scaffolder

Teachers in this study used the term "scaffold" to describe many of their strategies to ensure students engaged productively in learning. When asked what advice he would give to a teacher who was new to personalized learning, Jason offered, "You have to really plan for a ton of different scaffolds along the way, because (students) will need them. Any time you might think that there's a little bit of possible confusion, you should have a scaffold ready." The scaffolds teachers described most fell into four types: structuring, fading, modeling, and questioning.

**Structuring.** The creation of new structures to support students' success in PLEs was foremost among the scaffolding teachers identified. When describing his role in a PLE, Paul first asked himself, "What are the routines and structures in place that enable kids to personalize?" Natasha recounted the dramatic change students experienced in the degree of structure, stating, "It was so teacher-directed before that

it would be, 'Day 1, we're going to read this article. Day 2, we're going to draw this picture.' And now it's none of that." Natasha noted that, because of this shift, "There are more kids who are not sure where to start than there used to be." And in Jason's initial efforts, he reported, "There wasn't quite enough structure for them to grab on to. So the results were varied."

Teachers discovered that students often needed help with time management in particular. Vanessa's scaffolding of time management began in the critical first stages of project development. She helped students develop realistic plans that matched a project's scope and scale with the time available to accomplish the work. She noted, "Time management is really hard . . . there's a lot of scaffolding around, 'You want to build an elephant out of tin cans in the next 2 weeks? Maybe we don't have to make it life-size.'" Maria recognized that time management skills could help students keep their projects on track. "In trying to give students autonomy in creating their own deadlines," she recalled, "it just doesn't always work." She acknowledged that her approach to scaffolding time management was still evolving: "If you were to try to chunk your project, these would be suggested sort of timelines. I think it's about helping students design a backwards, you know, timeline for their project." In addition to trying to offer structures for students, teachers also needed to know when to fade, or gradually remove the structures, to support student independence.

**Fading.** The practice of supplying and then gradually removing supports was one of the most widely utilized scaffolds to which teachers referred. Victoria described how she integrated a fading strategy for her fourth-grade students as the school year progressed, stating, "My goal is definitely to put the scaffolds in up front and by the middle of the year have [students] in a good place to do it on their own." She explained, "It did take a lot of scaffolding up front. We would spend a whole week on what does a team leader look like, and everyone would have a chance to practice team leader, and then go through all the roles." Victoria compared this process to that of their second project, explaining that, "I could just kind of step back and be like, 'Okay, you have your team leaders. You have your roles. You do it. Sign up on the board if you need my help.' I float around the room."

Some teachers, especially those who worked on multigrade teams, aligned degrees of fading with particular grade levels. Amelia, for example, explained that, "Our sixth graders I tend to work with more in groups, and they're doing the same topic or question so I can monitor what they're doing, and we move together as a group. And seventh grade is a mix." Natalie relied on a similar strategy as she worked to build student independence in the art studio, stating that, "for fifth graders we begin with one center at a time and gradually open the whole room until the whole studio is open." Several teachers expressed concern about knowing when to fade, however. Cassandra cautioned that age or grade level may not always be a good predictor of students' readiness for greater self-direction: "I had scaffolded [the project] pretty heavily, because they were a group of fourth graders. And they really shocked me at how much they were able to come up with." This group of teachers shared many examples of structuring and fading that they felt were essential scaffolding strategies; they also described targeted modeling as a helpful approach.

**Modeling.** Modeling emerged as a strategy to scaffold student skills. Amelia reflected, "Really a lot of it is modeling, showing them how to do it because it's not innate." Much of this modeling occurred in brief spurts of direct instruction. As Jason explained, "The direct instruction in my classroom lasts for no more than 10 minutes

every day." Natalie similarly emphasized the role of brevity, saying, "Students come in and typically they all hear a lesson, very brief, kind of writer's workshop model, something that I would identify that I think everyone needs to know, but I try to keep it to just 5 minutes." Natalie elaborated by describing how she also models in small group and individual instruction: "Sometimes after the whole group lesson we'll break into a small group. People interested in learning to do this will come meet me here. Or sometimes I'll just keep an eye out for someone who needs individual work. I'll either observe or work sort of side-by-side with them, modeling how I've worked as an artist."

Victoria spoke of "just looking for where they might need mini-lessons" as opportunities for direct instruction or, as in this example, "Let's say we have a group writing a letter to a senator. They might need a grammar lesson on how to write a letter. So, it's that intentional looking for skills and making sure you're modeling the best practice."

**Questioning.** Teachers in this study also regularly scaffolded posed questions to students: to check in, to lead students to a specific strategy or answer, to promote problem solving, and to suggest new resources. Sometimes teachers' questions served as a simple status check while moving around the classroom. Amelia stated, "I love the way that I can interact with them. I start out kind of circling [the classroom]. 'What are you doing? What are you doing?' We kind of check in." Teachers also posed questions to lead students toward a more productive strategy. Cassandra explained it this way: "My role was to pose the question rather than being the person in charge who was telling them what to do. If I saw them getting off-track, posing questions rather than—that was hard—rather than telling them exactly what they should be doing."

At other times, the questions invited students to consider new ideas as a means of problem solving. Amelia often asked students, "What do you think you should do next time?" as a way of "trying to put it on them to figure that out and not me having to guide them all the way through it." Crystal described a similar approach, saying, "A lot of my role is about 'What are you going to do to learn this? What are your resources? What have you tried? What are your options for problem solving?'" At times, teachers' questions led students to new learning resources or pathways. Paul often used questions in this way, saying to students, "Hey, I noticed you haven't been over there yet. Like, you've been messing around with chemicals over here for the last 3 days. Have you gone to the research table? Have you looked at any of those?" Victoria similarly recalled saying to students, "Oh wow, I really like how your group wanted to do tornado safety. That's really cool. Let's think about now, where might tornadoes happen?" She summarized this strategy as "guiding them in that direction, but then letting them make their own meaning from it, and finding their own answers to those questions." As with structures, fading, and modeling, questioning was a central scaffolding technique these teachers used to help students become more independent and self-directed in a PLE. Thoughtful questions supported students in solving problems and identifying new strategies throughout their personalized learning journeys.

## Assessor

We have named the fourth role identified by teachers in PLEs "assessor." Although assessing student work clearly is not exclusive to PLEs, teachers described employing three main strategies when assessing personalized learning: distinguishing

between assessment and evaluation, providing ongoing formative assessment, and identifying learning targets and scales.

**Distinguishing between assessment and evaluation.** Study participants distinguished between assessment and evaluation, acknowledging the different purposes of each. When asked what advice he would give teachers who were working in PLEs, Jim was clear that his "first bit of advice would be to keep it really simple, to have . . . clear expectations for what you are and aren't going to evaluate." He elaborated, "I question the value of uniform evaluation in personalized learning. I think each of the students has different assessment-based needs." Liesl explained, "I'll give the common assessments that everybody gives so that we can prove that my kids are learning what they're supposed to be learning, but I basically do this as a project-based learning class." Paul described his process for emphasizing assessment over evaluation as he explained gradually moving away from using numbers for grades and instead providing only narrative feedback. "The first step was to write comments only on their work, and put the numbers up on Schoology, which was the LMS we were using. . . . Then the next time I gave the formative feedback and same thing, said, 'If you're curious about the grade, go ahead and look on Schoology.' And then after a little while, I just stopped putting the numbers on."

To provide this narrative feedback to students, teachers emphasized the ways in which they monitored student learning regularly and often, offering feedback and feedforward to students.

**Providing ongoing formative assessment.** Teachers stressed the importance of helping students identify strengths and areas for improvement while the learning was occurring rather than evaluating only the end product. Margot explained, "While they're writing some sort of piece, it's my role to look over their writing, give them feedback, and help them with some of the detail work." Maria held regular weekly meetings for this purpose, explaining, "I call them up when I'm seeing things that I'm red flagging or curious about, so once or twice a week they'll come up and check in with me." Jim used a similar process to align students' projects with their learning goals. He offered, "It's self-guided, really. I ask for check-ins and I give feedback around if I think they need to do a better job of establishing what their goals are in relationship to their project." Denise emphasized self-assessment in this formative process, asking students to identify where they think they are on the learning scale at a given moment. She explained, "They tell me they think they're here or there and we talk about what it looks like to get to the next level on the learning scale or what they think needs to happen." The learning scales referenced here were a third key strategy that teachers employed as assessors.

**Identifying learning targets and scales.** Teachers described learning targets and scales as their primary way to communicate clear expectations. Connie explained that in her art room, "I have three learning targets that I assess on. 'Using self-direction and initiative I can refine and complete an artwork using the artistic process' is the first one." It was important that the learning targets were made consistently accessible to students. Stacey noted that the targets "are posted around the room. They know this is the agenda for the class. It's what we want to get to at the end, but we can be really flexible within the 6 weeks as to when we do that." Denise echoed this sentiment, conveying, "They always have the scale, sometimes it's on the board, sometimes it's printed out, it's even taped or glued in their folders, so it's everywhere."

The identification of these learning targets and skills served as the basis for ongoing formative assessment. However, teachers also experienced tensions and challenges as they acted as assessors, particularly in relation to high expectations and work quality. We describe this tension, and others, next in relation to role conflict in PLEs.

## Role Conflict and Prioritization

Participants described several teacher roles as being both expected and yet simultaneously incompatible with PLEs. First, teachers wondered how to meet what they perceived as societal expectations for teachers while also serving as empowerers and transferring more control of learning from themselves to their students. Crystal spoke retrospectively of working through this issue. She reflected on her internal expectation that a teacher's role is to provide the answers, as she described, "I had to really let go of a lot of the paradigm that I thought of what I should be, and realized that the one-on-one, student-led conversations and conferences were much more meaningful than me telling them something." Other teachers worried about external perceptions and the expectation for teachers to keep quiet, focused classrooms. Amelia explained: "If you let them be independent you have to allow for those natural learning moments that come from wasting time, which, as a teacher, like (screams) if somebody walked in right now and saw this I'd be fired! I mean, they would think, 'What's going on? How is this allowed?'"

Natalie explained that the role conflict was so overt that she'd been asked not to divulge to others that she didn't provide grades in her class, stating, "I'm supposed to keep this on the down low but I've gotten rid of grading for the last 3 years because I don't want extrinsic motivators to interfere with the intrinsically motivated learning that I'm trying so hard to promote!"

Teachers similarly identified role conflict between and among the roles they adopted for the PLEs. For example, because this type of personalized learning aimed to promote SDL, teachers adopted the role of empowerer as they created opportunities for students to direct their own learning. Within these opportunities, teachers supported student learning by applying the strategies associated with both the scaffolder and scout roles. As they did so, they confronted the question of how to empower learners while concomitantly scaffolding and scouting. On the one hand, teachers were expected to let students drive their own learning and, on the other hand, teachers were expected to provide structures, resources, and templates. Were students leading if they weren't setting their own deadlines? Were students owning the learning if teachers were curating resources? What was the right balance and how should teachers manage their actions when their roles conflicted? In particular, participants questioned which of their roles to consider as primary and how to reconcile the risks associated with prioritizing one role over another.

**Prioritizing the empowerer role.** As teachers in the PLEs increasingly considered student self-direction as a goal, they adopted the empowerer role to foster self-direction. Prioritizing the empowerer role felt like a natural default for many teachers in this study, given that a key aim of their personalized learning initiative was to place the student in the metaphorical driver's seat. Yet participants voiced concern about potential costs of such prioritization. Amelia summarized this challenge, stating, "It's hard to know . . . 'How far do I let that one go before I should intervene?'" They

worried about depth and accuracy if they placed the empowerer role above that of scaffolder. Would too much empowerment come at the cost of learning content? Maria acknowledged this challenge: "To be able to catch every factual detail or inaccuracy for 17 different projects is nearly impossible!" She described a recent, related conundrum: "A huge thing that came up with the last presentations was just truthfulness and, you know, saying things that are actually factual. . . . How much do you catch? How much do you let the student go up and say makeup was invented in eastern Europe in the 1500-something on Thanksgiving Day? How much am I responsible for that student and what they say, and how much is the student responsible? And that, I feel that quality control as a teacher we sometimes care more about the quality than the students. Where does our role ultimately end?"

Amelia reconciled the possible limitations on students' mastery of content with the opportunity to identify needed self-direction skills, explaining, "I haven't seen amazing, wonderful in-depth content learning, but I feel like the learning is coming out more in terms of recognizing pitfalls that students might have with independence skills." For Amelia, empowering for self-direction won out, yet she grappled regularly with such questions. In these ways, the teachers confronted daily challenges of role conflict and, accordingly, made choices about prioritization.

**Prioritizing the scaffolder and scout roles.** Prioritizing the scaffolder and scout roles presented its own challenges. Teachers worried about squelching students' self-directed ambitions if they provided too much direction. Stacey explained that it "gets tricky because sometimes their ideas are so big and amazing and awesome, yet not that realistic within time, space, money, logistics, knowledge base. . . . " She wondered how to have "those conversations where you're not completely shooting down their ideas but giving them reasonable, realistic pathways and goals that they can feel accomplished with." And Natalie explained, "Kids tend to come in and say, 'Can we get right to work?' Which is a wonderful question, right? Wouldn't every teacher want that? I feel foolish saying, 'No, sit down. I want to tell you something, teach you something.'" Maria described, "In the beginning we had them fill out a goal every single day. . . . That became kind of tedious and a little bit too force-fed."

Teachers also felt that prioritizing the roles of scaffolder and scout ran the risk of shortchanging the development of self-direction skills. Crystal wondered how to "not necessarily swoop in and save them, which can be really hard when they're struggling." Maria described how she felt pulled between scaffolding and empowering: "Their first project . . . worked out to be 20 or so class periods. So I was even as specific as, 'On October 1, you should be researching . . . , on October 5, starting your presentation,' which I felt was a little bit too guided. . . . In trying to give students autonomy in creating their own deadlines, it just doesn't always work. So I try to impose deadlines, and that doesn't always work!"

Amelia echoed this conflict, reflecting on how the provision of greater structure might result in more content but fewer skills in time management. "I feel like learning has been happening, but it's hard to measure that and to not get lost in, 'Oh my gosh, they could be learning more if we just put them in this class that was structured and they followed and they got that content!' But, then, I don't know if they'd have the power of learning from wasted time, because sometimes you have to waste time and you have to do a really crappy job on a project to learn why that didn't feel good."

**Prioritizing the assessor role.** Much of the conflict described above might have challenged teachers less had they not also been playing the role of assessor. Although the teachers espoused the importance of authentic audiences, they were similarly aware that students' final products resulting from self-direction might be less polished or less accurate. Margot described this issue, explaining, "Some (projects) are going to be OK, but they're not going to have the greatest quality. And, if those are public presentations, sometimes it's hard when they're not the greatest quality but they're totally student driven." Maria also described a few projects that fell short of meeting what she considered a sufficient standard of quality. She offered, "I think some students were feeling embarrassed to put their work out there. And I feel like the authentic audience was very important but I feel it's about high expectations and having them continue trying to meet those expectations." Paul summarized, "Grading, assessing is very clearly one of the hardest pieces and it's hard to reduce that pressure if you're scoring kids on their performance. . . . Some of the shifts that we're moving into for instructional purposes make beautiful sense—but for evaluation purposes, can be really harsh."

In each of these instances, teachers grappled with role conflict as they faced decisions about meeting expectations within the array of roles.

## Discussion and Implications

The JFF and CCSSO (2015) identified the need for research that would inform our understanding of teacher competencies in PLEs. Indeed, several of the strategies described by participants in this research aligned with the proposed Educator Competencies for Personalized, Learner-Centered Teaching (JFF & CCSSO, 2015). Explored through role theory, however, it became clear that the teachers in this study were challenged by more than the acquisition of new teaching competencies. The roles to which they had become accustomed throughout their careers—the set of expectations, norms, and behaviors that they had long sought to fulfill (Banton, 1996)—clashed with the new roles they sought to assume for PLEs. Rather than serving as experts who teach required subject matter and "pass on required knowledge to students" (Cuban, 1993, p. 15), the teachers in this study described themselves as empowerers who let students lead, learned with and from students, and aligned curriculum with students' interests. They described internal struggles and concern about external judgments as they departed from traditional social norms and expectations that have positioned public schoolteachers as figures of authority and control in the classroom for centuries (Metz, 1978; Waller, 1932/1965). That teachers experienced conflict between their PLE roles and those they had been socialized to perform was relatively unsurprising, given prior research on teachers who engage in reform-oriented practices (Jong, 2016). In turn, role ambiguity, or a lack of clarity about role expectations (Rizzo et al., 1970), can produce cognitive strain and, often, diminished results (Jones, 1993). Moreover, strain that results from these conflicts can negatively affect job performance (Goode, 1960; Merton, 1957a).

Role theory suggests that individuals who experience role strain typically respond in one of several ways to minimize or resolve the effects. One option is to determine the relative importance of the roles and emphasize that which is most important

(Merton, 1957a). In this case, a teacher might respond to a student presenting inaccurate information, for example, by prioritizing the empowerer role and withholding feedback about accuracy while advancing assessment aims in other ways. Conversely, because individuals tend to prioritize the roles that are most central to their identity and for which they are most likely to be evaluated (Parsons, 1966; Stryker, 2001), teachers who were being evaluated on the basis of their student's accuracy might prioritize the assessor or scaffolder roles instead. Another response to role strain might be to abridge the role set by discarding the least compatible roles (Merton, 1957a). Here a teacher might decide to discard the empowerer role, determining it to be incompatible with the status of assessor. Yet another alternative is Goffman's (1959) concept of role distance, in which an individual may continue to fulfill the conflicting roles but do so with a sense of detachment. This might result in a teacher's continuing to fulfill both empowerer and assessor roles yet becoming numb to the potential conflict between two primary stances and related actions. Alternatively, teachers may improvise in new roles to distance themselves from the aspects of the role that create conflict (Stebbins, 1967).

Whether through prioritization, abridgement, or distancing to the degree that these responses to role conflict impede the adoption of roles and practices important in PLEs, the implementation and ultimate efficacy of PLEs may suffer. These responses may reflect a range of ways teachers have been "hugging the middle" (Cuban, 2007) between conflicting norms and expectations for teaching, increasing the appearance of student-centered practices but ceding little in the way of authority and control to students. And myriad role conflicts further complicate the caution that accompanied the release of the Educator Competencies for Personalized, Student-Centered Teaching: The competencies should "not be read as progressions or prioritized until further research can be conducted. We do not currently have enough information about implementation of personalized, learning-centered approaches to prioritize the domains, or outline a progression for training in the competencies" (JFF & CCSSO, 2015, p. 4).

Using role theory as a lens for examining this study's findings also helps reveal the interplay of expectations, norms, and practices as teachers take their position in PLEs. Understanding teachers' experience with this interplay has implications for teacher preparation programs, in-service professional development, and school change planning. Teachers' engagement in each of these efforts helps shape the behaviors, norms, and expectations of the profession. Role conflict and strain may be reduced if these efforts jointly foster in preservice and in-service teachers the knowledge, beliefs, skills, and dispositions that align with the goals of the PLE and help educators effectively navigate the role strain they may experience while also meeting the requirements for national accreditation. This alignment may rely on reducing the potentially contradictory visions for teacher roles among PLEs, InTASC standards, and accreditation standards for teacher preparation. Collegial dynamics through student teacher placement, initial teacher placement, and mentoring may also either reduce or exacerbate role strain for emerging teachers. In addition, teachers' perceptions of role shifts encountered in the transition to PLEs could inform the design of broader implementation of PLEs, including, for instance, the phasing of implementation, new systems development, and community engagement that acknowledge the role conflicts that teachers face in the course of significant school change.

This study contributes to the limited research on teaching roles adopted by teachers of elementary and middle grades who are developing PLEs. The roles of empowerer, scout, scaffolder, and assessor identified within this research are by no means the only roles that teachers assume in PLEs. Similarly, the list of associated strategies is not comprehensive. This study suggests a number of areas ripe for future research in an era of increasing personalization with regard to teachers' roles. For example, how do role prioritization, role abridgement, and role distance, as well as other responses to role conflict, play out over time? What are the implications for PLE implementation, particularly with regard to effects on student interest, engagement, and achievement in PLEs? What teacher roles emerge in more culturally or racially diverse school settings? How do teacher roles in PLEs in elementary and middle grades compared with those in high schools? To what extent do teachers' prior backgrounds or philosophical orientations influence the ease with which they adopt new roles? What is the status of teacher preparation in terms of curriculum for personalized learning? And how might insights into these questions inform taking PLEs to scale in schools, districts, and states?

## Conclusion

As an increasing number of states, districts, and schools implement PLEs that entail fundamental changes in the purposes and practices of schooling, understanding what this reform means for teachers' roles within and beyond the classroom is a critical initial step. This study represents one of the first empirical investigations into teachers' roles in PLEs focused on co-construction of learning by students and educators in the elementary and middle grades. The findings suggest that implementing PLEs requires more than teachers adopting new teaching practices. Rather, the teachers in this study described the need for teacher roles that empower students in the learning process, scout student interests and resources to support their learning, scaffold emergent projects, and assess diverse forms of student work. They conveyed how adopting these roles involved challenging norms and expectations related to past roles they and others expected them to fulfill, as well as how the new roles presented their own challenges. Therefore, schools intending to enact personalized learning should attend to the internal and external norms and expectations for the various roles teachers play in the learning lives of elementary and middle school students.

## Appendix A

### Teacher Participant Demographics

Table A1. Teacher Pseudonyms and Their Corresponding Teaching Positions

| Name | Grades, Subject(s), Grade Level(s), and Team Configuration |
|---|---|
| Amelia | Teaches science on a seven-teacher, multi-age, sixth- to eighth-grade team |
| | Teaches as a generalist during a daily, 1-hour, personalized learning class |
| Cassandra | Teaches all subjects in third grade and partners closely with fourth-grade teacher |
| Connie | Teaches sixth- to seventh-grade art as a member of Unified Arts team |
| | Teaches a daily personalized learning class |

Table A1. (*Continued*)

| Name | Grades, Subject(s), Grade Level(s), and Team Configuration |
|---|---|
| Crystal | Teaches math courses in seventh through twelfth grades |
| Denise | Teaches humanities on a four-teacher, multi-age, seventh- to eighth-grade team |
| | Teaches a daily personalized learning class |
| Jason | Teaches social studies on a four-teacher, multi-age, seventh- to eighth-grade team |
| Jim | Teaches sixth-grade language arts and integrated studies on sixth- to eighth-grade team |
| | Teaches as a generalist for a 1- to 2-hour thematic block |
| Keb | Teaches humanities and interdisciplinary courses in seventh and eighth grades |
| Liesl | Teaches on a two-teacher, sixth-grade team |
| Margot | Teaches on a two-teacher, looping, fifth- to sixth-grade team |
| | Teaches math on a seven-teacher, multi-age, sixth- to eighth-grade team |
| Maria | Teaches as a generalist during a daily, 1-hour, personalized learning class |
| Melanie | Teaches humanities on a three-teacher, seventh- to eighth-grade team |
| | Teaches as a generalist in a daily personalized learning class |
| Michael | Teaches science on a four-teacher, fifth- to sixth-grade team |
| | Teaches as a generalist during a daily, 1-hour, personalized learning class |
| Natalie | Teaches sixth- to eighth-grade art as member of Unified Arts team |
| Natasha | Teaches math on a four-teacher, fifth- to sixth-grade team |
| | Teaches as a generalist during a daily, 1-hour, personalized learning class |
| Paul | Teaches science on a four-teacher, seventh- to eighth-grade team |
| Stacey | Teaches fifth- to eighth-grade sustainability as member of Unified Arts team |
| Travis | Teaches on a two-teacher, looping, fifth- to sixth-grade team |
| Vanessa | Teaches literacy and social studies as part of a two-teacher, fifth- to sixth-grade team |
| Victoria | Teaches all subjects in fourth grade and partners closely with third-grade teacher |

## Appendix B

### Teacher Interview Protocol

Throughout the protocol [this personalized learning initiative] is replaced with the name of the class or initiative at the interviewees' schools.

1. Please describe your role as you worked with students during [this personalized learning initiative].
2. How, if at all, is this role different than the one you play at other times while teaching?
3. Has your role been the same since [this personalized learning initiative] was put into place or has it changed at all over time?
4. Please talk about whether this role emerged naturally or was intentionally pursued.
5. To what extent have you experienced challenges with your role as it relates to [this personalized learning initiative]? How have you responded to these challenges?
6. Has the role of educator/teacher been played by others (e.g., community members, students, virtual mentors) during [this personalized learning initiative]?

    a. In what ways is this different than the usual roles they play?
    b. In what ways is this different than is typical for your school community?
    c. How have you collaborated with these individuals?

7. What are your goals with regard to your role in [this personalized learning initiative] moving forward?

## Note

Penny A. Bishop is professor of education at the University of Vermont; John M. Downes is director of the Tarrant Institute for Innovative Education at the University of Vermont; Steven Netcoh is a postdoctoral fellow at the Tarrant Institute for Innovative Education at the University of Vermont; Katy Farber is a professional development coordinator at the Tarrant Institute for Innovative Education at the University of Vermont; Jessica DeMink-Carthew is an assistant professor of education at the University of Vermont; Tricia Brown is a doctoral student in the Department of Education at University of Vermont; Rachel Mark is a professional development coordinator at the Tarrant Institute for Innovative Education at the University of Vermont. Correspondence may be sent to Penny Bishop at pbishop@uvm.edu.

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