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Reinvigorating the Desire to Teach: Teacher Professional Development for Creativity, Agency, Stress Reduction, and Wellbeing

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Research suggests that teachers' creative development may materialize in more resilience and joy and less stress, but these connections have received little attention. This mixed methods study analyzes the effectiveness of a hybrid professional development model focused on teachers' creative agency during the COVID-19 pandemic, a period of intensified stress, anxiety, and disconnect. Results indicated the PD experience supported (a) an increase in teachers' creative agency, empathy, joy, buoyancy, and support in teaching during the pandemic and (b) a reduction in their secondary traumatic stress. Qualitative analyses illustrated a variety of personalized pathways for this development. The evidence suggests teachers' creative agency and wellbeing can develop through a complementary process, rooted in creativity and the arts.

Keywords: creativity, agency, secondary traumatic stress, professional development, resilience, arts integration, mindset

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INTRODUCTION

Teachers experience stress frequently in their profession (American Federation of Teachers, 2017). Up to 45% of teachers may experience burnout at some point (Schaufeli and Enzmann, 1998). Though burnout may contribute to a loss of roughly 40% of new teachers after their first 5 years (Ingersoll, 2002), some feel that what is really at stake is chronic teacher demoralization (Santoro, 2019). Whereas burnout places the responsibility on teachers' self-care, demoralization recognizes the effect of systemic inequities, insufficient resources, and instability of constantly changing reform initiatives. Collie et al. (2012) noted that international studies from the past five decades indicate a third of teachers report being stressed or "extremely stressed." For a profession that is focused on doing good work for society, the narrative of *demoralization* may be a better fit than *burnout* to account for the ever-increasing moral and ethical challenges facing teachers.

The COVID-19 pandemic has only exacerbated this ongoing issue. During the pandemic, more than three quarters of surveyed teachers in a 2021 study indicated frequent job-related stress—two times the rate of the general adult population (Steiner and Woo, 2021). An EdWeek Research Center study found that over half of teachers said they were "somewhat" or "very" likely to leave teaching within the next 2 years (Loewus, 2021). The kinds of stressors and ethical challenges teachers have faced are unprecedented. A new path needs to be charted in teacher preparation and in-service professional development to foster adaptability to manage these increasingly complex conditions and to reinvigorate educators' desire and joy for teaching.

In addition to professional stress and demoralization, teachers also navigate the trauma their students face—a phenomena called *secondary traumatic stress*, or STS. Students across the world have experienced some degree of disruption or trauma due to the COVID-19 pandemic (JED Foundation, 2021); for instance, six in 10 parents reported their child experienced mental or emotional health challenges (within the past month) during the 2020–2021 school year. Teachers have been managing the demanding task of offering support to students as they navigate serious mental health risks, such as suicidal ideation (Becker, 2021). Teachers have adapted to support their Students' academic and social-emotional needs while also developing ways to manage their own stress and anxiety, including the STS they face on a day-to-day basis in their work with students. The stressful ethical dilemma teachers face to care for their own needs while the needs of their students continues to climb should not be underestimated. The intensity of stress and demoralization coupled with STS suggests not only a challenge to the sustainability of the teacher profession, but also an emerging mental health concern in a large public service sector of the workforce—a concern largely ignored to date (Hydon et al., 2015). Those figures present an unsustainable state of workplace mental health for teachers—a veritable "canary in the coalmine" issue for administrators, researchers and policymakers, alike.

This current study builds on the premise that the COVID-19 pandemic represents a seismic disruption, requiring teachers' to develop their *creative agency* to be strong in their beliefs and values for creativity in teaching and learning, adaptive in the face of uncertainty, empathetic to students, and multidisciplinary and integrative in how they teach. Past research demonstrates how creative agency directly links to the resilience needed to face disruption and widespread trauma, such as a global pandemic, with the buoyancy and adaptability to bounce back and maintain wellbeing (Anderson et al., 2021; Orkibi, 2021). As prior research linking teachers' creativity and wellbeing in the face of disruption has been rare, this study aims to contribute new evidence and understanding about this intersection, shaping a new path for teacher development. This mixed methods study addresses these gaps by investigating an innovative professional development (PD) model, called makeSPACE, that personalizes teacher creative development (find more information at www.makespaceproject.org). This study examines the extent to which PD focused on teachers' creative resources may help reduce their STS, anxiety facing ambiguous challenges, and general negative affect, while also helping to increase their joy, creative beliefs, empathy, buoyancy, and general positive affect. Results can help shape how the education field approaches teacher development after the traumatic experience of the pandemic.

THEORETICAL FRAMEWORK

We propose that teachers working in socioeconomically marginalized schools have likely dealt with high levels of STS during the pandemic. The development of their creative agency may enable them to thrive in the stressful circumstances of their jobs and maintain, or even enhance, their joy in this meaningful profession, even when the challenges may be extreme and demoralization high. Different aspects of creative development have been linked to overall wellbeing across the lifespan (Cohen, 1989; Anderson, 2019, 2020; Orkibi, 2021) and the resilience to bounce back from setbacks in the face of adversity (Sweetman et al., 2011). Thus, the framework described further in the following sections and illustrated in **Figure 1** defines and examines how creative agency may buoy teachers' resilience and joy in the face of disruption and stress, such as STS.

Creative Agency for Teachers

The *creative agency for teachers* framework builds on the model of creative behavior as agentic action (Karwowski and Beghetto, 2018), which has been growing a body of supportive evidence at both the student and teacher levels in schools (see Anderson et al., 2021, 2022). Creative agency for teachers incorporates extensive research on the individual-level factors that cultivate creativity (i.e., original and appropriate ideas and solutions) and the agentic process that brings this creative potential to life through action in and exchange with the world. The notion that personal agency incorporates an individual's values, beliefs, and reflection is rooted in Bandura's (1986) social cognitive theory. The development of values and beliefs related to creative teaching and learning may be especially important to teachers. For instance, teachers' mindset about creative abilities for themselves and their students has emerged as an important part of teaching for creativity in the classroom (Karwowski, 2014; Hass et al., 2016; Katz-Buonincontro et al., 2020).

Before teachers will take risks with innovative strategies to support students' own creative learning and agentic development (Anderson et al., 2022), teachers need to feel (a) more creative self-efficacy in the classroom and (b) less creative anxiety in taking risks and trying new things (see Daker et al., 2019). Recent research has illustrated that professional development focused on teachers' self-beliefs and affect toward creativity can effectively prepare teachers with the necessary beliefs and affect for creative teaching and learning in the classroom (Anderson et al., 2022). Moreover, at the beginning of the pandemic, one study found that the support teachers perceived for creativity had a strong correlation to their positive affect and joy in teaching and lower degree of negative affect in their work (Anderson et al., 2021). That finding emphasizes the role of the environment and influence of others in agentic development.

In this framework of creative agency for teaching, teachers' creative mindset and self-efficacy can fuel their buoyancy, joy, wellbeing, and stress management. Teachers' own experience in creative development may be key to their understanding and awareness of the student experience taking creative risks (Bereczki and Kárpáti, 2018; Rubenstein et al., 2018; Anderson et al., 2022). Integrating creative opportunities into the student learning experience may only be effective if teachers hold this understanding—what we refer to as *cognitive empathy for creative risk-taking*. Following the original definition of empathy from Rogers (1951), teachers must be able to think at the level of "what if" to understand the view, experience, and feelings of students in the context of creative learning. In qualitative research,

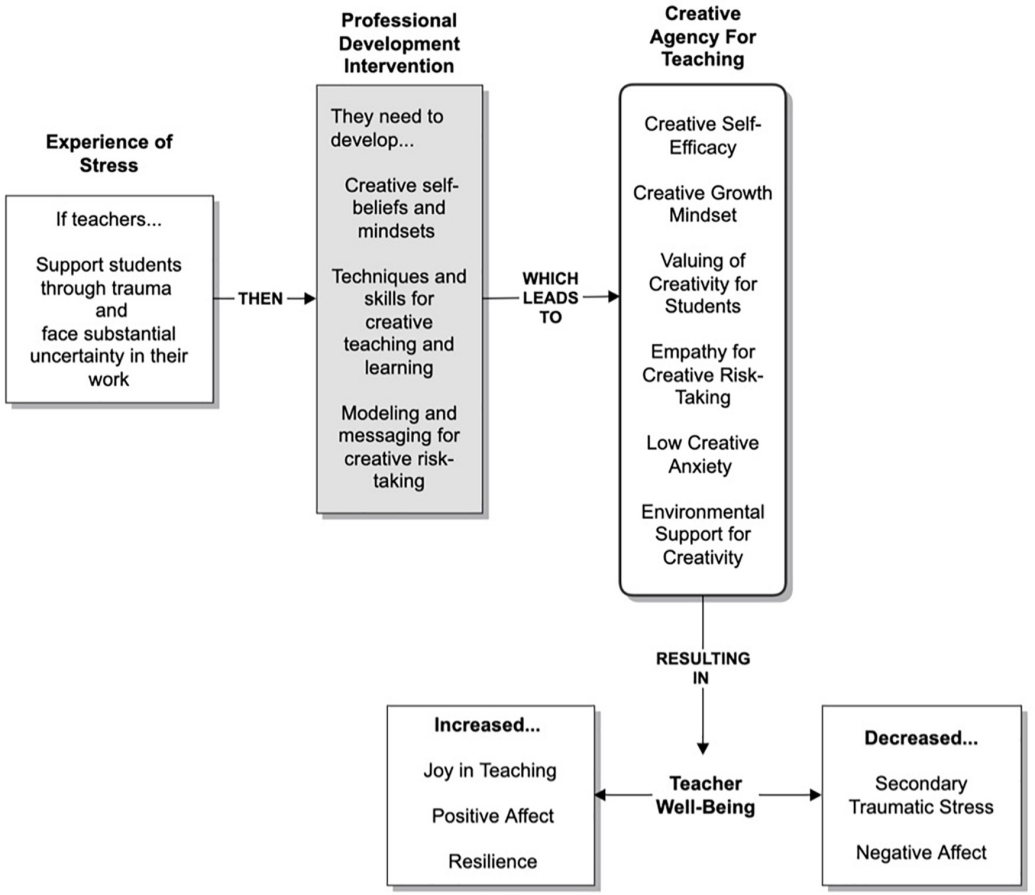

FIGURE 1 | Theoretical framework connecting teacher professional development to the cultivation of creative agency for teaching and teacher wellbeing.

teachers shared that this type of empathetic understanding at both conceptual and experiential levels as learners themselves was a vital piece of their own creative development (Anderson et al., 2022). This type of empathy fits well into the social cognitive perspective undergirding human agency (Carré et al., 2013; Bandura, 2018)—it enables them to cultivate learning environment conditions for students' creative expression and development (Anderson, 2019).

Secondary Traumatic Stress for Teachers

Research across several decades cites many different sources of stress for teachers with the two most consistent stressors being workload and student behavior (Collie et al., 2012). As Santoro (2019) suggests, teachers' demoralization goes beyond feeling burnt out by those kinds of stressors and relates more to caring deeply about the students they teach under conditions that don't allow them to do what is good and right. As such, we suggest teachers' STS plays a key role in their general demoralization in teaching. The negative effects of secondary exposure to a traumatic event can parallel the effects of primary exposure. Researchers have described this secondary traumatic stress as compassion fatigue (Figley, 1995). Those secondary effects result in intrusive imagery related to traumatic disclosure, avoidant responses in behavior and thinking, and physiological arousal, distressing emotions, and functional impairment (Bride et al., 2004). Though our understanding about the secondary traumatic stress experienced by teachers may be growing, little attention has been paid to the needs of teachers to respond adaptively to this type of stress prior to or during the COVID-19 pandemic.

Secondary traumatic stress is "the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person" (quoted in Bride et al., 2004 from Figley, 1999, p. 10). Teachers can be the first to witness, hear about, and respond to the trauma that children and youth experience through crises in and out of school (Hydon et al., 2015), and the COVID-19 pandemic has been traumatic for many students (Becker, 2021; JED Foundation, 2021). This current study builds on the empirical research studying the experience of professionals in clinical settings, by incorporating the three factors of intrusion, avoidance, and arousal (Bride et al., 2004).

Interventions to develop teachers' mindfulness practices for stress management demonstrates promise following three primary tenets: (a) to develop attentive awareness to focus one's mind on the present, (b) to have a receptive attitude and openness

to experiences in the present, and (c) to have intentionality in both the practice itself and in the emphasis and direction of that practice, such as compassion to oneself and others (Taylor et al., 2021). These studies have not included secondary traumatic stress, specifically, nor do mindfulness practices alone address the demoralization that arises for teachers supporting students living through traumatic experiences in untenable conditions. In fact, the third tenet of mindfulness may be counterproductive for dealing with "compassion fatigue." From a social cognitive theory perspective on human agency (Bandura, 2018) mindfulness practices on their own may not include sufficient actionable and *agentic* support and direction for teachers to take.

This study's framework, detailed in **Figure 1** and described in the following sections, proposes that teachers' agency for their creativity in teaching and learning is essential for their adaptability and wellness in the face of common and severe stressors, such as STS. As described in **Figure 1**, this study positions teachers' values, mindset, self-beliefs, affect, and empathy related to creativity in teaching and learning—their overall *creative agency*—as a means to reduce their STS and enhance their reslience, joy, and wellbeing. This model proposes that teachers will inevitably face stress and uncertainty, especially during a universally disruptive and traumatic experience such as the COVID-19 pandemic school shutdown. That experience demands two types of adaptive shifts. The first shift is in the inward self-beliefs, mindset, and affect about ones' own internal creative process and creative potential to take risks in the first place. The second shift is in the mindset and understanding about the creative development of students in the classroom. If PD can facilitate a shift on both dimensions, and potentially increase the environmental support for creativity in their school among colleagues, then the PD should also help to decrease STS and enhance joy and resilience for teachers during challenging and emotional times.

Resilience and Joy to Counteract Stress

Finding ways to maintain joy throughout challenging circumstances may require some creative efforts and the resilience to bounce back from setbacks when trying new approaches. In the medical profession—potentially the hardest hit by the pandemic—some have reinvigorated, or begun anew, creative activities, and passions to boost their resilience (Farris, 2021). Creative work in the arts, specifically, has a long history of therapeutic application. For instance, research found that drawing with a distraction object (e.g., draw a house) improved the mood better for children than if they were asked to express themselves through drawing (Drake, 2021). Forgeard et al. (2021) found improvements in the mood, general self-efficacy, mindfulness, and social connectedness, among other factors, for adult participants from a partial hospital program who experienced a 50-min unstructured art-making activity in a clinical setting. A unique program to develop teachers' resilience, called BRiTE (Building Resilience in Teacher Education), provides a strong foundation for developing teacher understanding and skills in resilience (Mansfield et al., 2021). Other scholars and practitioners have built from that foundational work and incorporated arts-based methodologies to enhance teacher reflection. This previous work suggests that arts-based methods toward creative development could enhance teacher resilience to stress and provide new pathways for joy and wellbeing in their work—the focus of this current study.

Professional Development for Creative Engagement

Teacher creativity in teacher preparation and PD has largely been ignored by the education research community (Katz-Buonincontro and Anderson, 2018; Anderson et al., 2022; Bereczki and Kárpáti, 2018). The high levels of uncertainty and stress teachers have faced and the demand on their creativity during this pandemic have been noteworthy. The circumstances have revealed a depth of creative resourcefulness and ingenuity teachers bring to their work. However, the role of creativity in teacher's professional efficacy and perseverance requires more conceptual and empirical development and research. The proposed concept of creative agency in teaching can help fill this gap and complements the social-psychological perspective of creative engagement in learning. Creative engagement links the need for autonomy, belonging, and competency to the need for creative meaning-making in the learning process (Anderson, 2018; Anderson et al., 2020). Teachers need to develop the necessary agency to be creative (i.e., the values, mindsets, self-beliefs, and affects toward creativity) and their understanding of how and why conditions for creative engagement must be established in the classroom. Therefore, teacher PD should focus on modeling these conditions for teachers' own creative engagement and skill development to strategically integrate creative opportunities for their students. This kind of experiential modeling is best practice in adult training (Salas et al., 2012). By experiencing those conditions as learners, educators cannot only understand the process of setting these conditions, but also feel and recognize the importance of having these conditions established as a foundation for learning and creative development.

As documented in previous research (Anderson et al., 2021, 2022), this approach to teachers' creative engagement should focus first on understanding the creative process and reflecting on one's own unique approach, and second on experiencing introductory routines and strategies within different modalities that naturally incorporate the creative process. By starting with routines then moving onto more demanding instructional design, teachers' can experience small successes themselves on a path toward creative agency to establish inclusive learning conditions for students.

Present Study

This study applies the underlying framework to the makeSPACE PD process for teachers, using a hybrid experience that blends online asynchronous learning with virtual synchronous training within a community of practice. A concurrent mixed method approach (Creswell and Plano-Clark, 2018) tests the framework by analyzing close-ended survey scales along with open-ended survey responses. The purpose of analyzing both types of items was to examine change across time in factors of interest

and contextualize the quantitative findings through teachers' descriptions of how the makeSPACE PD experience affected their teaching during the pandemic. The following research questions guided this study:

1. To what extent did teachers' creative mindset, self-efficacy, empathy, and anxiety change before and after the PD experience (quantitative)?
2. To what extent did teachers' wellbeing factors of joy, resilience, general affect in teaching, and STS change before and after the PD experience (quantitative)? If STS appeared to decrease, which subfactor had the strongest effect size?
3. How do teachers describe the effect of the PD experience on preparing them to deal with the COVID-19 pandemic (qualitative)?
4. How do teachers describe their creative strengths as teachers (qualitative)?
5. How do teachers report dealing with the stress of the pandemic and supporting their students through this disruption (qualitative)?

MATERIALS AND METHODS

Participants

Participating teachers in this study ($N = 53$) enrolled in a blended arts integration for creative engagement PD experience based on broad dissemination efforts to schools and districts across Oregon and California. The demographics included $n = 2$ teachers identifying as Hispanic, $n = 51$ teachers identifying as white. In the sample, $n = 36$ teachers identified as female, $n = 16$ as male, and $n = 1$ as gender queer. Teachers came from more than 30 schools, every content area, and all levels of K-12. The mean for number of years teaching was 14.25 years, the median was 13, and the modes were 6 and 8 years of teaching. Nineteen percent of teachers were novice teachers with less than 5 years of teaching experience and 45% of teachers had less than 10 years of experience. These schools represented mostly rural regions that ranged in size and extent of remoteness and diversity of socioeconomic factors, such as race, ethnicity, and economic privilege.

Measures

We used an explanatory concurrent mixed method design (Creswell and Plano-Clark, 2018) with two phases. Phase 1 focused on quantitative analyses from within-subjects analysis of variance between pre- and post-training teacher survey data. Phase 2 analyzed teachers open-ended responses in the post-program survey to understand the effects from Phase 1. Phase 1 quantitative analyses included teachers' pre-program survey data completed by teachers when they began their professional development experience and post-program survey data completed after finishing the final modules of the online 18-h asynchronous Foundation Course. Approximately half of the sample completed a 14-h synchronous virtual Summer Institute during the program period as well. Phase 2 qualitative analyses included teachers open-ended responses in the post-program survey using a thematic analysis to identify patterns and seek an explanatory understanding of any effects revealed in Phase 1 analyses.

Pre- and Post-survey Scales

The teacher survey was completed during initial login to the online platform and after completing the course. Teachers were asked to complete the survey by choosing one response to each question. For most constructs, response options were on a six-part Likert scale (i.e., 1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly agree, 5 = Agree, 6 = Strongly agree). Teachers were provided with the following definition of creativity so that there was more consistency in how teachers would interpret the questions: *While there are several ideas about the definition of creativity, creativity generally is the ability to derive novel, high-quality, and relevant ideas, products, or services. Before responding to the following questions, please think about your teaching practice and reflect on what creativity means to you and your students.* All survey items are included in **Supplementary Appendix**.

Affect and Wellbeing

This study used or adapted measures validated in past research to study perceptions, beliefs, and experiences related to psychological, affective, and creative phenomena (see **Supplementary Appendix** for complete protocol). We adapted the prompt for the Secondary Traumatic Stress Scale (STSS) from Bride et al. (2004) to focus on the teaching context during the past term of school, using an average score that included the subscales of *intrusion, avoidance,* and *arousal*; a sample STSS item was "*It seemed as if I was reliving the trauma(s) experienced by my students."* The STSS items were measured on a 1–5 modified frequency scale where 1 = Never and 5 = Very Often (see **Supplementary Appendix** for all items). We assessed teachers' joy in teaching using the dispositional joy scale with slight adaptations to be directed at teachers (Watkins et al., 2017). For instance, one sample item was "*Many things about being a teacher bring me delight."* As a proxy for everyday resilience in teaching, we modified the Academic Buoyancy Scale, developed by Martin and Marsh (2008) to focus specifically on the experience of setbacks typical to teachers (e.g., *I don't let teaching stress get on top of me)*. To assess the general psychological wellbeing of teachers, we used the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). We adapted the prompt to fit the teaching context: "*Indicate to what extent you have felt this way generally in your work as a teacher this past year (e.g., interested, distressed, excited, etc.).*"

Creative Agency for Teaching

We used the Creative Self-Efficacy in Teaching scale and the Self-efficacy for Arts Integration scale from past research with similar samples (e.g., Anderson et al., 2021). Four subconstructs of creative mindsets were measured with four items each: (a) General-theory fixed creative mindset thinking about students; (b) General-theory growth creative mindset about students; (c) Self-theory fixed creative mindset about self; and (d) Self-theory growth creative mindset about self. In implicit theory research,

scholars have made important distinctions between the fixed and growth beliefs individuals carry about themselves vs. fixed and growth beliefs about others (De Castella and Byrne, 2015). Those scales and four items for value of creativity for students, have been used in past research with similar samples (Hass et al., 2016; Anderson et al., 2022). Teachers' empathy of creative risk-taking adapted nine items from the cognitive empathy dimension of the Basic Empathy Scale for adults (Carré et al., 2013). Teachers were first given this prompt: *Think about when your students are facing uncertainty in the learning process that demands their creative thinking and attitude*. Two sample items were "I can usually work out quickly when a student is nervous" and "I find it hard to know when my students are frightened to do something that feels risky in class" (counter-indicative). Creative anxiety was measured with four items from the Creative Anxiety Scale (Daker et al., 2019) on a 1–5 frequency scale in line with the STSS. Environmental support for creativity was assessed using 4 items from an extant scale used in past research (Anderson and Pitts, 2017; Anderson et al., 2021). A sample item was "My administration encourages me to foster innovative thinking in my students."

Open-Ended Questions

Teachers responded in paragraph form to open-ended questions in the post-survey, including (a) *how has the makeSPACE experience prepared you to deal with the most important challenges you are facing for the 2020–21 school year? Be as specific as possible;* (b) *What do you feel are your greatest creative strengths as a teacher?* (c) *How are you dealing with the stress of the COVID-19 pandemic and distance learning? How do you plan to support your students through the stress of the pandemic?*

Procedures

Recruitment

The recruitment efforts took place during the April–June 2020 period when schools were shut down due to the COVID-19 pandemic. As such, the sample of teachers who selected to participate were likely already interested and invested in creativity and the arts. Eligibility to participate in the grant-funded project was based on federal requirements (i.e., at least 20% of families with school-aged children in the district lived in poverty).

Professional Development

The makeSPACE Foundation Course for Creative Engagement and the virtual Summer Institute provided teachers a research-based understanding of creativity in teaching and learning through reflective, experiential, and arts integrated instruction and application. Teachers learned and applied a variety of teaching techniques to integrate creative and artistic processes into their instruction and curriculum, starting with brief creative routines. The guiding design principles included making the PD experience: (a) highly engaging and interactive; (b) grounded in current theory and research; (c) scaffolded in challenge and complexity; (d) immediately actionable, adaptable, and relevant to different classroom contexts; and (e) consistently integrated with creative and artistic opportunities and exchange of creative work with peers online. Participating teachers consented to participate in all research activities and agreed to complete the online course material and attend the Summer Institute to receive payment for their time.

Online Learning Materials

The online Foundation Course (depicted in **Figures 2**, **3**) was made up of 12 modules with 1–9 brief lessons per module, taking approximately 18 h to complete in total. Modules included interactive instructional packages with video, narrated slideshows, pop-up interactives, creative exercises, reflective processes, and brief creative assignments. All content was designed, written, and narrated by professional instructional designers with expertise in creativity in education and arts integration. Teachers logged into the online platform and completed the pre-course survey with open-ended and close-ended items prior to starting the course. Project partners sent each participant a sketch journal and a small pack of *metaphor cards* to use in the course, where each card has a clip art image of a common object or scene. **Table 1** describes the focus of the modules and lessons; teachers were required to complete each module to proceed to the next. The course was designed to support teachers with useful mental models, language, examples, and routines for exploring the creative process in teaching and learning. For instance, teachers explored their own personal creative resources (Anderson, 2020)—creative attitudes, creative thinking, and creative behaviors, responding to the question—*How am I creative?*—and creating a metaphorical *creative avatar* collage in their journal (see **Supplementary Appendix** for examples). They photographed their work and uploaded it to the course to share with colleagues and facilitators.

The course content summarized the state of research in education, motivation, creativity, and the arts and applied that research and theory to both personal reflection and immediate integration into teaching and learning. Throughout the course, participants were asked to experiment with key concepts and practices, such as structured uncertainty, metaphorical thinking, divergent idea production, and active reflection. Teachers were prompted to consider their journey through the Foundation Course as if it were a river journey, illustrating how metaphors can be a gateway into creative thinking and meaning-making. For instance, early in the course, teachers were presented with the scenario that they had just begun their river journey only to realize they had forgotten sunscreen. They would need to come up with solutions for how to protect themselves from the hot sun overhead. Participants were encouraged to think of divergent and unusual ideas. Throughout the course, teachers were asked to reflect on their process and the emotions they experienced using different modalities (e.g., writing, sculptural, and gestural). Teachers were able to download protocols to integrate and expand the creative and reflective prompts and routines into their classrooms and content.

Virtual Summer Institute

The 2-day virtual Summer Institute was hosted on Zoom videoconference software and through the learning management system where the foundation course was accessed. The experience

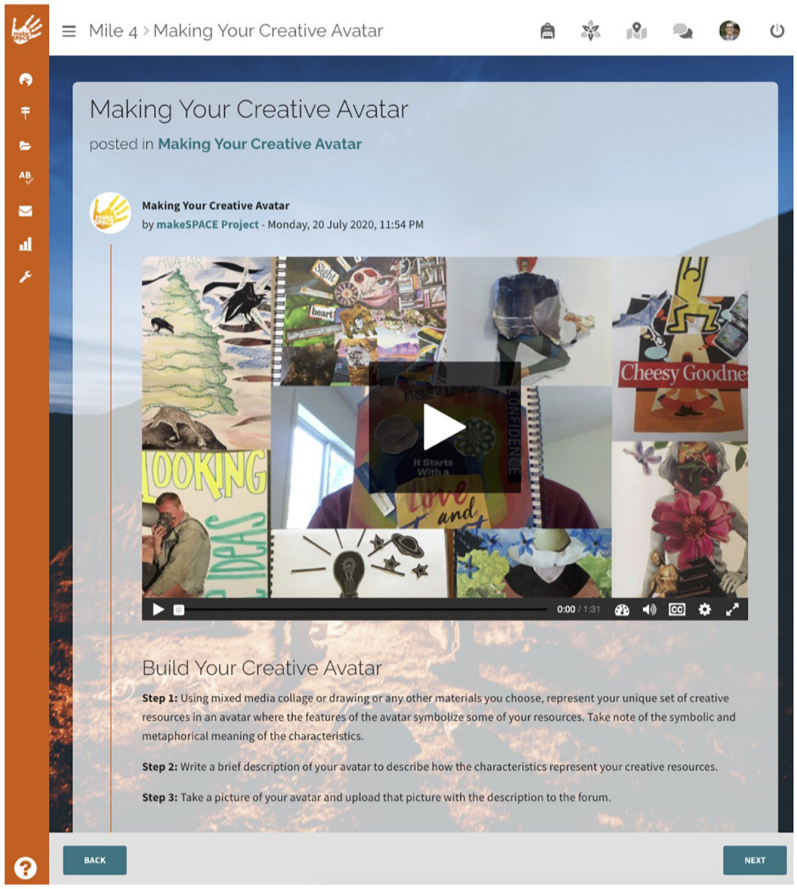

FIGURE 2 | Sample creative and artistic exercise in the online professional development course in creativity and arts integration showing the activity prompt and sharing function.

provided synchronous presentations from facilitators and pre-recorded presentations that participants watched and reflected on through a discussion forum. All participants had access to those discussion forums and could read and respond to their peers' posts. The synchronous and asynchronous activities were hands-on and integrated different creative routines, active reflections, and arts integration strategies that the foundation course introduced. **Figure 4** provides a timeline of participant recruitment, course engagement and completion, and assessments.

Mixed Method Data Analysis

Quantitative Analysis

We used within-subjects analysis of variance (Pedhazur and Schmeklin, 1991) to respond to Research Questions 1 and 2. We report effect sizes, statistics, and Cronbach's alpha internal consistency in **Table 2**. Our study was limited by not having a comparison group; as such, effect sizes would be an important indicator of the robustness of changes detected. We included the within-subject effect size Cohen's d for each statistically significant change detected, where $d = 0.20$ is small, $d = 0.50$ is medium, and $d = 0.80$ is large (Cohen, 1992). We report statistics and Cronbach's alpha internal consistency in **Table 3**. We completed thematic analyses of teachers' open-ended post-training survey responses to address Research Questions 3–5 and understand how those results complemented or contrasted with quantitative findings.

Qualitative Analyses

Well-organized data is key for locating, retrieving, identifying and coding data (Hatch, 2002). In this study, teacher responses to open-ended surveys were compiled in an excel spreadsheet. All teachers provided complete responses to the three open-ended questions. Each response was read and reviewed by three research team members. Typical to mixed methods studies using concurrent designs, responses were coded according to the concepts that were measured in the survey (Creswell and Plano-Clark, 2018). That is, the codes were (a) creative agency, (b) joy, (c) stress management, (d) teaching for creativity, and (e) creative thinking for coding of responses to the questions regarding teacher preparation from the PD and stress management. The codes used for responses to the question about creative strengths included each of the creative agency factors included in **Table 2**. Teacher comments were viewed without identifying names

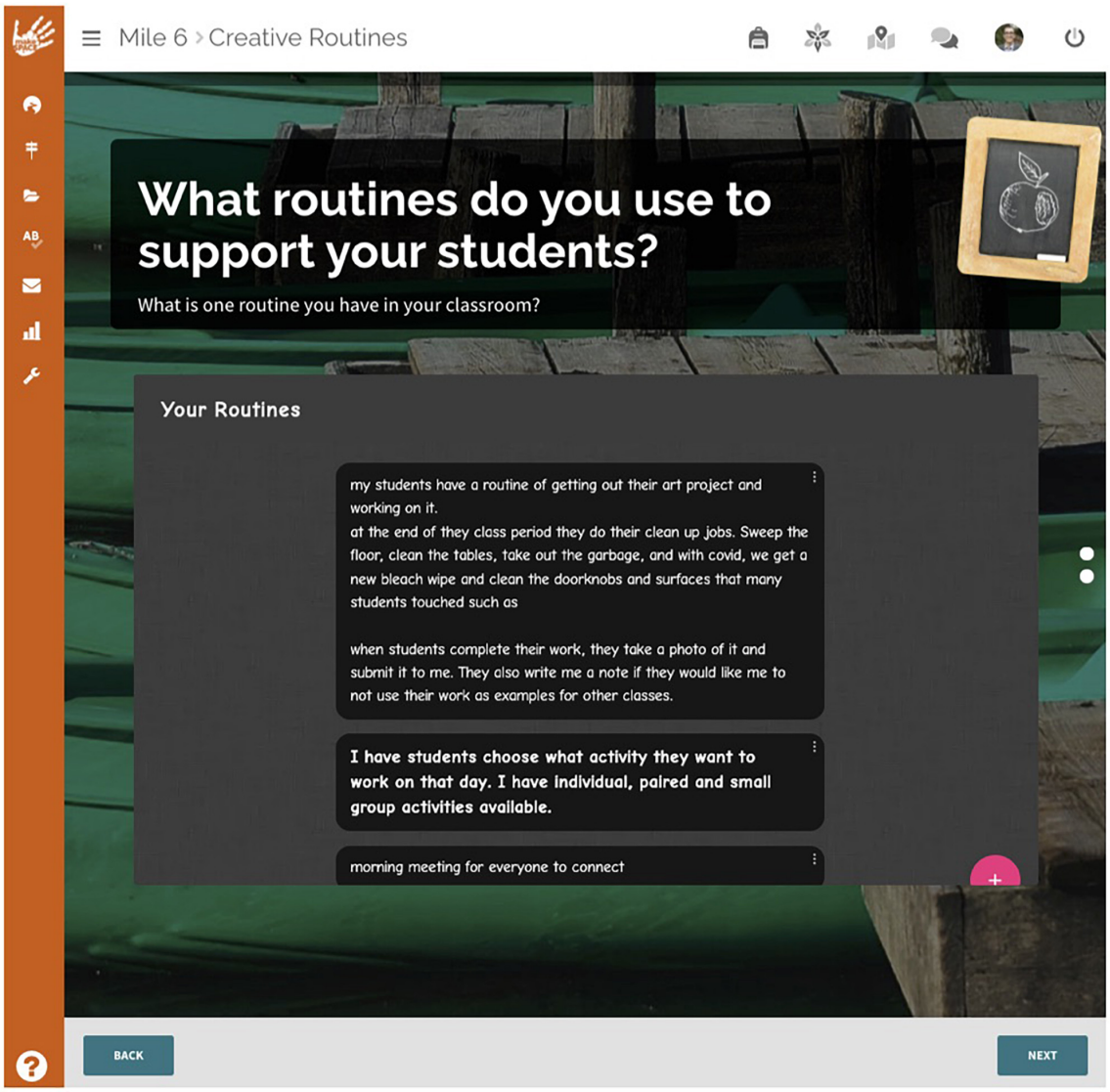

FIGURE 3 | Sample interactive page from online professional development course in creativity and arts integration showing a prompt for teachers to share the routines they use in their classroom.

or information to ensure anonymity. A multi-stage coding process was used to ensure comprehensive coding and structural coherence (Krefting, 1991).

Authenticity

Authenticity, or truthfulness, is an indicator of validity in qualitative research. Given the breadth of responses, and their uniqueness, we interpreted this as a sign of authenticity or validity (Maxwell, 2013). Teachers were encouraged to express themselves authentically in the course and share experiences during the institute, which was palpable in the comments provided in the survey. For example, teachers discussed ways that they were vulnerable in disclosing their weaknesses (like overeating) or relating to students (asking them to describe their anxiety due to COVID-19 each day). In this way, the course fostered conditions conducive to authenticity that resulted in the richness of open-ended responses and indicated a level of trust, rapport, and psychological safety, key to validity. In addition, we attempted to disclose discrepant responses, such as the fixed creative mindset response that ran contrary to the majority of growth creative mindset responses.

Reliability

Coding was conducted collaboratively in multiple rounds to ensure accuracy (Miles et al., 2014). First, the research team discussed the codes, then a member of the team applied the codes. Next, the research team engaged in debriefing and reviewed the first round of coding to discuss the correspondence of the codes to the comments/responses. Adjustments were made to account more holistically for the variety of responses, including the

TABLE 1 | Scope and sequence for makeSPACE foundation course for creative engagement in arts integration—The river journey (metaphor used across the course).

Welcome and orientation	
Mile 1	Lessons: makeSPACE for creativity; Introducing the creative resources
What is creativity? How am I creative?	
Mile 2	Lessons: Creativity through the lens of ourselves and others; Stories of creative risk-taking and growth with arts integration in the classroom; Reflecting on the development of personal creative resources
Mile 3	Lessons: Teachers as artists of pedagogy
Mile 4	Lessons: How are you creative? Creative resources as teaching tools; Making your creative avatar
How do I makeSPACE for creativity?	
Mile 5	Lessons: Conditions for creative engagement; Flow stories; Meaning-making through creative engagement; Patterns; Cultivating conditions and planning for creative engagement
Mile 6	Lessons: Creative routines; Routines and intentions; Why creative routines? Vocabulary gesture reflection; Many uses game and reflection; 10-min routines; Implementation idea; Choose a routine
What is arts integration?	
Mile 7	Lessons: Role of artistic practice; Skills and sensibilities; Art is a verb! Learning through the arts; Treasure hunt; Still life
Mile 8	Lessons: What is arts integration? Tools for integration
How do I begin to integrate?	
Mile 9	Lessons: Arts integration: How? Refining intentions and review; Designing for quality arts integration; When you integrate the arts. . . ; Core practices; Share your avatar; Which routine did you practice?
Mile 10	Lessons: Metaphorical thinking; Metaphor hunting; A metaphor for the self; Metaphor gestures and homework
Mile 11	Lessons: Reflective practices; Why reflection? Your selfie; Reflective routines; Metaphor card reflection; Opportunities to reflect; Notice. . . ; Share your reflections
Final stretch	
Mile 12	Lessons: Braided channel; Portage; Entering the delta; Share the experience you designed; The take-out; Congratulations

addition of the code "no effect" to identify teachers who expressed that the PD was not relevant or effective for them. Then, a second round of coding occurred. Finally, the codes were reviewed by another team member. In the final phase, the comments were copied and pasted from the excel spreadsheet and organized by individual code under each open-ended question in a word document. The codes were then synthesized and described in a narrative manner to account for them comprehensively. *In vivo* expressions were selected based on exemplifying the codes. In some cases, multiple themes that emerged were organized in a table to help illustrate the broad representation of perspectives provided by teachers.

RESULTS

Overall, results mostly supported the theoretical framework linking reduced stress and enhanced wellbeing with increased creative agency as a result of the blended makeSPACE PD. No change from pre- to post-survey was detected in general positive or negative affect and creative anxiety. Change was detected in all other aspects of creative agency and wellbeing. Ninety-six percent of teachers, or 51 out of 53, responded with positive reflections about how the PD experience enhanced their capacity to manage the challenges of the pandemic. The range of responses illustrated how teachers personalized the experience to support them best.

Quantitative Results for Teachers' Creative Agency

All measured factors of teachers' creative agency improved (see **Table 2** for statistics), except for creative anxiety. Creative self-efficacy in teaching increased at a large effect size, $F(1, 52) = 24.76$, $p < 0.05$. Self-efficacy for arts integration increased at a very large effect size, $F(1, 53) = 93.30$, $p < 0.05$. Fixed creative mindset about oneself (self-theory) decreased at a medium effect size, $F(1, 52) = 8.25$, $p < 0.05$. Fixed creative mindsets about students (general theory) decreased at medium-to-large effect size, $F(1, 53) = 15.48$, $p < 0.05$. Teachers growth creative mindset about themselves increased at a medium effect size, $F(1, 53) = 13.88$, $p < 0.05$. Growth creative mindset about students increased at a large effect size, $F(1, 53) = 23.30$, $p < 0.05$. Teachers' perceived value of creativity for students increased at a medium effect size, $F(1, 53) = 14.43$, $p < 0.05$. Creative anxiety did not change at a statistically significant level. Cognitive empathy for creative risk-taking increased at a medium effect size, $F(1, 52) = 14.70$, $p < 0.05$. Teachers' perceived environmental support for creativity in their school increased at a small-to-medium effect size $F(1, 52) = 4.37$, $p < 0.05$.

Quantitative Results for Teacher Wellbeing

General positive and negative affect did not change at a statistically significant level, but other factors of teacher wellbeing did appear to improve (see **Table 3** for statistics). Teachers' secondary traumatic stress decreased at a small-to-medium effect size, $F(1, 52) = 9.76$, $p < 0.05$. Dispositional joy of teachers increased at a medium effect size, $F(1, 52) = 29.15$, $p < 0.05$. Teachers' resilience increased at a small effect size, $F(1, 52) = 5.16$, $p < 0.05$. Within teachers' STS, the subfactor of avoidance demonstrated the largest decrease at a medium effect size, $F(1, 52) = 12.67$, $p < 0.05$. The subfactor of intrusion demonstrated a small-to-medium effect size decrease at $F(1, 52) = 7.39$, $p < 0.05$. The subfactor of arousal did not change at a statistically significant level, though appeared to reach a small effect size decrease.

Descriptive Qualitative Results About Teacher Experience

The qualitative results are reported according to each open-ended survey question in terms of how they perceived the professional development experience, coping with the stress of the pandemic and teaching, and their creative strengths and definitions of creativity. To bring the data to life, we reported the results with a "lush" level of detail, appropriate for qualitative writing (Tracy, 2013).

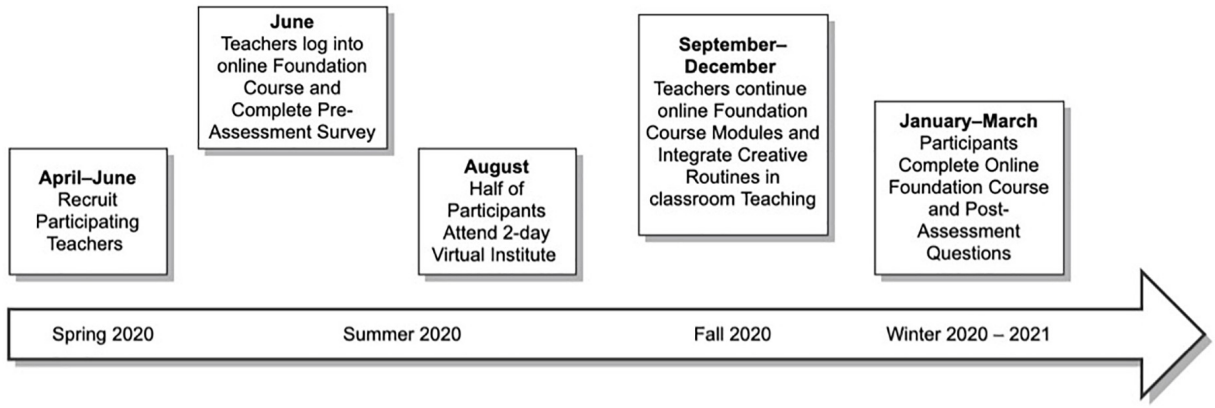

FIGURE 4 | Timeline of participant recruitment, course engagement and completion, and assessments.

TABLE 2 | Results of within-teacher ANOVA for perceptions, beliefs, and affect related to creative agency in teaching.

Teacher perceptions	Period	∝	Mean (SD)	*p*-value	Cohen's *d*
Creative self-efficacy in teaching	Pre-test	0.79	4.33 (0.65)	0.000	0.81
	Post-test	0.75	4.80 (0.51)*		
Self-efficacy for arts integration	Pre-test	0.90	2.87 (1.19)	0.000	1.74
	Post-test	0.85	4.55 (0.70)*		
Fixed creative mindset about students	Pre-test	0.77	1.40 (0.47)	0.000	0.69
	Post-test	0.81	1.14 (0.27)*		
Growth creative mindset about students	Pre-test	0.83	5.20 (0.66)	0.000	0.79
	Post-test	0.80	5.66 (0.49)*		
Fixed creative mindset about self (teachers)	Pre-test	0.88	1.74 (0.78)	0.003	0.47
	Post-test	0.86	1.48 (0.55)*		
Growth creative mindset about self (teachers)	Pre-test	0.93	5.40 (0.66)	0.003	0.58
	Post-test	0.83	5.72 (0.41)*		
Value of creativity for students	Pre-test	0.86	4.96 (0.74)	0.001	0.59
	Post-test	0.85	5.35 (0.57)*		
Creative anxiety	Pre-test	0.83	2.15 (0.73)	0.54	0.05
	Post-test	0.86	2.23 (0.79)		
Cognitive empathy for creative risk-taking	Pre-test	0.74	4.62 (0.51)	0.000	0.47
	Post-test	0.82	4.86 (0.52)*		
Environmental support for creativity (school)	Pre-test	0.82	3.88 (0.91)	0.042	0.27
	Post-test	0.82	4.12 (0.90)*		

**Denotes statistical significance between pre-test and post-test at $p < 0.05$ or lower. ∝ denotes Cronbach's alpha internal consistency. Effect size index: d = 0.20 is small, d = 0.50 is medium, and d = 0.80 is large (Cohen, 1992).*

From Dry to Engaging Curriculum: The Impact of the Professional Development on Teaching and Life

When asked, "How has the makeSPACE experience prepared you to deal with the most important challenges you are facing for the 2020–2021 school year? Be as specific as possible," teachers described a variety of ways they transformed their courses from dry and rote material to more engaging curriculum. Many discussed how they developed creative agency and referred to the enjoyment gleaned from the online course and virtual institutes, implementing the practices in their life and work, and shifting their perspective on priorities and possibilities in the classroom. **Table 4** illustrates the sub-themes within each code. Overall, teachers emphasized the process of engagement with their students in a new light as a result of their immersion in the PD. For instance, one teacher stated:

> The [PD] experience reminded me that standards live in the backseat, teachers sit in the passenger seat, and students sit in the driver's seat. The experience has given me the confidence to try creative practices daily and to give students more choice in their own learning.

Learning from mistakes and being "open to try new things" was mentioned as a way to take risks and grow—a foundation of teacher creativity. Making stronger connections to students was also central. In turn, many teachers indicated that the combination of transforming their curriculum and building

TABLE 3 | Results of within-teacher ANOVA for aspects of teacher wellbeing.

Teacher perceptions	Period	∝	Mean (*SD*)	*p*-value	Cohen's *d*
Positive affect in teaching	Pre-test	0.88	3.74 (0.64)	0.258	0.15
	Post-test	0.86	3.64 (0.66)		
Negative affect in teaching	Pre-test	0.84	2.48 (0.82)	0.751	0.04
	Post-test	0.86	2.45 (0.78)		
Buoyancy in teaching	Pre-test	0.93	3.83 (1.02)	0.027	0.26
	Post-test	0.90	4.08 (0.89)*		
Dispositional joy	Pre-test	0.93	4.38 (0.86)	0.000	0.58
	Post-test	0.92	4.80 (0.72)*		
Secondary traumatic stress (STS)	Pre-test	0.93	2.51 (0.85)	0.007	0.39
	Post-test	0.87	2.22 (0.62)*		
STS intrusion sub-factor	Pre-test	0.81	2.54 (0.92)	0.009	0.33
	Post-test	0.61	2.27 (0.65)*		
STS avoidance sub-factor	Pre-test	0.78	2.40 (0.83)	0.001	0.44
	Post-test	0.75	2.07 (0.66)*		
STS arousal sub-factor	Pre-test	0.89	2.62 (1.03)	0.072	0.24
	Post-test	0.76	2.40 (0.82)		

**Denotes statistical significance between pre-test and post-test at $p < 0.05$ or lower. ∝ denotes Cronbach's alpha internal consistency. Effect size index: d = 0.20 is small, d = 0.50 is medium, and d = 0.80 is large (Cohen, 1992).*

TABLE 4 | Emergent sub-themes about teachers' preparation from PD experience.

Code	Sub-theme	Representative quotes
Creative agency	Confidence to try new things and take risks Not worrying about mistakes Opened my mind To be real with students Challenged me to connect with students Pushed out of comfort zone Pushed me to be creative with solutions Getting creative ideas from others	*"Honestly, the tools gained from the class give me confidence to try new things. I'm an old dog and needed some new tactics to support learning of all kids in my classroom."* *"I love the fact that I can help them express their thoughts without having to come up with the words."* *"It has helped me feel re-invigorated to create interesting lessons when I would have otherwise felt in a rut."*
Joy	Finding joy in trying new things Make time for passion projects Connecting with students through metaphor Collaborating with other teachers Quiet joy doing hands-on creative work Reminded me of what I love most	*"It has encouraged me to make my own creative space wherever it is that I'm working from. . . "* *"I feel like the experience reinvigorated my desire to teach under these circumstances. It seemed pretty hopeless in the spring, and now I feel like I have more tools in my tool belt. . . "*
Stress management	Experience the peace and release of making art Being creative to deal with adversity Slowing down rather than pushing to point of being overwhelmed	*"I am using all of the self care techniques (meditation, journaling, giving myself time to draw) that we used in the course and in the institute."*
Teaching for creativity	Transforming rote curriculum "Shaking up" distance learning experience for students New creative lessons and routines Using reflective practices and metaphor Ideas for how to start the school year	*"I feel much more capable of transforming a dry and rote curriculum into something more engaging through the use of creative activities."* *"This year I have asked my students to be more creative and metaphorical in their learning. I have been promoting risk-taking because, why not, we are in a pandemic anyway!"*
Creative thinking	More to school than simply academics Powerful tools to unpack emotions differently (gesture, sound, imagery) Kids are burnt out and need creativity in daily learning	*"An ongoing challenge in science education. . . is to focus on higher level thinking and less on facts/information. MakeSPACE provided some very concrete ways to engage in higher level thinking that will be manageable through distance learning."*

better relationships with students reinvigorated their teaching practice. Making art and doing creative activities was considered key to good teaching, to integrate education with the arts and creativity, and to finding some peace and release. Different teachers emphasized different benefits; some focused on their own creative development and others reflected on reduced stress and enhanced enjoyment or the benefit of creative learning for their students. As **Table 4** illustrates, a range of multiple sub-themes emerged from each code, suggesting a personalization of the PD experience to suit the unique assets, needs, challenges, and contexts of each teacher.

In addition to the positive comments, two teachers did express a neutral response to the experience: "Honestly, it hasn't' helped in any specific ways. It was a nice time, but not very applicable to

my situation." As well, some teachers remarked that their level of stress due to teaching during the pandemic impacted their ability to see connections between the course and how they will teach in the future. Importantly, those contributions suggest validity that teachers were candid and direct in their responses.

Being "Shelters in the Storm" for Students and Other Approaches to Coping

When asked, "How are you dealing with the stress of the COVID-19 pandemic and distance learning? How do you plan to support your students through the stress of the pandemic and distance learning?" teachers discussed both positive and negative responses while maintaining a realistic approach and pointing toward types of activities to reduce stress.

Being "shelters in the storm" and serving as a "reliable presence" was identified as a strategy to cope with the stress of teaching during the pandemic. Several teachers focused on strategies to cultivate a positive and supportive environment for students. For example, teachers mentioned the importance of flexibility and helping students to engage actively in the process of reflecting on achievable goals. Teachers tried to invoke their love of teaching to offset the stressor of coping with the pandemic. Being there for students helped boost their commitment as evidenced in the comment, "I am concentrating on being a reliable presence in my Students' lives." Other teachers saw teaching in the pandemic as an opportunity to emphasize the value of learning: "I am. . .hoping students will look at this with a new vision of being grateful for having school and being with others."

Challenging aspects of teaching online included focusing on the present moment, and not dwelling on the uncertainty of the pandemic and its effects. The difficulty of reacting to constant change was referenced as a barrier to teaching online. The public's eroding trust in science to address the pandemic was also noted by teachers, especially those who had family members considered at high-risk for being vulnerable to the transmission of COVID-19. For example, one teacher stated:

> I find I do not trust the people in charge. I do not trust our leaders to make sane decisions based on science. That stresses me out to no end. However, since I can't control any of that, I have focused on creating fun projects for my art students, and delivering the information in the best possible way. I am adjusting constantly because I am always learning new things on the computer, and learning to be more efficient and creative with the tools.

Activities for coping with these steep challenges included self-care, engaging in creative activities like drawing or knitting, and being physically active. Other habits such as over-eating were mentioned. Family activities were a huge theme for coping with the stress of COVID. Additional time spent with children and family members was perceived as a big benefit of working from home.

Teachers also discussed integrating social-emotional skills into their teaching, like listening to students, using more open communication, being transparent about the COVID crisis and allowing students to express their feelings even if it included discussing personal anxiety. Teachers innovated with how they attempted to encourage students to stick with learning online, like using meditation. For example, one teacher said:

> I mail positive notes home to my students. I also send them little packages with surprise stickers and notes and cut out shapes. I schedule one-on-one Google Meet sessions where I give them all my attention as they read to me. They are unmuted the entire time.

Teachers reported multiple innovations that arose in proactive and agentic support of students to deal with the challenges of the pandemic, especially to connect with students, support them through their stress, and manage their own compassion fatigue.

"Thinking on the Fly" and Other Creative Strengths

In response to the question, "What do you feel are your greatest creative strengths as a teacher?" teachers discussed several topics such as their own creative self-efficacy, creative growth mindset, the value of creativity, shaping an environment for supporting creativity, and actively using empathy with others.

Overall, teachers remarked how creative they felt psychologically in terms of coming up with new ideas such as "thinking on the fly" as a teacher. Teachers emphasized the need to adapt, change and explain concepts in new ways as a chief source of creativity. To one teacher, this included taking divergent ideas and integrating them into a lesson. The concept of making mistakes, and even owning up to them, was part of thinking on the fly. The association of professional growth to creativity revealed an emphasis on a growth creative mindset, "My ability to stretch and adapt to whatever is thrown to me." Pivoting and trying new things also characterized a growth mindset about creativity. Teachers humbly noted that they might not have all the answers, but were willing to let students fail and accept and recognize their own failings as a model. This perspective shows empathy with students' learning process. Notwithstanding the majority of creative growth mindset comments, one teacher did comment they did not think of themselves as amazing but "capable enough to demonstrate" creative projects to students.

In addition to their own creativity, teachers commented on their creativity in integrating the arts into the classroom and developing new projects for students. Although comments about teaching in a creative manner were common, the style and approach to speaking with students was mentioned several times as a feature of teacher creativity. For example, one teacher emphasized "word play" while another teacher included empathy in the way they taught to include creativity. Another teacher exclaimed:

> Everything in teaching takes creativity: making the lessons, delivering the instructions, working with students. Communication takes creativity! How can I deal with this difficult situation with compassion and kindness? That is a question I ask myself each day, many times. It takes creativity to find an answer.

Communicating one's creative ideas to colleagues in addition to students was important to teachers. As a result, empathy-driven relationships were at the core of teacher comments on their creative strengths. Teamwork, collaboration and references to the familial nature of working with co-workers were all important.

Integrating Mixed Method Findings

Quantitative results provided promising evidence for the PD's effectiveness to contribute to the development of teacher creative agency and important aspects of their wellbeing in teaching. The effect sizes were generally substantial in size. Without a comparison group of teachers it was necessary to conduct follow-up analyses to understand if the changes detected could be reasonably attributed, to some degree, to the PD experience. Qualitative findings described teachers' unique creative and agentic development to manage the challenges of the pandemic, reinvigorate enjoyment and engagement in teaching, and shift teachers' perspectives and priorities. Their extensive and personalized responses provide additional confidence that the PD experience contributed to the changes detected in the quantitative results.

DISCUSSION

The results from this study focus attention on two aspects of teacher support and development—creativity and wellbeing—that have not received the attention that conditions of the teaching profession warrant. These aspects of teacher support are especially important in light of the ongoing COVID-19 pandemic and the secondary traumatic stress they inevitably experience. The results provide some promising evidence for the PD approach described to support teachers' creative agency, wellbeing, and actual adaptability in the classroom. Generally, most measured factors in the quantitative analyses demonstrated substantial positive change. The lack of change detected in general positive or negative affect and creative anxiety could have been the result of mounting challenges teachers experienced across the 2020–2021 school year of COVID-19 school shutdown. The improvements in factors of wellbeing are noteworthy given the fact that job-related stress and depression increased for teachers, nationally, at 2–3 times the rate of the general adult population during the timeframe of this study (Steiner and Woo, 2021). The qualitative results added description and detail to the ways teachers applied what they learned in the PD and the role of that experience in remaining positive and proactive during the traumatic disruption of the pandemic for themselves and their students.

Results demonstrated that an online PD experience can support the development of teachers' creative agency in the classroom, replicating some of the results from a pre-pandemic study (Anderson et al., 2022) and adding effects on wellbeing outcomes. Results differed in some ways from that past study, suggesting the sample in this current study may have entered into the program with stronger creative agency. For instance, fixed creative mindsets were substantially lower at the pre-assessment stage and creative anxiety started off lower for this sample of teachers, as well. Though the sample is too small to conduct more sophisticated modeling, results suggest the self-beliefs, mindset, empathy, and affect that form a teachers' creative agency may be a catalyst for enhanced joy and reduced stress during challenging times. These findings are noteworthy given the lack of attention to creativity in the field of teacher preparation and professional development (Anderson et al., 2021), and the impact of STS on teachers working with marginalized students (Hydon et al., 2015).

Connecting Teacher Creativity and Stress Management

The state of teacher engagement, sustainability, and wellbeing was alarming even before the pandemic (American Federation of Teachers, 2017), and has only worsened since. In the two decades leading up to the COVID-19 pandemic, school conditions for teachers across the country set the stage for secondary trauma—high rates of violence experience by students outside of school as well as high rates of violence and bullying inside of schools (Hydon et al., 2015). And yet, attention from the U.S. Department of Education and the education research community is still in its infancy (Lucas, 2007; Alisic, 2012; U.S. Department of Education, Office of Safe and Healthy Students and U.S. Department of Health and Human Services, 2012). The results of this study raise awareness of the state of secondary traumatic stress in teaching and illustrate how teachers' creative agency in this demanding profession may serve as a protective factor.

Follow-up analyses found the biggest decrease in teachers' STS to be in the area of teachers' avoidance. Avoidance subscale items included feeling emotionally numb, discouraged about the future, little interest in being around others, less active, and avoiding students or reminders about work. According to teachers' open-ended responses, their experience in the PD gave them new ways to be creatively active in their non-work life and new ways to make their engagement with students more enjoyable and to deepen relationships. The decrease in intrusive stressful feelings and thoughts may have also been related to teachers' engagement in creative activities inside and outside the classroom. More research to understand this process in depth and across time for different teachers could provide new insights on how to support teachers through their experience of STS and how to optimize the benefits of creative and artistic practice. Perhaps the most important point from the qualitative analyses is the wide range of ways that teachers personalized the PD experience to manage the stress and disruption and support their students best. PD and programming that is overly prescriptive may be less effective and relevant to the varying contexts of teachers' lives and work.

The Social Side of Teachers' Creative Agency

It is possible that supporting teachers' creative agency as a fundamental necessity for their wellbeing can help to address the issue of their sustained engagement in the profession. The late Bandura (2018) conceptualized the personal agency that we develop through our own experience and the proxy agency

we experience vicariously from others as fundamental building-blocks to our motivation and behavior in life. That agency may be just as important for the creative aspect of teachers' professional growth as any of the technical training they receive. As Bandura theorized, agency does not develop and sustain for individuals in isolation from others; developing a sense of agency is a social process (Bandura, 2018). Several teachers felt buoyed by the contributions from and connections with other teachers. Moreover, on average, teachers reported feeling more support for creativity in their school after their PD experience, even though they were largely all teaching their students online, either from empty classrooms or from home. Perhaps the connections they made with others teachers inside and outside their school had a carryover effect.

Based on the integration of mixed method results, teachers in this study appeared to thrive within the professional learning community that formed by teachers taking risks to share their ideas for the integration of creative teaching and learning in the classroom and their own creative and artistic work produced throughout the PD. The course required them to give and receive feedback, often with peers they had never met in person. For instance, they recorded and uploaded video of themselves imagining and sharing gestural metaphor exercises to illustrate their understanding of the theory behind the concept, *creative engagement*. Those scaffolded experiences seemed to develop a stronger creative agency reflected in teachers' average increase in agentic factors and in the variety of qualitative responses provided. The links between teachers creative development and enjoyment of their work is clear within the themes that emerged. This kind of collaborative professional learning experience may have been especially powerful give the intense isolation teachers survived during the 2020–2021 school year. How teacher isolation contributes to teachers' growing demoralization (Santoro, 2019) should be an area of further exploration. Offering more opportunities for playful creativity with colleagues within and across communities should be a focus for future supports in the profession.

Future Directions to Develop Teacher Creativity, Agency, and Wellbeing

Online and blended training has been increasing as a viable method to develop teachers' skill, resilience, and wellbeing in their work across the education field (Fishman et al., 2013). The BRiTE project provides an example specifically focused on teacher resilience using a completely self-paced and individualized online experience. As Mansfield et al. (2021) describe, the BRiTE PD experience uses an online platform to provide teachers new understanding about resilience, how it shapes in people, the kind of personal and interpersonal resources, skills, and choices that support and sustain resilience, optimism, motivation, and engagement in teaching. The BRiTE approach shares many similarities with the online makeSPACE approach, such as personalized pathways, expert tips, interactive activities, simulations and practices, and a toolkit of practices that teachers can retrieve and integrate into their work and life. In fact, the module design principles from both approaches are nearly parallel: (a) personalized, (b) interactive, (c) authentically connected to the profession, and (d) informed by the literature. The commonalities of these two approaches potentially provide the field of education new pathways to consider in reaching the goal of a teacher force that is resilient, creative, and prepared to thrive in the uncertainty and stressors of the post-pandemic world. However, a major difference between the two approaches is in the level of interaction offered with other participants. More research is needed to compare the development of teacher agency in fully self-paced and self-contained online training compared to training experiences in an interactive cohort with others.

The framework of creative agency for teachers centers on the agentic and creative demands of the teaching profession and on the research-based characteristics of learning environments that cultivate students' creative engagement in learning—their autonomy, belonging, creative potential, and sense of competency in school (see Anderson, 2018). If teachers develop creative agency within a supportive school environment, students are more likely to experience the modeling, messaging, and creative learning that will build their own creative adaptiveness and resilience in the face of increasing uncertainty about the future.

Limitations

The results of this study are preliminary given the small sample, the lack of a comparison group, and the extraordinary circumstances of the COVID-19 pandemic. The sample size limits the ability to conduct more complex statistical models, such as mediation of the creative self-beliefs on change in stress. Due to the stress of distance learning and other aspects of the pandemic, some teachers dropped out of the PD early on, indicating they could not fit the additional work into their lives. The lack of a comparison group limits our understanding about where this sample of teachers began and what natural development of creative agency and wellbeing may have happened during the pandemic. The fact that stress reduced and joy and resilience increased for this sample contrasts with the worsening national trends for teachers mentioned earlier during this same timeframe.

CONCLUSION

The framework of creative agency for teachers investigated in this study could provide an important approach to optimize a new pathway for ongoing teacher PD and support during a period of increasing uncertainty and stress in the profession. The accessible and scalable PD approach illustrated in this study provides one example for reaching that goal. Teachers' creative agency may be foundational to sustained adaptability, wellbeing, and commitment in this valuable profession, especially amidst the disruption of global pandemics, violent natural disasters, and mounting political conflict. Adaptable teachers embodying and modeling creative agency is likely a key factor for the development of these important strengths to prepare students to be agentic in their own futures.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the IntegReview. The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

RA led the design and development of the study, the theoretical framework development, and all aspects of writing, including contributions in the qualitative analysis, and write-up. JK-B led the qualitative analysis and write-up and review and revision of the entire draft. ML, JL, and NB led the development of the professional development program in alignment to the theoretical framework. TB contributed to the research design and the larger study development. GS contributed to the organization and implementation of the qualitative analyses. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2022.848005/full#supplementary-material

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The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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