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Teacher Professional Learning in a Writing-as-Making MOOC

Cover Page Footnote

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Teacher Professional Learning in a Writing-as-Making MOOC

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Despite the importance of writing in the lives of 21st century citizens (Brandt, 2015), a large majority of teachers feel unprepared to teach students how to write well (Cutler & Graham, 2008; Gilbert & Graham, 2010; Kiuvara, Graham, & Hawken, 2009). Teaching writing is particularly challenging in an age of digital texts because the types of writing taught and assessed in school often look quite different from those that youth compose and share in their daily lives (Leu, Slomp, Zawilinski, & Corrigan, 2016; Vaughan, 2019). Researchers who study both digital (e.g. Williams & Beam, 2019) and traditional (e.g. Gilbert & Graham, 2010) writing instruction, as well as those who study writing teacher preparation (e.g. Brenner & McQuirk, 2019), have called for more opportunities for teachers to learn about writing pedagogy.

Noting the lack of preparation for writing that occurs in teacher education programs, Brindle and colleagues (2016) argued that states, districts, and schools must provide professional development (PD) for inservice teachers. However, creating meaningful, effective opportunities for teachers to learn how to teach writing is challenging. Even carefully designed PD programs do not always lead to their intended outcomes (Hill, Beisiegel, & Jacob, 2013), and researchers have struggled to identify features of PD that consistently lead to effective teacher learning and improved student outcomes (Kennedy, 2016). In addition, preparing teachers to teach digital composing may present a particular challenge. While preservice teachers communicate digitally in their personal lives, they are often committed to traditional forms of composing in the ELA classroom (Hundley & Holbrook, 2013). Furthermore, many inservice teachers feel unsure about how to meaningfully integrate technology into the writing process (Williams & Beam,

2019). Thus, research is needed that examines how to design opportunities for teachers to learn about digital writing instruction.

The purpose of this study was to investigate (1) the design of a Massive Open Online Collaboration (MOOC) about how to teach digital writing and (2) teachers' experiences in the MOOC. Our goal was to create a learning environment that supported teachers' digital composing and their reflection on how to integrate digital writing into their classrooms. While many factors likely contribute to a successful online learning experience for writing teachers, this article focuses on two characteristics—ownership of the writing/learning process and willingness to take risks—that are theorized as necessary when creating digital compositions. Ownership and risk-taking, though often included in descriptions of effective learning opportunities for writing teachers, have not been well-studied in writing teacher education. This study sought to fill that gap by specifically examining how teachers took ownership of their learning and writing and how they engaged in risk-taking as they learned about digital writing instruction.

RELATED LITERATURE

DIGITAL COMPOSING: WRITING-AS-MAKING

Technology can be used during writing in many different ways, which makes it challenging to clearly define what counts as digital composing (Bouchardon, 2017). Most writers use technology to produce even traditional, print-based texts such as academic papers, work-related reports, and correspondence. While digital tools make creating and distributing these texts easier, such writing could be—and in the past has been—produced by hand. Other texts, though, rely on digital technology for their existence. Hypertext, interactive texts, and many collaborative texts cannot be created or exist outside the digital realm. Texts that include video and animation, once created only by highly trained individuals with expensive equipment, are now easily produced by average people using digital tools. In addition, some composing processes, such as hacking and remixing (Hatch, 2013), have arisen because digital tools make it easy to manipulate and integrate text, images, and audio. Thus, while technology can contribute to writing in a variety of ways, some texts and processes are arguably more dependent on digital tools than others.

Because digital composing can include a variety of texts and processes, it is difficult to make sweeping statements about the digital writing that occurs in K-12 schools. In a recent review of technology use during writing instruction, Williams & Beam (2019) found that teachers engage students in a range of digital writing practices: using word processing or internet research to produce fairly traditional texts; using apps to plan, draft, revise, or publish drafts; and creating multimodal

texts such as digital stories, online comics, video, and animation. Galvin and Greenhow (2019) reviewed 14 studies in which students used social media to either create a summative piece of writing or to engage in a part of the writing process. Students in these studies wrote blogs, digital storyboards, and wikis, and they collaborated in online spaces to help one another plan, organize, revise, or edit their writing. Of course, these reviews included only published research studies, which are not necessarily indicative of the writing that occurs in most classrooms. One national survey (Vega & Robb, 2019) found that only 25% of high school students report using digital creation tools during instruction, which suggests that multimodal composing is not widespread in schools.

Even as schools may struggle to include digital composing in the curriculum, digital writing in out-of-school spaces continues to evolve. The Maker Movement, broadly defined as a “growing number of people who are engaged in the creative production of artifacts in their daily lives and who find physical and digital forums to share their processes and products with others” (Halverson & Sheridan, 2014, p. 496), has influenced how scholars and educators think about “writing.” Cantrill and Oh (2016) argue that writing has always entailed making, from the creation of written words and images to the creation of physical artifacts such as books. They identify many parallels between writing and making physical or digital objects. Both writers and makers engage in *tinkering*, the recursive process of designing, failing, and revising based on what was learned. Both *prototype* ideas that may or may not become a final product and persist in their work as they envision next steps, design, and reflect on their designs. Both makers and writers come to deeper understandings of their domain and craft as they participate in *communities of practice* that influence what and how they make/write. Thus, writing and making share many of the same processes and practices.

While traditional writing has much in common with making, the advent of digital tools and spaces has made “writing-as-making” more pervasive and more accessible to more people. The average person can now create digital artifacts and distribute them online without the need for a traditional publisher. Digital tools also allow writers to easily tinker with images, audio, and multimedia in addition to text. Apps facilitate prototyping by making revision a simple, quick process, and numerous apps exist to support writer/makers’ design of and reflection on their products. In addition, online forums allow writer/makers to connect with, engage in, and learn from communities of practice that cross geographical, social, and cultural boundaries.

The maker mindset, first articulated by Hatch (2013) and extended by Baker-Doyle (2017), provides a framework for conceptualizing and exploring writing-as-making. The mindset includes ten key traits: *making* through a design thinking orientation; *sharing* produced artifacts with communities and the public; *giving* produced artifacts for others to use and build upon; *learning* and *tooling up* to

develop mastery over the craft; *playing* via tinkering and learning through failure; *participating* in a community of makers and *supporting* others in their making processes; *changing* society through creating novel artifacts; and *equity*, makers’ opportunity to promote equity and inclusivity through their work. These characteristics of making, which occur when creating physical objects, also occur during digital composing. As digital authors make digital objects, they can share, give, learn and tool up, play, participate in a community, change society, and promote equity through their work. Thus, the maker framework provides a prototype for a writing-as-making framework.

To create a framework to describe writing-as-making, we applied the maker framework’s (Baker-Doyle, 2017; Hatch, 2013) key traits to writing. Because the maker framework describes making physical objects, we tweaked the description of each trait to fit with digital making and expanded the descriptions to include what occurs during digital composing. For example, we extended the maker trait “making through a design thinking orientation” into “writing as creative production, exploring, experimenting, and testing prototypes” to reflect how design thinking occurs during digital writing. We extended the maker trait “sharing produced artifacts with communities and the public” into “writing as sharing ideas, designs, and artifacts with others” to reflect the aspects of digital texts that writers can share. Table 1 shows our “writing-as-making” framework compared to Hatch’s and Baker-Doyle’s maker frameworks.

Table 1
Writing-as-Making & Maker Frameworks

Writing-as-Making Traits	Maker Traits Hatch (2013) & Baker-Doyle (2017)
Making: Writing as creative production, exploring, experimenting, and testing prototypes	Making through a design thinking orientation
Sharing: Writing as sharing ideas, designs, and artifacts with others	Sharing produced artifacts with communities and the public
Giving: Writing as offering text to someone else who elaborates, hacks, or otherwise uses it as the basis for their own composing	Giving produced artifacts for others to use and build upon
Learning: Writing as an opportunity to learn through creating texts, collaborating with others, and exploring ideas and designs	Learning and tooling up to develop mastery over the craft
Tooling up: Writing as a means of developing mastery over the craft of composing	

Playing: Writing as the opportunity to tinker, try new things, fail, and try again	Playing via tinkering and learning through failure
Participating: Writing as participating in a community as writers share their created texts	Participating in a communicating of makers
Supporting: Writing as the opportunity to support others through the design process	Supporting others in their making processes
Changing: Writing as the opportunity to not simply produce something, but to make a difference in the world by creating and sharing innovative, useful texts	Changing society through creating novel artifacts
Equity: Writing as the opportunity to make the world a more inclusive and equitable place by designing texts that challenge and demolish inequities	Equity, makers' opportunity promote equity and inclusivity in their work

As is evident in the framework, a writing-as-making mindset requires an ethos of agency, risk-taking, resiliency, and social support (Cantrill & Oh, 2016). Writer/makers must be willing to try new things, learn from failure, and try again. This requires an attitude of playfulness over performance and the belief that one's efforts will eventually result in a useful innovation. It also requires writer/makers to have enough ownership over their work that they are willing to invest the time and energy needed for cycles of prototyping and redesign. Social interaction is vital to this process because a community of practice helps writer/makers learn new skills and supports them to persevere through and learn from failure. Participation and sharing within a community also mean that when an individual writer/maker's innovation fails, others may use it and what was learned from the failure as part of a different or larger innovation. This social support contributes to writer/makers' risk-taking and resiliency because failures are not wasted effort when the community learns from and builds upon them.

Although the notion of writing-as-making has not been widely adopted in schools, a few educators have begun to describe their efforts to include the maker mindset during writing instruction, often as an alternative to traditional writing or in ways that expand traditional views of literacy (Farmer, 2016; Fontichiaro, 2018; McVerry, Belshaw, & O'Byrne, 2015). Farmer (2016) argues that adding the notion of making to the digital composing process offers numerous benefits for students. First, it highlights the multimodal nature of digital writing in which authors blend the visual, verbal, tactile, and performative to create an object—a meme, a zine, a film—that occupies a digital space. Second, making calls attention to composition features such as craft, design, and format that are often overlooked when writing is viewed as simply words on a page or screen. Third, making emphasizes the myriad

decisions that occur during the digital design/composing process. Finally, making prompts the question “What else gets made?” when we write, which calls attention to how composing creates identities and communities as well as artifacts. Thus, conceptualizing and teaching digital writing as a making process expands students’ understandings about what writing is and what it accomplishes in today’s society.

LEARNING TO TEACH WRITING

While teachers’ lack of preparation for teaching writing is well-documented (e.g. Brenner & McQuirk, 2019; Brindle & Graham, 2016), there is much less evidence about how to design effective opportunities for them to learn about writing instruction, particularly about teaching digital writing. McCarthey and Geoghegan (2016) reviewed the literature on professional learning for writing instruction and found that effective professional development (PD) programs tend to include a focus on content, collective participation, and active engagement—features that align with research on PD programs across content areas. However, these findings come with two caveats. First, many studies did not examine writing instruction as distinct from reading instruction and therefore did not tease out features or practices that might specifically enhance teachers’ learning about writing. Second, other reviews of PD across subject areas have found that program features such as a focus on content, collective participation, and active engagement does not always lead to teacher learning or improved learning for students (Kennedy, 2016; Opfer & Pedder, 2011). As a result, McCarthey & Geoghegan cited the need for more research on PD for writing instruction.

Despite the challenges of identifying characteristics that consistently lead to effective PD, researchers who study PD about writing instruction often cite the National Writing Project (NWP) as a model that leads to teacher learning (Dierking & Fox, 2012; Farrell & SWIFT, 2019), lasting changes in teachers’ writing pedagogy (Dierking & Fox, 2012; Gallagher, Woodworth, & Arshan, 2015; Whitney, 2008; Whitney & Friedrich, 2013), and improved student writing (Gallagher et al., 2015). NWP’s effectiveness is believed to stem from its social practices, which support teacher agency and empowerment, intellectual rigor and risk-taking, and an inquiry stance toward teaching and learning (Lieberman & Wood, 2003). These practices, which emerged as NWP began in the 1970s (Gray, 2000), are remarkably consistent with the social practices that have more recently emerged in the maker community (Hatch, 2013). Both communities value creating, learning, honoring and sharing participants’ knowledge, engaging in a community of practice, supporting others, and working toward positive change. Both have an ethos of agency, ownership, and risk-taking that is necessary for creativity and innovation to flourish.

Given the alignment between NWP and making, it is unsurprising that NWP has been a leader in preparing teachers for digital composing and writing-as-making. From 2013 to 2017, NWP led a Connected Learning Massively Open Online Collaboration (CL-MOOC), an online PD experience in which educators composed, collaborated, and distributed multimedia texts. It was modeled on principles of connected learning (Ito et al., 2013), which theorize meaningful learning as interest-driven, production-centered, peer-supported, academically oriented, openly networked, and with a shared purpose. As Smith, West-Puckett, Cantrill, and Zamora (2016) note, connected learning “reflect[s] the core beliefs and established social principles of NWP educators” [p. 3]. In addition, it also reflects the core beliefs and social practices of writing-as-making.

CL-MOOC (<https://clmooc.com>) invited participants to make, compose, play, learn, and connect through weekly “make cycles” that culminated in the sharing of designed physical and digital multimodal texts (Smith et al., 2016). Make cycles were organized around themes such as “make a meme,” “hack your writing,” and “create a five-image story.” They were designed as open-ended and iterative invitations and were facilitated by NWP teacher-leaders who acted as fellow participants as much as facilitators (West-Puckett, Smith, Cantrill, & Zamora, 2018). Although no one has specifically studied how CL-MOOC impacted participants’ teaching, participants engaged in digital composing and writing-as-making processes (Cantrill & Oh, 2016), including multimodal composing, collaboration and support, sharing artifacts across digital platforms, and remixing to create novel texts (Smith et al., 2016). Thus, CL-MOOC allowed educators to learn about digital tools and how to meaningfully integrate them into the writing process, skills that teachers say they need in order to engage students in digital composing in the classroom (Williams & Beam, 2019).

The MOOC investigated in this study was modeled after NWP’s CL-MOOC, though it added an explicit emphasis on writing-as-making by introducing participants to the writing-as-making framework described in Table 1. Called “write/make Massive Open Online Collaboration” (wmMOOC), it engaged participants in digital writing-as-making with attention to creating the ethos of agency and resiliency that form the foundation of the maker community, NWP, and principles of connected learning. Notably, looking across the literature on the maker movement (Baker-Doyle, 2017; Hatch, 2013), NWP (Lieberman & Wood, 2003), and connected learning (Ito et al., 2013), we found that they all engage participants in similar social practices: creating a supportive community where participants share ideas and improve their practice through asking questions and taking risks; giving participants ownership over their learning by providing choice and offering opportunities for deep engagement and investment; and engaging participants in shared purpose and shared leadership. These practices are theorized as vital to participants’ learning, and wmMOOC incorporated them into its design to create a

learning environment that reflected the ethos and practices of the NWP and maker communities. In this article, due to space limitations, we share findings only about participants' ownership and risk-taking. We chose to focus on these aspects of wmMOOC because, as described below, they are social practices that are assumed to be important for learning but have not been well-studied.

OWNERSHIP IN LEARNING

In literacy education, ownership typically involves providing learners with opportunities to choose what they read and write, and researchers have argued that this choice promotes literacy learning (Dudley-Marling & Searle, 1995). Writing teachers, in particular, advocate for giving students ownership of their writing topics, and freedom to choose topics is often viewed as a component of good writing instruction (Calkins, 1994; Morgan, 2010; Troia, 2014). More recently, as digital writing has entered classrooms, teachers have begun inviting students to choose the modality of their writing (Zucker, 2018) as well as the topic. Thus, ownership and choice are recognized, though little studied, aspects of teaching writing.

Beyond choice during writing instruction, ownership over one's learning process is also important to successful learning experiences more broadly. Dudley-Searle and Marling (1995) contend that "*meaningful* learning will always depend on the degree to which learners are able to make learning their own" (p. vii, emphasis added), a claim that highlights the importance of ownership for the relevant, significant types of learning that NWP and the maker movement seek for their members. Research has shown that students' beliefs about whether they have control within the learning environment contributes to academic success or failure (Bandura, 1997) and that ownership leads to increased motivation, active participation, and student investment that, in turn, lead to deep learning (Dudley-Marling & Searle, 1995; Gross, 1997; Kentish, 1995). Furthermore, adult learners such as teachers may particularly need autonomy and ownership in the learning process because they are able to regulate their own learning effectively, and an instructor's interference may inadvertently stifle their learning (Martin, 1995).

Agency and ownership over learning may be especially important in online environments (Barbera, Garcia, & Maina, 2020), an idea that stems from Moore's (1972) assertion that learner autonomy is a foundational tenet of distance learning. According to Moore, learner autonomy is the opportunity to decide what to learn, how to learn, and how much to learn, and it includes setting one's own learning goals, determining the pace and sequence of the learning, and having flexibility in how one engages in the learning process. Ownership and autonomy are especially relevant in MOOCs where learning is largely self-driven and participants' sense of ownership over their learning sustains their engagement. MOOC participants

identify ownership of learning as an important feature of the course design (Wang, Hall, & Wang, 2019), and creating participant ownership includes instructors giving up some control and distributing facilitation between themselves and the MOOC participants (Blum-Smith, Yurkofsky, & Brennan, 2021). Thus, while ownership over learning appears important in all learning environments, it may be especially important in digital environments such as MOOCs.

RISK-TAKING IN LEARNING

Risk-taking during the learning process, sometimes referred to as intellectual risk-taking (IRT), has been theorized as an important component of successful learning environments, though, like ownership, it has not been extensively studied. Vygotsky (1978) posited that learning occurs only when learners attempt tasks that are slightly beyond their current capabilities. As a result, learning cannot take place unless students engage in IRT because they must be willing to step beyond what they can already do in order to learn something new. Empirical research has shown that IRT facilitates learning and leads students to put more effort into their learning (Clifford, 1991) and that children are more motivated during literacy activities when given opportunities to engage in IRT (Turner, 1995). In digital learning environments, boredom, more than any other affective state, negatively impacts learning, and researchers have suggested increasing the challenge of learning tasks—requiring students to take intellectual risks—as a way to ensure that they remain engaged (Baker, Mello, Rodrigo, & Graesser, 2010). Taken together, the results of these studies suggest that opportunities for IRT are important to effective learning and perhaps especially important to learning in online environments.

Notably for this study, IRT may be particularly crucial for creative endeavors such as writing-as-making. Recent research on the relationship between IRT and creative accomplishment demonstrates that, even when people have confidence in their creative abilities, they must be willing to take risks if they are to engage in creative behaviors (Beghetto, Karwowski, & Reiter-Palmon, 2020). IRT has also been shown to have a significant, positive impact on the creativity of adults (Wan, Lee, & Hu, 2021), as well as positive effects on the divergent thinking associated with creative work (Harada, 2020). Therefore, IRT may be particularly vital to professional development that engages teachers in writing-as-making.

Given the potential importance of ownership and risk-taking for teachers' learning and the limited research on them, the goal of this study was to examine ownership and risk-taking in a *writing-as-making Massive Online Collaboration* (wmMOOC). It examined two research questions: (1) How did teacher participants take ownership over their digital writing-as-making and their learning in wmMOOC? and (2) How did they engage in risk-taking as they participated in a community of digital writers/makers?

RESEARCH DESIGN

This study qualitative case study (Yin, 2009) examined two iterations of *write/make Massively Open Online Collaboration* (wmMOOC), an online professional development for writing teachers. Both iterations were a six-week learning experience, the first in Winter (January-February) 2018 and the second in Summer (July-August) 2018. The intended audience was preservice teachers, inservice teachers, and university faculty who wanted to learn about writing-as-making. We recruited participants through a number of venues, including the local National Writing Project teacher network, emails to local university faculty, posters hung in the university's College of Education buildings, and invitations sent to the second author's professional network on Twitter. In addition, during the second iteration there were also some word of mouth registrations via participants in the first iteration.

The vast majority of participants across both iterations were inservice K-12 teachers, although a small number of university faculty also participated (See Table 2). Across the two iterations, 105 educators participated, with 69 in the Winter session and 36 in the Summer session. We offered two options for engaging in wmMOOC: (1) auditing the course and engaging only in topics and activities of interest or (2) completing the entire course for continuing professional development (CPD) credits through the State Department of Education. Of the participating inservice teachers, 22 completed the requirements for CPD credit.

WMMOOC DESIGN

The design of wmMOOC brought together the tenets of writing-as-making, connected learning, and the National Writing Project. As noted above, these frameworks are synergistic and, at many points, overlapping. All emphasize a community of learners where participating, sharing, and supporting are valued, and all community members are expected to contribute and learn together. The community, rather than someone outside, identifies what is important, sets common goals, and works together toward those goals. Members' expertise is valued and shared for the common good. Notably, this orientation toward teacher learning differs from most professional development instructors and district administrators (Darling-Hammond, Hylar, & Gardner, 2017).

EdX, a MOOC platform that offers educational content from 90 institutions, served as the launch pad for wmMOOC. It hosted (1) videos that introduced each "make" (digital composition), (2) descriptions of each week's activities, and (3) links to resources—digital tools, help guides, and examples of digital compositions—relevant to each make. We chose to use EdX because its course

management features helped us enroll participants and track which teachers participated for CPD credit. It also provided a stable starting point for participants to overview and begin each week's activities.

While EdX served as the launch point, most wmMOOC interactions occurred outside of it, via Google+, Twitter, Padlet, or other interactive websites such as FoldingStory.com. Participants used Google+ to share their makes, post reflections about their writing-as-making processes and how they might use similar makes with their students, and respond to others' makes and reflections. Sharing and responding through the Google+ community encouraged discussion, feedback and support, and the potential for re-mixing in a way that interacting through EdX's discussion board could not. Google+ also provided the main venue for social and technical support, as participants and co-facilitators brainstormed ideas, shared problems and solutions, and celebrated successes. Twitter was used for weekly "chats" about each week's makes and the writing-as-making principles that each make embodied.

wmMOOC was organized around the concept of Make Cycles, which emphasized the writing-as-making focus. Each week, participants embarked on a new Make Cycle that explored a different theme: (1) six-image memoirs; (2) poetry hacking; (3) infographics and flowcharts; (4) collaborate makes; (5) making a difference with memes, animated gifs and cartoons; and (6) envisioning equity through re-making, hacking, and social annotation. Each Make Cycle invited participants to learn about the writing-as-making framework components, create digital texts that could be repurposed for use in their classrooms, and reflect on the experience individually and with other wmMOOC participants. At the end of the six Make Cycles, those who wanted to receive CPD credit curated a portfolio of their makes and wrote a reflection that addressed their growth in understanding writing-as-making and engaging in the writing-as-making process.

wmMOOC offered a flexible path through the course and provided participants with many options. For example, each Make Cycle offered two or three choices for how to engage with the content and topic: "Dip In," "Dive In," or "Swim In." We borrowed the "Dip, Dive, Swim" framework from NWP's CL-MOOC design (Smith et al., 2015) because it provided a way for participants to choose how they would engage with writing-as-making and to take more or less risk depending on their comfort levels. In Make Cycle 1, for instance, participants could choose to "Dip In" by using a technology they already knew, such as PowerPoint, to create a memoir that included images and words. Those who wanted to push further could "Dive In" by using an unfamiliar technology to create a memoir that included images, words, and music. Rather than requiring all participants to use the same technology, we supported participants' exploration of a variety of digital tools by providing lists of useful tools for each make and links to help resources.

In the design and facilitation of the course, we wanted to create an environment in which participants felt empowered and supported to try out new practices and technologies. We emphasized the playful nature of writing-as-making and underscored the idea that failure is part of the learning process. As co-facilitators, we also worked to make it clear that we were co-learners in the space, and we posted our makes and reflections on Google+ alongside the ones posted by participants. We responded to their posts as co-learners and co-makers rather than as evaluators, though we also occasionally offered technical support or answered questions about course requirements for CPD credit.

We received overwhelmingly positive feedback following wmMOOC's first iteration, so we made only a few changes to the second iteration based on our observations during the course and our preliminary data analysis data of the Iteration 1. First, we hired two teachers who had participated in the first wmMOOC to serve as co-facilitators. Their primary task was to engage participants in feedback and conversation about the makes posted on Google+. Second, in creating the Google+ site for the Iteration 2, we built in a structure for participants to more easily categorize their posts by make cycle and type of post (make or reflection on their make), which made it easier for participants to find and engage with each other's work.

DATA COLLECTION AND ANALYSIS

For the broader study from which the data presented in this paper are drawn, data collection included participant demographic information; a survey on their prior experience with learning in MOOCs; focus group interviews; reflections on each Make Cycle; and data created by learners through their participation in the MOOC activities, including discussion postings, communication with facilitators, and Twitter posts. Participants who signed up to receive CPD credit were required to create a portfolio of their makes and reflect on their growth in learning around writing as making. We collected the same set of data during both iterations of the course.

This paper reports on the analysis of the final portfolios of participants receiving CPD credit, $n = 22$. Each portfolio included (1) the participant's makes, (2) the reflections on each make that they posted to Google+, and (3) a final summative reflection. To receive credit, participants were asked to "Create a portfolio that showcases your learning and thinking about Writing as Making." They were specifically asked to provide evidence of:

- How your makes demonstrate the Writing as Making characteristics that we've examined in the course.
- How you have, or how you might in the future, attempt to implement Writing as Making with your students.

- What new technologies you tried and what new technology skills you developed.

Using Qualitative Content Analysis (QCA; Schreier, 2012), we analyzed how participants took ownership over their learning and engaged in risk-taking throughout wmMOOC. QCA is a process used to describe the content of qualitative data by systematically applying coding frames that are both concept- and data-driven. We developed four coding frames: *Ownership*, *Risk-Taking*, *Classroom Implementation*, and *Teachers Using Writing-as-Making as Framework*. These frames are conceptually and theoretically aligned with writing-as-making, connected learning, and NWP principles. This paper, due to space limitations, reports only the results of the analysis using the coding frames *Ownership* and *Risk-Taking*.

Categories within each coding frame (Table 2) were derived through our conceptual understandings of connected learning, writing-as-making, and NWP’s social practices as well as our analysis of the data (Schreier, 2012). We first read the data without coding it to get a general sense of participants’ responses. Following this initial reading, we derived categories for each coding frame by identifying how ownership and risk-taking *might be* expressed in the data (our conceptual understanding) and by identifying how participants *did* express each theoretical conjecture (our first read of the data). We then began to apply the coding frames systematically, refining the categories and creating new categories as other dimensions of the theoretical conjectures emerged from the data. For example, in the *Ownership* coding frame, we initially identified three ways that participants might show ownership over their learning during the MOOC: pushing back against the structures of the MOOC and/or instructor directions and intentions; going beyond the invitations and suggestions for completing MOOC activities; and integrating personal interests into the MOOC content and activities.

Table 2
Coding Frames

Coding Frame	Categories	Description
Ownership	Push Back	Resistance to or reshaping of the MOOC structures or instructor intentions
	Dig Deeper	Going beyond the MOOC activities/suggestions
	Personal Interest	Connecting to personal lives, personality, and preferences

	Investment	Demonstrating care, dedication, and time spent on designing
Risk-Taking	Confidence & Competence	Expressing confidence and competence in writing-as-making abilities
	Supportive	Explicitly stating that the learning environment was supportive or safe
	Push Institutional Boundaries	Challenging the barriers and norms that exist in K-12 classrooms
	Try Something New	Trying a new technology or design
	Admit Failure	Indicating a failed attempt with a technology or design
	No Risk	Indicating no risk taken
	Challenge	Encountering a positive or neutral challenge (vs. a frustrating one)

These initial categories were based on both our conceptual understanding of how “ownership” might be expressed by the participants and our first read of their portfolios. As we applied the coding frame to the data, it became apparent that—in addition to pushing back, going beyond, and integrating personal interests—some participants also became heavily invested in the MOOC activities, taking great care and investing significant time into their work. Thus, we added the category “investment” to the coding frame and then applied it to entire data set.

RESULTS

PARTICIPANT OWNERSHIP

One of wmMOOC’s goals was that participants would take ownership over their learning as they engaged in writing-as-making. Data analysis indicated that many did take ownership, though how they took ownership varied from person to person and, as a group, they were more likely to take ownership in some ways than in others. For example, the most common code in the *Ownership* coding frame, across both wmMOOC iterations, was “personal interest,” indicating that participants connected the content and activities to their personal lives and preferences. Ninety-two percent of participants in the first iteration and 80% of participants in the second iteration stated that they brought their personal interests into at least one of the writing-as-making activities. For example, *Make Cycle 2, Poetry Hacking*, invited participants to “hack” a poem by “remixing writing that is around

you everyday.” In response, Susan created a poem “from all the [Facebook] status updates my niece, who is a young mom of a two-year-old, is constantly posting,” while Barbara “chose to use words from a department chair meeting for my found poem,” and Nora hacked the poem *Divergent* to share with her students “in honor of Poem in Your Pocket Day.” Ellis included his daughter in his poetry hack, co-creating with her “a poem in tribute to daughters and fathers using random words or phrases from magazines we found interesting.” Each of these participants approached the poetry hack in a very different way, based on their own lives, relationships, and experiences.

Participants’ inclusion of personal interests and experiences in their writing-as-making likely reflects wmMOOC’s design. The instructions for each activity intentionally did not specify what to write/make about. For example, in Make Cycle 3, *Flowcharts and Infographics*, the instructions simply invited participants to “learn something and represent it” in a graphic format. Thus, the directions themselves opened an opportunity to address something of personal interest. In addition, the example flowcharts included a variety of topics such as a “Snarky Flowchart,” a chart about how to “Decide What Fruit to Eat,” and a decision tree entitled “Should I Listen to My Mother?” These examples made clear that many different topics would be acceptable for this writing-as-making activity.

The second most commonly coded category in the *Ownership* coding frame, across both wmMOOC iterations, was “investment.” “Investment” indicated that participants expressed dedication and time commitment to creating their writing-as-making texts. Sixty-seven percent of participants in the first iteration and 100% of participants in the second iteration indicated at least one instance of investment. Often, investment seemed to stem from participants’ desire to achieve their creative vision for a writing-as-making activity. For example, Olivia “wanted a picture of death” to include in her poetry hack during Make Cycle 2, and she culled through a variety of images located in a google search: “cute death, scary death, Homer Simpson death, and so on.” Similarly, when creating a digital cartoon, Kristen described how she “needed to work my way through a variety of tools to find the one that expressed my vision the best.” Thus, many participants seemed inspired to work hard in order to create writing-as-making texts that accomplished what they hoped to accomplish.

However, even “simple” writing-as-making activities could inspire investment. For example, during Make Cycle 4, *Collaborative Makes*, one option was to participate in a folding story at FoldingStory.com. The Make Cycle directions simply invited participants to “participate” in a folding story by “creating a new story or adding to some open folds.” In response, Sarah

found myself really having fun and playing around with the FoldingStory website... I didn’t want to create something “dull” and I wanted to give

others an easy “in” to jump into whichever story I was either creating or adding to at the time.

Similarly, Lori indicated that she “...didn’t know when to stop. I just wanted to add to more and more stories,” while Barbara “reworked my contribution a couple of times as to not end in the middle of a word.” Even though adding a folding story could have been a fairly simple activity, Sarah, Lori, and Barbara invested both thought and time into the task.

Although we did not analyze whether a systematic correlation existed between participants’ inclusion of their personal interests and their investment in their writing-as-making texts, some participants did express a relationship between these two dimensions of ownership. In commenting on the *Six Image Memoir*, Kristen stated:

With this make, I was writing as playing, but also writing as playing around. Choosing the photos was truly fun. Revising and tinkering in Slidely was not exactly fun, but definitely engaging. I think student choice is really important for buy-in, and I felt invested in my own work, in part because I had lots of options for photos and words. I also experimented with syntax/word order.

The *Six Image Memoir* specifically invited participants to share about their lives, and choosing these personal photos and their accompanying words led Kristen to feel invested in the work. Thus, personal interest and investment may be two interrelated components of ownership within the MOOC.

Although “investment” was the second most commonly coded category in the *Ownership* coding frame across both wmMOOC iterations, the variance between iterations was fairly sizeable. Only 67% of participants in the first iteration, versus 100% of those in the second iteration, indicated that they invested in some aspect of the wmMOOC experience. This difference might be attributed to the participants themselves; those participating in Iteration 2 may have simply been more determined to achieve their writing-as-making vision or more invested in their own learning. The difference could also be attributed to when each wmMOOC iteration occurred. Iteration 1 was held between mid-January and the beginning of March, when most of the participants were also teaching full time, while Iteration 2 occurred over July and August, when most participants were on summer break. Thus, those in Iteration 2 may simply have had more time to invest in their writing/making.

While “personal interest” and “investment” were the most common categories of expressing ownership for all participants, there was a wide variation in how often these codes occurred for each person. For example, some participants indicated they

included their personal interests only once during wmMOOC, while others indicated they integrated personal interests at six or seven different times. Similarly, some indicated they deeply invested in only one of the writing-as-making activities, while others said they invested in all six of them. Thus, it appears that some participants took more ownership, at least in terms of integrating their personal interests and investing in their writing-as-making, than others.

The third most commonly coded category in the *Ownership* coding frame, across both wmMOOC iterations, was “digging deeper,” indicating that some participants went beyond the activities invited by the make cycle invitations. Forty-two percent of participants in the first iteration and 50% of participants in the second iteration indicated they somehow exceeded what wmMOOC asked them to do. For example, participants were asked to choose one writing-as-making activity from two or three options for each Make Cycle. However, many completed all of the options for some cycles or created multiple examples of a writing-as-making text. In Make Cycle 5, *Making a Difference with Memes, Animated GIFs, and Cartoons*, for instance, Kendra said she “actually made 3 comics and picked my favorite.” Similarly, Pamela made both a gif and a meme:

As I was putting my portfolio together I decided to make a more serious meme that falls in line with the idea of making a difference. My original gif was fun, but I wanted to stretch a bit and use the media differently than I normally do.

Pamela initially created a gif about her children’s excitement as they listened to school closing announcements on snow days. Although it was a “fun” creation, it did not fully fit with the Make Cycle idea of “making a difference.” So, at the end of the course, Pamela revisited Make Cycle 5 and created a meme about community resources for people who found themselves homeless.

Other participants, such as Kristen, dug deeper by revising their work based on the feedback they received through the Google+ community:

After I shared my Slidely to the group, I received several pieces of feedback: 1) The music did not sync with the photos; 2) The text was small and got lost on the screen. As a result, I slowed the transitions for the photos and wrote the text in all capital letters. I also swapped out some vertical photos for horizontal ones, since I noticed that I didn’t have the option of flipping them in Slidely.

Although participants were not asked to revise their writing-as-making texts once they posted them, the feedback Kristen received inspired her to make changes that would improve her creation.

The category “pushing back” was the least commonly coded in the *Ownership* coding frame in both wmMOOC iterations. Only three instances of this code occurred across the entire data set: one in the first iteration and two in the second iteration. Thus, only 14% of the participants expressed resistance to anything about wmMOOC. Each instance of “pushing back” related to technology in some way. In Make Cycle 5, Barbara attempted to create an online comic but “threw in the towel and decided to just sketch it and put it on a google doc, so it was ‘online.’” Thus, she pushed back against the expectation that she create her cartoon digitally and created an analog version instead. Her use of quotation marks in describing how she put her hand-drawn comic “online” also suggests a possible pushing back against wmMOOC’s general focus on technology-driven composing and communication.

Ellis also pushed against the usefulness of technology in Make Cycle 3, *Flowcharts and Infographics*, saying “The participating and supporting element in this Make was more useful to me than the exploration of using the technology to create the writing.” Although he did not say that exploring the technology was useless, he downplayed its importance in comparison to the social components of the Make Cycle. Given that most of the Make Cycles emphasized opportunities to try different apps for digital composing, this comment, like Barbara’s, can be viewed as pushing back against the MOOC’s general focus on technology. Similarly, Samantha questioned whether the course itself was mistitled:

I think this course should be named as “Digital Writing as Making” or “Writing as Digital Creating” because it was not focused on the process of writing as composing (6+1 Traits) per se but rather on writing as responding to digital challenges.

Like Barbara and Ellis, Samantha seemed to be pushing back against wmMOOC’s emphasis on technology as a primary tool for writing/making. The MOOC was titled “Writing as Making” and, although participants knew it was an online learning experience, they did not necessarily know before beginning it that most of the suggested writing/making options involved digital composing. Thus, Samantha suggested that wmMOOC’s focus on digital tools should be made more prominent in its title and description.

PARTICIPANT RISK-TAKING

A second goal of wmMOOC was that it would provide a safe space for and encourage participants to take risks in their learning. The most commonly coded category in the *Risk-Taking* coding frame, across both wmMOOC iterations, was “trying something new.” Eighty-three percent of participants in the first iteration

and 80% of participants in the second iteration indicated that they tried at least one new technology. Tamara, for example, listed a variety of technologies that she tried for the first time:

New technologies I tried were Spark and Photoshop (Adobe), FoldingStory, Thinglink, Google+, Canva and Venngage (which I did not end up using for a Make, but did explore and use for work), Piktochart, Padlet, StoryboardThat, and others that I learned about through classmates' projects.

Tamara's use of new technology was unsurprising given wmMOOC's design and goals. Most of the writing-as-making activities required participants to use some form of technology, and a goal of the course was to provide opportunities to try unfamiliar apps and websites. Each of the apps Tamara mentioned were suggested during one of the Make Cycles, so simply participating in wmMOOC afforded her an opportunity to try these new technologies. The invitations for each writing-as-making activity provided suggestions for several technologies that might be helpful for completing the task, so participants had multiple opportunities to explore technology that might be unfamiliar.

Although "trying something new" most often meant that participants engaged with unfamiliar technology, some also indicated that they wrote/made in genres that were new to them. Forty percent of participants in each wmMOOC iteration indicated they created something they had never tried before. Many created their first meme, gif, cartoon, or hacked poem. While writing/making in these new genres also required them to try new technologies, these participants focused on how the genre stretched their thinking rather than how they learned a technology per se. In reflecting on "hacking" a poem about chickens, for example, Tamara said, "Hacking a poem allowed me a new way to share information about how to care for chickens. By relating the new information to a familiar poem, prior knowledge is activated in an engaging way." The technology she used, Thinglink, was also new to her, but her statement suggests it was engaging in the hacked poetry genre that supported her new understandings.

As with the use of new technology, participants' work with new genres was unsurprising because wmMOOC was specifically designed to engage teachers in writing-as-making—an activity that we anticipated would be, at least in many ways, new to them. Memes, gifs, cartoons, hacked poetry, and social annotations were genres that we expected might be unfamiliar, and we therefore created opportunities for them to write/make in these ways. Make Cycle 5, for example, was entitled *Making a Difference with Memes, Animated GIFs, and Cartoons*. Thus, participants were specifically invited to explore these genres—genres that are not typical in most classrooms. As a result, a primary feature of wmMOOC was that participants

would have opportunities to try new ways of digital composing through the writing-as-making framework.

In addition to the fact that 80% of participants “tried something new” at least once, many indicated they tried several new things throughout wmMOOC’s duration. Across both iterations, 23% percent of participants said they tried something new two or three times, and 45% indicated they engaged in something new four to six times. Thus, most participants took more than one opportunity to try something they had not attempted before.

The second most commonly coded category in the *Risk-Taking* coding frame, across both wmMOOC iterations, was “challenge.” This code was applied when participants described how they encountered a positive or neutral (rather than frustrating) challenge while writing/making. Seventy-five percent of participants in the first iteration and 80% of participants in the second iteration indicated they encountered a challenge and found satisfaction in overcoming it. Lori, for example, described her experience in Make Cycle 4, *Collaborative Makes*, as “agita” turned into the “greatest thing:”

[FoldingStory] was my favorite assignment. Even though the assignment description gave me such agita: “Work together on a collaborative composition toward a common goal and a common product.” (Give someone control over my stuff?!? That’s mine! That’s crazy talk!) It turned out to be the greatest thing. I literally could not wait to read how people would take on my part of the story and where it would turn to.

Lori initially found the concept of a “collaborative composition” challenging. The idea that she would give up control and work toward a shared product was a difficult way for her to contemplate engaging in writing/making. However, participating in FoldingStory “turned out to be the greatest thing.” Overcoming the challenge of her fear about collaborative composing brought Lori satisfaction as she saw how others built upon her contribution to the story.

The third most commonly coded category in the *Risk-Taking* coding frame, across both wmMOOC iterations, was “confidence and competence,” indicating that many participants felt confident and competent enough to take risks. Seventy-five percent of participants in the first iteration and 80% in the second iteration expressed confidence and competence in their writing-as-making at least one time. Often, their confidence lay in their abilities to use writing-as-making in the classroom with their students. As Patty explained

The skills that I have developed from this course are wide and varying, from realizing that memes are easy and fun, to ways to quickly and easily integrate technology into SLC’s (Student Led Conferences) through Google

Slides, Meme Maker, and Creately, to integrating thinglink.com into annotating poems and passages for students to work on online at home or in class.

Patty expressed confidence in a “wide and varying” set of skills and in her ability to integrate a variety of technologies into her instruction.

“Failure,” a category in the *Risk-Taking* coding frame that indicated participants explicitly stated they had tried and failed at some aspect of writing-as-making, was the fourth most commonly category in the first wmMOOC iteration and the fifth most commonly coded category in the second iteration. Forty-two percent of participants in Iteration 1 and 30% of those in Iteration 2 indicated they had tried something and failed. Often failure involved attempting an idea or technology and then giving up on it. In Make Cycle 5, for example, Kendra said that “I really struggled with this make. I originally planned to make a meme, but I had extreme writer's block. So I changed my make, switching from a meme to a comic...However, I needed that failure and struggle to help me reevaluate my plan and change course.” Similarly, Barbara indicated that “I had this idea in my head and could NOT get the online tools to create the vision I had for my cartoon.” Both Kendra and Barbara abandoned their original plans, either because they could not figure out how to enact them or because the technology did not do what they wanted it to do. The fact that participants admitted struggle and failure suggests that they were taking risks when engaging in the writing-as-making tasks.

The least commonly coded category in the *Risk-Taking* coding frame, across both iterations, was “pushing institutional boundaries.” No participant in either iteration indicated that they challenged or planned to challenge the boundaries and norms for teaching and writing that existed in their classrooms or schools. Given wmMOOC’s design, with its focus on non-traditional ways to engage in composing, we had anticipated that participants might describe how they could challenge their curriculum, standards, testing, or other expectations for their students’ writing or use of technology. However, this did not occur, indicating that wmMOOC did support this aspect of risk-taking.

While trying new things, finding satisfaction in challenge, feeling confident and competent in their writing-as-making abilities, admitting failure, and pushing against institutional boundaries were aspects of risk-taking that were similar across the two wmMOOC iterations, two other aspects varied: participants’ sense of support within wmMOOC and the number of times they indicated that they avoided risk-taking. For example, in the category “supportive” in the *Risk-Taking* coding frame, only 17% of participants in Iteration 1 explicitly stated that they felt wmMOOC was a supportive or safe space. In contrast, 50% of the participants in Iteration 2 said they felt supported by the other wmMOOC members.

In Iteration 1, only two participants made any comment about the supportive nature of wmMOOC. One described the course as “a low-stress, supportive, online environment in which creativity and learning were valued.” This description reflects the connected learning and writing-as-making principles that guided wmMOOC’s design. The facilitator videos, the written directions for the writing-as-making activities, and facilitator comments to Google+ posts explicitly stated that playing, exploring, and creating—rather than fulfilling requirements—were valued by the instructors. The design of each Make Cycle also invited personally meaningful, rather than prescribed, pathways to learning, leading to a low-stress experience.

The other participant who described wmMOOC Iteration 1 as supportive explained how “I worked with many of the writers at my school, which allowed the opportunity for quick check-ins and questions. It was great to know I had the support of so many amazing writers during this course.” Notably, her experience with support occurred face-to-face rather than within the wmMOOC environment. Several teachers in her school had opted to take the course at the same time, and they “checked in” during the school day rather than online. Thus, the support she experienced seemed unrelated to the wmMOOC design. If others in her school had not also participated in wmMOOC, she may not have felt supported.

In contrast, half of the participants in the second iteration commented on the support they gave and received through their online interactions. As Violet commented, “we were able to support each other on this journey, and our joint participation in the Google+ community helped us give and receive effective feedback about our work.” Ellis explained how

Writing and participating and supporting through Make 2 [Poetry Hacking] showed me the power of collaboration. Sharing each of the examples in Make 2 brought a plethora of comments that helped me see the value of feedback for my students. When I shared, I really was looking forward to comment or feedback. Supporting my follow writers was essential to me. I thought about the effort each of us was making to contribute and offer useful comments. I intentionally read each Make and provided honest feedback that would help make the product better.

Ellis’s comments demonstrate the value he found giving and receiving support. He looked forward to receiving comments about his writing-as-making texts, and supporting other participants became an “essential” aspect of his wmMOOC participation. Given that 36 participants were enrolled in the course during the second iteration, “intentionally read[ing] each Make and provid[ing] honest feedback” meant he devoted a significant amount of time, energy, and thought to supporting others.

The variation between the first and second iterations in participants' comments about support may be attributed to how wmMOOC was redesigned. Participants in the second iteration described the "support" they felt in terms of the feedback and comments they received in the Google+ community. Because Iteration 2 included two teacher-facilitators who were specifically tasked with responding to Google+ posts, much more conversation occurred within the community than during Iteration 1. The facilitators provided feedback to almost every post, which, in turn, seemed to prompt participants to make additional comments. As a result, each participant in Iteration 2 received multiple comments and points of "feedback" to their posts, which led them to view wmMOOC as supportive.

In addition to differences in participants' sense of support, another noticeable variation in risk-taking that occurred between Iteration 1 and 2 was in the number of times participants opted to *not* to take a risk during the MOOC. In Iteration 1, 42% of the participants described at least one instance in which they knowingly and purposely avoided risk-taking; in Iteration 2, no participants described avoiding risk. For example, in Iteration 1, Gabriela chose to use a powerpoint for Make Cycle 1, *Six Image Memoir*, rather than attempt the technologies suggested for the make—Slide.ly, Animoto, Adobe Spark, or Lumen5. She "was hesitant to try these new websites" and, instead, used a familiar, comfortable media. Even by the end of Iteration 1, some participants still chose to avoid writing/making with new and therefore riskier technology. As Pamela noted in her final portfolio, "I am amused that I chose to write a plain old double-spaced reflection paper as a capstone to my experience. Old habits are hard to break."

In contrast, in the second iteration, no one indicated they chose to avoid risk. While it is not clear why this occurred, it is possibly related to the second iteration's redesign. The redesign led participants to feel more supported by their colleagues than participants felt in Iteration 1, which may have, in turn, led them to engage in more risk-taking and less risk avoidance. Thus, feeling supported may be interrelated with willingness to take risks in a wmMOOC experience.

DISCUSSION AND IMPLICATIONS

The purpose of this study was to examine how teachers take ownership over and risks with their writing/making and professional learning, two stances theorized as important for preparing teachers to support their students' digital composing (Hatch, 2013; Ito et al., 2013; Lieberman & Wood, 2003). wmMOOC did, in many ways, provide an opportunity for teachers to take positive risks and develop a sense of ownership over their writing/making and their learning. The vast majority of participants engaged in risk-taking and expressed ownership at least once, and often several times, during wmMOOC. They brought their personal interests into their makes, invested significant time and energy into creating makes, and frequently

went beyond what wmMOOC invited them to do in an effort to design makes they felt were powerful and worthwhile. They also took up new technologies and genres, engaged with and overcame challenges, and expressed confidence in their abilities to accomplish these new tasks and challenges. These findings are important because they demonstrate that wmMOOC's design allowed teachers to meaningfully engage in digital composing/making and experience the writing-as-making ethos that undergirds successful digital writing.

Specific elements of wmMOOC's design likely contributed to participants' ownership and risk-taking. For example, each make cycle was open-ended, asking participants to do such things as "hack a poem by remixing writing that is around you everyday" or "learn something and represent it in an infographic." Although links to examples were provided, to a certain extent, participants had no choice but to take some ownership over their writing/making because they received little direct guidance about what to write/make or how to go about doing it. They likely incorporated their personal interests not only because they had the freedom to do so, but because no other topics were suggested.

Similarly, participants had little choice but to take risks by composing new genres and using new technologies because most of the makes required some form of digital composing that—by design—was likely unfamiliar to the teachers. Although makes sometimes included familiar (PowerPoint) or low-tech (paper/pencil) options, those such as six-image memoirs, infographics, memes and gifs, and collaborative makes were not easily accomplished without creating something digitally. In addition, we repeatedly highlighted the writing-as-making framework in the written descriptions of the makes and in our interactions with participants on Google+. This framework explicitly supported risk-taking through characteristics such as "writing as playing" and "writing as learning," and we sought to build that spirit of resiliency into wmMOOC through all our interactions with the participants. Thus, both the design of the writing-as-making activities and the emphasis on the writing-as-making ethos likely contributed to participants' risk-taking.

One feature of wmMOOC that seemed to particularly impact participants' experiences was the interactions that took place on Google+. In Iteration 2, we added two teacher-facilitators who posted their own makes and comments, responded to participants' makes and comments, posed questions to participants about their makes, and encouraged interaction among participants (for example, suggesting that a participant look at a make or comment someone else had posted). Although we (the three instructors) had facilitated Google+ interactions during Iteration 1, we struggled to provide consistent, in-depth feedback while also administering the course. Adding the teacher-facilitators created more participant-facilitator interaction during Iteration 2, which in turn seemed to increase participant-participant interaction. Notably, many more participants in Iteration 2

than Iteration 1 indicated that they felt supported within wmMOOC and fewer indicated they had avoided risks, which suggests that the increased interactions created a sense of support and community—two features of the writing-as-making ethos. This finding indicates that an important aspect of wmMOOC design is creating a supportive online community that supports risk-taking.

Although the addition of the teacher-facilitators may have supported participants' sense of community and their risk-taking, it is also possible that the timing of wmMOOC iterations impacted participants' willingness to take risks. Iteration 2 occurred in the summer, when teachers typically have more time, so they may have spent time playing, experimenting, and risking failure in ways that would have been more difficult during the school year. Because Iteration 1 participants were teaching during wmMOOC, they may have felt more hurried and unable to risk failure because they had less time to devote to their writing-as-making.

While this study provides insight into wmMOOC design features that facilitate a positive writing-as-making learning experience for teachers, it also highlights the design limitations. wmMOOC did not promote many instances of pushing against traditional structures for learning or writing—something that seems important since most schools provide few opportunities for students to engage in multimodal digital composing (Vega & Robb, 2019). Only three participants questioned or resisted anything that wmMOOC invited them to do, and no one reexamined or critiqued their school's curriculum, standards, or assessments in light of their writing-as-making experiences.

In regard to teachers' own learning in wmMOOC, we anticipated that taking ownership for their learning and their making/writing processes might lead them to question or seek to revise what we asked them to do, but that rarely happened. Even in the three instances where teachers did push back, they expressed only mild disapproval of wmMOOC's technology focus. Although the lack of push back may reflect participants' overall satisfaction with the professional development (PD), we wonder if it also reflects a passive, perhaps unexamined, acceptance of traditional PD design. Despite the choices and options built into wmMOOC, the State Department of Education required fairly traditional expectations for receiving credit for the PD—namely, that participants demonstrate they had “completed” the PD content to a certain standard. Those who wanted credit were required to complete all six Make Cycles and complete a final portfolio with specific components. The notion of “requirements” and the directive nature of the final portfolio were a departure from the open-ended, self-directive ways teachers engaged in the Make Cycles. Yet, no one questioned or even acknowledged this departure.

In regard to pushing against traditional structures for writing in schools, we anticipated that engaging in writing-as-making might cause participants to question the types of writing in their current curricula, but they did not. One limitation of the

study is that it did not directly investigate if or how teachers incorporated their experiences in wmMOOC in their classrooms. Participants did occasionally describe how they could or would like to include writing-as-making in their curriculum, but it is not clear if they actually did so. Furthermore, even their descriptions of how they might use writing-as-making indicated they would make only simple changes, such as having students use Adobe Spark rather than PowerPoint for a composition they currently completed. While moving from Powerpoint to Spark would allow students to include music in addition to images and words, no participant fundamentally questioned the usefulness of traditional writing assignments or suggested that more room be made in the curriculum for multimodal composing, and no one indicated that writing-as-making had changed their view of writing instruction. In redesigning wmMOOC for future iterations, we would like to consider how to encourage teachers to take a more critical stance toward the writing/composing/making process that occurs in their classrooms and to consider how they might better prepare students for 21st century composing.

In addition to helping teachers take a critical stance toward writing instruction, future wmMOOC iterations could more directly support teachers' use of writing-as-making in their classrooms. While we asked the participants to reflect on how they might use writing-as-making with their students, we did not ask them to try any specific makes or plan for future instruction. Notably, engaging in writing-as-making themselves did not lead most participants to *teach* writing-as-making. This finding confirms previous research demonstrating the complex relationship between teachers' own writing experiences and their pedagogy (Cremin & Oliver, 2016), and it suggests that teacher educators must help teachers make explicit connections between their writing and their writing instruction (McQuitty & Ballock, 2020). It is currently unclear how to ensure teachers connect their writing/making with their teaching, and future studies must address this question. For example, researchers might examine how providing opportunities for teachers to create lessons or adapt their curriculum to include writing-as-making helps them connect their own digital making to what they teach their students.

This study extends our understandings of ownership and risk-taking in online learning experiences for writing teachers. The findings demonstrate that it is possible to design an experience that supports ownership and risk-taking, and it provides insight into how to do so. Providing open-ended make cycles, inviting participants to engage with new genres and technologies, and offering social support all appear to contribute to ownership and risk-taking. The findings also indicate that teachers respond positively to opportunities to take ownership and risks as they engage in writing-as-making. Thus, the study provides emerging evidence that ownership and risk-taking may be important aspects of teachers' experiences with digital composing. However, the relationship between ownership, risk-taking, and teachers' learning requires further research. Future studies must

clarify how ownership and risk-taking contribute to successful writing/making and, ultimately, to changes in teachers' writing pedagogy. For example, it might be useful to interview participants about how they view the ownership and risk-taking opportunities in wmMOOC and to ask how their sense of ownership and risk-taking affected their experience in the PD, their learning, and their future pedagogy. It might also be useful to enhance opportunities for ownership and risk-taking and investigate how those changes impact teachers.

Although ownership and risk-taking appear to be important elements of engaging teachers in writing-as-making, other PD characteristics are likely also important. For example, wmMOOC attempted to create a community of learners, engage participants in a shared purpose, and provide opportunities for questioning and reflection. Future analyses can examine these aspects of participants' experiences and possibly provide insights into other effective elements of PD design. In addition, it would be helpful to investigate how the different design elements interact with and shape one another. For instance, this study suggests a possible relationship between social support and risk-taking, and future research could investigate this relationship more fully. By examining ownership and risk-taking in wmMOOC, this study illuminates one small piece of the puzzle about how to design online learning experiences to prepare teachers for 21st century writing instruction. Ultimately, researchers must examine multiple aspects of online learning to determine the combination of PD features that effectively prepare teachers to teach digital writing.

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