"I FILLED A LOT OF GAPS": HOW AND WHY EARLY CAREER TEACHERS EXPAND
INDUCTION SUPPORT SYSTEMS WITH SOCIAL MEDIA

By

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ABSTRACT

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Early career teachers face numerous challenges during their transition from teacher preparation programs into professional employment contexts. With many more opportunities for professional learning available today, early career teachers must navigate an increased number of potentially conflicting messages about what and how to teach. This study explores the support systems that early career teachers construct during induction and how they use social media for this purpose. These systems can be understood as *professional learning networks* (PLNs) consisting of tools, people, and spaces and useful for improving teaching and learning. Interviews with early career teachers provide evidence of reasons why they develop PLNs as well as what tools, people, and spaces they include in these support systems. Findings demonstrate that early career teachers construct induction support systems to navigate change, scarcity of resources, and conflicting teaching beliefs. Early career teachers look for tools for planning, enacting practice in the classroom, and connecting socially. People in early career teachers' support systems included both in-school and out-of-school connections. Interviewees described how they use various social media platforms in their induction support systems as well as boundaries they maintain around social media use. Finally, early career teachers described their engagement on social media in terms of browsing, asking, and exchanging. Implications of these findings are discussed for early career teachers, teacher educators, and education leaders—especially regarding how stakeholders can help alleviate induction pressures on early career teachers. This study contributes insight into the convergence of tensions experienced by early career teachers as they consider whether and

how to construct support systems during induction, including if and how to look for help on social media.

For my family, E^3, who continually remind me of what really matters.

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Introduction

Early career teachers face numerous challenges during their transition from teacher preparation programs into professional employment contexts (i.e., their *induction* period). At minimum, early career teachers must move from learning about teaching to actually practicing teaching. The difficulties of this transition may be compounded when early career teachers enter their school of employment with notions of teaching that are not shared—or in some instances, are even actively discouraged—by more experienced colleagues. The literature has characterized this tension as a "two worlds pitfall" (Feiman-Nemser & Buchmann, 1985) resulting from conflicting messages from the academic "world" of the teacher preparation program and the practical "world" of the professional teaching context. Furthermore, it seems likely that tensions have only increased as people and information have become more connected through digital technologies. Social media platforms, in particular, have created new opportunities for teachers' ongoing professional learning (Trust & Prestridge, 2021). As a result, early career teachers must navigate an increased number of potentially conflicting messages about what and how to teach.

The purpose of this study is to explore the support systems that early career teachers construct during induction and how they use social media for this purpose. These support systems can be understood as *professional learning networks* (PLNs) consisting of tools, people, and spaces useful for improving teaching and learning (Krutka et al., 2017; Trust et al., 2016; Trust & Prestridge, 2021). Teachers connect to—and make connections between—various sources of information, resources, and encouragement to build their own PLN. For the purposes of this study, I define a PLN as a support system of interconnected tools, resources, people, and spaces— spanning local and online contexts—with the teacher at the center.

An early career teacher develops their support system (i.e., PLN) from a subset of all possible tools, people, and spaces available, because no one can learn with all tools from all people in all spaces. For instance, a recent count showed that there are more than 900 distinct education-related Twitter hashtags (Participate Inc., 2019), which organize spaces for ongoing conversations about teaching and learning (Greenhalgh et al. 2020). These are spaces on just one social media platform; there are many more, including 16 distinct, teaching-related discussion forums comprising the Reddit Education Network (Staudt Willet & Carpenter, 2020, 2021), many teacher Facebook groups, Instagram hashtags, and so on. Innumerable people participate in these many spaces, sharing tools that might provide useful support to teachers.

There is a gap in how the literature has covered early career teachers' challenges and support systems. Research on teacher induction has primarily focused on support systems of tools, people, and spaces that exist within formal programs. This body of work has not fully considered implications of recent technological advancements that may create more expansive opportunities for—and new complications of—early career teachers' support systems. Meanwhile, research on teachers' use of social media has rarely taken into account the specific needs of early career teachers as they transition into teaching.

This study addresses the gap in the literature by specifically addressing both induction challenges and social media practices of early career teachers. This work is able to then contribute recommendations to teacher educators and education leaders regarding how to sustain early career teachers in the profession. These insights are important because even prior to the disruptions of the COVID-19 pandemic in 2020, teachers had been leaving the classroom at an unprecedented rate (Carver-Thomas & Darling-Hammond, 2017; Hackman & Morath, 2018), with especially high attrition among early career teachers (Ronfeldt & McQueen, 2017). Induction challenges

continue to grow, and early career teachers' ability to develop and sustain robust PLNs (i.e., supports systems) must expand as well.

Framework

This study is framed in terms of professional learning networks (PLNs). For this study, I define a PLN as a support system of interconnected tools, resources, people, and spaces—spanning local and online contexts—with the teacher at the center. A PLN frame centers early career teachers' efforts to establish support systems around themselves, conceptualizing teachers' support systems in terms of tools, people, and spaces that help improve teaching and learning (Krutka et al., 2017; Trust et al., 2016; Trust & Prestridge, 2021). PLNs emphasize the interconnected, or networked, nature of a support system, with the teacher at the center. PLNs have roots in *situated learning* theories, which assert that learning occurs within specific contexts (Lave & Wenger, 1991; Putnam & Borko, 2000). Lave and Wenger (1991) described learning as an apprenticeship, a process wherein a newcomer becomes a member of a community of practice. This view of learning-as-situated foregrounds the individual learner; for PLNs, this means focusing on a single teacher who connects to tools, people, and spaces to support and improve their ongoing professional learning. The *tools* shared in PLNs are useful for teachers' professional learning and may include knowledge, skills, teaching resources, curricular materials, and encouragement. These tools are shared by *people*, both individuals and groups, with whom an early career teacher can connect through various *spaces* (e.g., school of employment, district workshops, social media platforms). Teachers' willingness to voluntarily construct PLNs in addition to required professional development suggests that there are *underlying reasons* that justify spending extra time and effort beyond the regular demands of the teaching profession. In sum, a PLN can be understood in terms of *why* (i.e., underlying reasons) a teacher constructs a support system, *what* they are looking for (i.e., tools for professional learning), *from whom* (i.e., people), and *where* (i.e., spaces).

A PLN frame is well-suited for this study because it foregrounds teachers' professional learning while expanding the scope of tools and people to potentially include those accessed through emergent spaces like social media. PLNs include elements of traditional professional development in addition to informal learning possibilities (Krutka et al., 2017; Prestridge, 2019; Trust et al., 2016), spanning local and global spaces (Trust et al., 2016). The mix of face-to-face, online, formal, and informal elements highlighted by a PLN framework has the potential to address the gap between research on teacher induction and research on teachers' use of social media.

Two other frameworks intersect with the PLN concept and offer additional insight: learning ecology and agency. First, the many spaces comprising an early career teacher's PLN can be understood as a *learning ecology*: "the set of contexts found in physical or virtual spaces that provide opportunities for learning" (Barron, 2006, p. 195). In other words, a learning ecology emphasizes the spatial component of a PLN, highlighting that PLNs are composed of interconnected and mutually influential spaces, with the individual teacher at the center (Figure 1). Disparate pieces of a PLN fit together to make a whole (Barron, 2006; Stevenson et al., 2019; Veletsianos et al., 2019) and may change over time (Carpenter et al., 2021; Veletsianos et al., 2019). For instance, an early career teacher may start asking teaching-related questions in the r/Teachers subreddit and learn about policy issues in the r/education subreddit (Staudt Willet & Carpenter, 2021) to complement a recent district professional development workshop discussing new expectations for teaching to standards. In cases like this, participating in informal contexts can support and influence learning in formal contexts (Peters & Romero, 2019).

Figure 1: *Spaces for Early Career Teachers' Professional Learning*

Second, early career teachers enact *agency* when making choices about constructing PLNs. Because of the emphasis on professional learning, an agentic perspective on PLNs specifically highlights teachers' *identity-agency*. Identity-agency can be understood as taking responsibility for and actively investing in one's own self-development as a teacher (Ruohotie-Lyhty & Moate, 2016). This definition is similar to Bandura's (2001) conceptualization of agency: "to play a part in their self-development, adaptation, and self-renewal with changing times" (p. 2). Identity-agency emphasizes the teacher as an active agent (Tao & Gao, 2017) taking intentional and purposeful actions (Pearce & Morrison, 2011). These agentic actions follow a path starting with recognizing a challenge, forming a strategy to overcome that challenge, and then implementing

the strategy (Bandura, 2001). Developing agency is thus a process that takes time and is reinforced by outcomes that are perceived to be positive, whether benefiting students or the teacher (Bartell et al., 2019).

Early career teachers are still actively constructing their professional identities (Juutilainen et al., 2018) in a process where identity development is intertwined with agentic choices and actions (Tao & Gao, 2017). This process of enacting identity-agency includes teachers making their own choices about how to construct a support system from the subset of all tools, people, and spaces available to them (i.e., why they access some contexts but not others). These agentic actions are "influenced by experiences, beliefs, values, and goals in conjunction with the context" (Wray & Richmond, 2018, p. 3). For instance, if an early career teacher had difficulty contextualizing the content of a district professional development workshop, it would be up to them to talk to colleagues in the teachers' lounge, ask a mentor teacher, or see what answers they could find through social media. The result is a PLN that is "uniquely cultivated" (Trust & Prestridge, 2021, p. 1) to meet the induction needs of each teacher.

In sum, this study considers early career teachers' construction of support systems with a PLN frame, taking into account ecological and agentic perspectives. Social media have greatly increased access to potential tools, people, and spaces that might help early career teachers navigate induction challenges. An ecological perspective spotlights the relationship between various PLN components, and an agentic perspective draws attention to early career teachers' intentionality in choosing some components to add to their PLN, but not others.

Review of Literature

Although the teacher induction literature and the teachers' use of social media literature share a broad interest in teachers' professional learning, these bodies of research remain almost entirely disparate. The induction literature tends to focus on formal, local programs—often defining the scope of inquiry too narrowly to include the full range of tools, people, and spaces potentially made accessible to early career teachers through social media today. In contrast, the social media literature tends to focus on informal learning opportunities through worldwide connections, leaving the scope of inquiry too broad by not considering that there may be unique experiences and challenges faced by early career teachers during induction. In addition, these two bodies of research deal with similar concepts but use distinct terms and definitions. Therefore, here I use the PLN framework to organize a review of what has been studied and what is yet unknown regarding *tools* (formal and informal), *people* (in-school and out-of-school), and *spaces* (including those accessed through social media) made available to or sought out by early career teachers during induction. First, though, I look at *underlying reasons* reported in the literature for why early career teachers need induction support systems at all.

Reasons for Induction Support Systems

Two realities for early career teachers stand out in the literature as related to induction challenges and underlying reasons why induction support systems are necessary: everything is new, and early career teachers are still learning their professional practice. I unpack these in the following paragraphs.

Everything is New

A first challenge for early career teachers is that everything in their professional lives is new. They are adjusting to new colleagues, administrators, students, curriculum, school culture,

and school politics (Stanulis et al., 2012). In addition, early career teachers are not able to work with the same efficiency as their more experienced colleagues and end up working a disproportionate amount of time just to get by (Fantilli & McDougall, 2009).

Early career teachers are also still forming their professional identities as educators—that is, how they understand themselves in relation to teaching (Cuddapah & Clayton, 2011) and how they invest in "becoming and being a teacher" (Ruohotie-Lyhty & Moate, 2016, p. 318). For instance, Tao and Gao (2017) found that teachers expressed their identity in terms of how they aligned themselves with and acted toward teaching reforms.

In their narrative inquiry study, Pearce and Morrison (2011) argued that early career teachers' identity development is a social process, occurring through interactions with others. Wray and Richmond (2018) characterized this social process as one of *positioning*, which can be understand as how an early career teacher behaves within a teaching community and how members of that community view them in turn. Wray and Richmond's (2018) study found that social context impacted new teachers' identity. If new teachers were able to position themselves parallel to their social context, the experience strengthened the teachers' values. However, if new teachers found themselves positioning in opposition to their social context, they encountered dissonance (Wray & Richmond, 2018). Ruohotie-Lyhty and Moate (2016) did not use the term "positioning," but their reported findings on preservice teachers' identity-agency were reminiscent of social positioning. They described three forms of identity-agency in their results: (a) expansive or reforming response to new ideas about teaching, (b) reductive or rejecting responses, and (c) monitoring or anticipating responses (Ruohotie-Lyhty and Moate, 2016). Juutilainen et al. (2018) studied stable, assigned learning communities where preservice teachers could explore and

collaborate in small groups, and they concluded that such emotionally safe spaces were important for supporting identity-agency.

Past studies have often characterized the dissonance experienced by early career teachers in terms of competing values between past and present professional contexts (Juutilainen et al., 2018; Thompson et al., 2013; Wray & Richmond, 2018). In the face of such dissonance, new and early career teachers find it difficult to hold onto prior ideas of teaching; instead, former notions tend to be abandoned in favor of those encountered in the new context (Feiman-Nemser & Buchmann, 1985; Vaughn, 2013). Ruohotie-Lyhty and Moate (2016) concluded from their action research study with preservice teachers that identity-agency is more than achieving coherence in the face of dissonance. Instead, they interpreted their findings to mean that identity-agency is an active, personal responsiveness and investment in self-development that occurs during identity negotiation.

Ongoing Learning

A second challenge for early career teachers is that they have been credentialed to teach, but they are still honing their educational practice (Stanulis et al., 2012). Ingersoll (2012) explained that induction programs are designed assuming that teaching is a complex practice, with knowledge and skills that can only be fully developed by doing the work itself. Anderson and Stillman (2013) reviewed the literature and found that a dominant model of preservice teacher learning during their field experiences is a *replication* of experienced educators' practices. Therefore, the challenge for early career teachers in their transition from preparation to practice is to move beyond replication to *recontextualization* of practice appropriate for the early career teachers' specific classroom. Fantilli and McDougall's (2009) survey study reported challenges for early career teachers such as differentiating instruction to meet the needs of advanced students,

communicating with parents, managing time for planning and scheduling, and managing students'

behavior in the classroom. Early career teachers are introduced to these skills in preparation

programs, but they have not yet mastered them. Early career teachers are largely focused on

personal concerns and resolving classroom management issues. In contrast, teachers with more

experience are able to focus on curriculum and teaching practices, and only highly experienced

teachers are able to focus on long-term thinking and student learning (Thompson et al., 2013;

Zhukova, 2018).

Tools for Support During Induction

Formal Induction Programs

Ingersoll and Strong (2011) noted that formal induction programs have helped early career

teachers transition from preparation to practice, from being students of teaching to teachers of

students. Several studies have argued that induction supports should be targeted, systematic, and

structured (Kang & Berliner, 2012; Zhukova, 2018). In a local context, skills and knowledge are

offered through mentoring relationships as well as through seminars and workshops (Fantilli &

McDougall, 2009; Kang & Berliner, 2012; Ronfeldt & McQueen, 2017). Dedicated times for

collaborative work provide assistance with teacher planning (Fantilli & McDougall, 2009; Kang

& Berliner, 2012; Ronfeldt & McQueen, 2017). Finally, help with classroom management and

differentiation of instruction is offered by providing extra classroom assistance to early career

teachers (Kang & Berliner, 2012). The nature of these formal programs varies, with some being

scheduled (e.g., workshops) and others just-in-time and on-demand (e.g., mentors, classroom

assistance).

Informal Learning Opportunities

Research on teachers' use of social media has tended to emphasize how teachers have sought professional learning through social media platforms in ways that are self-initiated and informal (Macià & García, 2016). Kim et al. (2018) described how schools are composed of both a formal organization (e.g., defined teacher positions and roles) and informal networks (e.g.., who students turn to for expertise). This means early career teachers may experience a mix of formal and informal elements in their local context, incorporating both officially assigned mentors as well as more self-initiated relationships.

People: Sources of Induction Support Systems

In-school Connections

The induction literature frequently discusses the relationship between early career teachers and mentor teachers. Ingersoll and Strong's (2011) literature review highlighted evidence from past studies that mentoring programs had a positive impact on the performance and retention of early career teachers. Stanulis and Floden (2009) reported benefits from an intensive form of mentoring that included mentors working closely and collaboratively with early career teachers: observing teaching, co-planning, and jointly analyzing student work. Finally, Davis and Higdon (2008) described how frequent "just-in-time" assistance from mentors was perhaps the most valuable aspect of an induction support program. However, despite these benefits, finding trusted mentors can still be a challenging task (Fantilli & McDougall, 2009).

Early career teachers also benefit from receiving supportive communication from school leadership (Fantilli & McDougall, 2009; Ronfeldt & McQueen, 2017). For instance, Thomas et al. (2019) found that principals play a key role in welcoming early career teachers and organizing induction support structures. Furthermore, numerous studies have shown that inadequate support

from the school administration is one of the main factors in early career teachers' decisions to leave a teaching position (e.g., Fantilli & McDougall, 2009; Ingersoll & Strong, 2011).

Early career teachers' in-school peer relationships are also important (Thompson et al., 2013). Fresko and Alhija (2015) found that induction seminars could serve as learning communities for early career teachers, offering participants the benefit of emotional support from peers with the same professional status rather than hierarchical relationships. Cuddapah and Clayton (2011) studied how peer learning in a local, district-wide cohort helped early career teachers learn about issues such as classroom management and finding teaching resources.

Out-of-school Connections

Research has also shown that early career teachers often seek induction supports beyond their local context through informal, "school-external" networks that include family members, friends, and former instructors and classmates from preparation programs (März & Kelchtermans, 2020). These relationships can provide early career teachers an outlet to discuss concerns related to rules and norms inside their schools.

In addition to existing personal relationships, the Internet can aid early career teachers in the ongoing process of learning to teach "by providing new avenues to access distributed expertise" (Putnam & Borko, 2000, p. 11). Internet-supported, out-of-school connections have been studied for at least 25 years, long before the advent of social media. An early example was Singletary and Anderson's (1995) chapter on computer-mediated teacher induction. More recently, Smith Risser (2013) followed one early career teacher's development of a mentor network through Twitter, and Bartell et al. (2019) described how teachers can connect with allies for justice-oriented teaching through social media movements like #EduColor. However, with more voices offering purported expertise, early career teachers face a challenge of reconciling conflicting messages

about what and how to teach (Thompson et al., 2013). These studies notwithstanding, the literature has rarely connected the needs of early career teachers with social media use, despite a growing body of research exploring how teachers use social media for professional learning.

Spaces: Locations of Induction Support Systems

Local Spaces

Spaces that host induction supports have most often been studied in a local, offline context. School buildings are the most common spaces, incorporating subspaces such as early career teachers' classrooms where mentor teachers can observe and provide feedback (Stanulis & Floden, 2009) or paraeducators can provide additional assistance (Kang & Berliner, 2012), collaborative planning meetings (Fantilli & McDougall, 2009; Kang & Berliner, 2012; Ronfeldt & McQueen, 2017), peer or mentor teachers' classrooms where early career teachers can observe and ask questions afterward, staff meetings, the teachers' lounge, etc. Local spaces also include locations nearby, but outside the school building, such as seminars, workshops, and other district-sponsored professional development (Cuddapah & Clayton, 2011; Fantilli & McDougall, 2009; Fresko & Alhija, 2015; Kang & Berliner, 2012; Ronfeldt & McQueen, 2017).

Social Media Spaces

In addition to these local, offline contexts, online spaces are also potential locations of induction supports, but these have seldom been studied with early career teachers specifically in mind. Still, the literature has found that educators (broadly defined, not specifically early career teachers) regularly use social media to connect with people beyond their local school, often around the world (Beach, 2017; Macià & García, 2016; Trust, 2012). Educators have described appreciating how connections through social media provide freedom from temporal or geographical constraints, offering perspectives more diverse than would be available locally (Hur

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& Brush, 2009; Prestridge, 2017; Trust et al., 2016). Social media connections are particularly helpful for educators struggling with professional isolation (Carpenter & Krutka, 2014; Trust & Horrocks, 2017), such as those working in a small elementary school with only one teacher per grade level (Hur & Brush, 2009) or teaching a specialized content area like computer science (Yadav et al., 2016). In addition, Rehm and Notten (2016) found that educators continued to form new social connections as they spent more time on the social media platform Twitter.

Social media host spaces for educators' professional learning (and hold the potential for induction support systems) through broad platforms such as Facebook (Kelly & Antonio, 2016; Ranieri et al., 2012), Instagram (Carpenter et al., 2020), Pinterest (Hu et al., 2018; Sawyer et al., 2019; Schroeder et al., 2019), and TeachersPayTeachers.com (Koehler et al., 2020; Shelton & Archambault, 2019). These platforms, in turn, often host distinct subspaces such as teaching-related subreddits like r/Teachers and r/education (Staudt Willet & Carpenter, 2020, 2021) as well as many education-related Twitter hashtags: #Edchat for broad education conversation (Staudt Willet, 2019; Xing & Gao, 2018), #michED for educational concerns in the U.S. state of Michigan (Greenhalgh et al., 2020), #NGSSchat for discussions of science teaching standards (Rosenberg et al., 2020), and #SocialMediaSyllabus and #MarginalSyllabus for collaboratively developing teaching syllabi (Greenhow et al., 2019).

These social media spaces further expand educators' opportunities for accessing expertise and informal mentoring (Greenhow & Lewin, 2016) through content-oriented as well as socially oriented interactions (Greenhow et al., 2009; Staudt Willet et al., 2017; Staudt Willet & Carpenter, 2020, 2021). Content-oriented interactions are related to educators' use of social media to retrieve educational resources (e.g., Carpenter & Krutka, 2014; Hu et al., 2018; Krutka et al., 2017; Trust et al., 2016). Carpenter and Krutka's (2014) survey reported that 96% of respondents had shared

or acquired educational resources on Twitter. Duncan-Howell's (2010) survey study found that educators wanted to select the content of their professional development, seeking professional learning related to contextualized classroom practices. An emphasis on content may mean that some educators participate on social media primarily for the purpose of observing and obtaining resources rather than contributing new content or interacting with other people (Bozkurt et al., 2020).

There are potential challenges related to an orientation toward content. To start, because of the volume of resources available through social media, educators may have difficulty finding relevant resources. Past research has also shown that low-quality and problematic resources are disseminated online alongside legitimate ones (Sawyer et al., 2019). Also, the global scope of resources raises a *local-global tension* where the plethora of available resources must be filtered and adapted to be appropriate for a specific educational context (Jones & Preece, 2006).

Socially oriented interactions on social media can be marked by numerous possibilities, such as collaboration (Davis, 2015; Greenhow et al., 2019; Xing & Gao, 2018) as well as seeking emotional encouragement and restoration of energy for teaching (Carpenter & Krutka, 2014; Trust et al., 2016). However, there are potential challenges related to social interactions as well. Carpenter and Harvey (2019) found that educators can be frustrated by what other educators post on social media, and other research has reported on the prevalence of self-serving behaviors amongst educators on social media (e.g., Prestridge, 2019; Staudt Willet, 2019). Lantz-Andersson et al. (2018) speculated whether social media participation fosters collaboration or competition. Additionally, increased connectivity also increases expectations that educators should always be available and accessible to students (Fox & Bird, 2017; Selwyn et al., 2017).

Purpose and Research Questions

The purpose of this study is to explore the support systems that early career teachers construct during induction and how they use social media for this purpose. Framed with PLN components of tools, people, and spaces, the review of literature showed that more is known about early career teachers' support systems with regard to formal tools, in-school people, and local spaces. Less is known about early career teachers' experiences and challenges as they intersect with informal tools, out-of-school people, and social media spaces. This gap prompts four research questions:

- **RQ1.** What reasons, if any, do early career teachers report for constructing support systems during induction?

- **RQ2.** What tools for professional learning, if any, are early career teachers seeking when constructing support systems during induction?

- **RQ3.** With whom do early career teachers connect when constructing support systems during induction?

- **RQ4.** How, if at all, do early career teachers use social media platforms to expand the tools, people, and spaces available when constructing support systems during induction?

<div align="center">**Method**</div>

In this study, I interviewed early career teachers to ask them about their experiences constructing support systems of tools, people, and spaces during induction and using social media for this purpose. I conducted interviews to the point of *theoretical saturation* (Glaser & Strauss, 1967; Glesne, 2016), when three successive interviews did not seem to introduce new themes.

Participants

Table 1: *Attributes of Interview Participants*

Name	Location	School Type	Student SES	Teacher Experience	Grade Level	Subject	Role
Amelia	Suburban, West	Public	Low	3rd year	Elementary (K, 5th)	Music	Itinerant Specialist
Anne	Urban, Midwest	Public	Low	3rd year	Elementary (1st)	All	Classroom
Blair	Urban, Midwest	Private	High	3rd year	Elementary (PreK-5th)	Tech	Support Staff
Hallie	Suburban, Midwest	Public	High	1st year	Elementary (3rd)	All	Classroom
Julie	Rural, Midwest	Public	Low	3rd year	Middle (8th)	ELA	Classroom
Mike	Suburban, Midwest	Public	High	3rd year	High School (9th-12th)	Math	Classroom
Simone	Suburban, Midwest	Public	High	2nd year	Elementary (1st)	All	Classroom
Taylor	Suburban, West	Private	High	3rd year	Elementary (K-4th)	Physical Education	Specialist
Wallace	Suburban, Midwest	Public	Low	2nd year	High School (10th-11th)	ELA	Classroom

Participants were U.S.-based PK-12 teachers who had been working in education for three years or less. I recruited nine participants from two graduate programs in education at Michigan

State University (Table 1); all names are pseudonyms. Both programs are fully online (even prior to COVID-19) and encourage students to use social media for professional learning. Eight of the interviewees were white; one was African American (Simone). Seven were women; two were men (Mike and Wallace). Seven had undergraduate teacher preparation; two did not (Blair and Taylor). Although this group is a convenience sample because of my connections to these programs, it is also a purposeful sample intended to provide information-rich cases (Lincoln & Guba, 1985) across geographic location, students' socioeconomic status (SES), and teachers' assignments (i.e., grade level, subject, and classroom role).

Data Collection

I developed the interview protocol by recruiting four early-career teachers to pilot an initial interview protocol. I conducted pilot interviews using the video-communication software Zoom (https://zoom.us/), accepting the affordances and constraints of a video-based modality (Seitz, 2016). I asked pilot interviewees to critically evaluate the interview questions and give feedback on how questions could be improved (Glesne, 2016). In the final interview protocol (Appendix D), I grouped interview questions to parallel the study's research questions, starting with asking about challenges and struggles of being an early career teacher, whether they have sought support for these (and from whom), and whether they use social media to access these supports.

To recruit the final interview participants (distinct from the pilot interviewees), I emailed the two graduate programs' student listservs (Appendix A), asking prospective participants to complete an online survey to indicate their interest (Appendix B). I again hosted one-on-one, semi-structured interviews on Zoom, using built-in functionality to record audio and video. I also took my own notes during the interviews. At the start of each interview, I read aloud an informed-consent statement (Appendix C).

Data Analysis

After completing interviews, I transcribed audio recordings into text. I used the automated transcription software Otter (https://otter.ai/) to provide an initial audio-to-text draft. I manually corrected the transcription while listening to the audio and pausing frequently. I then analyzed transcripts in ATLAS.ti (https://atlasti.com/), qualitative analysis software that allowed me to code, refine, track, and compare themes across interviews.

I followed Saldaña's (2016) procedures for open-ended qualitative analysis, using an *eclectic coding* approach. I worked through several distinct "cycles" of analysis; each cycle was an iterative step of coding and recoding the data. Starting with several a priori themes drawn from the literature (e.g., sharing/finding resources, sharing ideas/asking questions), I assigned initial *codes* (i.e., a summative word or phrase) to *quotations* (i.e., distinct sections defined by topic of conversation) that captured the essential essence of that section of text (Saldaña, 2016). Over the course of subsequent cycles, I cut a priori codes that did not usefully describe the content of what interview participants said (e.g., "self-seeking contributors," drawn from Prestridge [2019]), I added emergent codes drawn from participants' words (e.g., "not encouraged, but everyone uses TeachersPayTeachers"), and I synthesized codes into new wholes (e.g., "browsing"), called *categories*. With each new coding cycle, the number of codes decreased and became more focused. I used 288 codes in the first coding cycle, which I synthesized into 160 codes during the second coding cycle, and so on. In total, I worked through five distinct coding cycles to identify 11 emergent categories in the final codebook (Appendix E).

As an illustrative example of the coding process, in the first cycle, I began with a priori codes like "sharing/finding resources" and "sharing ideas/asking questions." In later cycles, I rearranged these two codes into simpler categories of "sharing" and "finding." I also established

numerous in vivo codes in the first cycle, such as "not encouraged, but everyone uses TeachersPayTeachers" and "I'm the worst when it comes to social media." Later, these two codes were subsumed into the category of "finding."

Trustworthiness of Research

I used "systematic procedures, employing rigorous standards and clearly identified procedures" (Creswell & Miller, 2000, p. 129) to establish research validity. First, I used *triangulation*, "a systematic process of sorting through the data to find common themes or categories by eliminating overlapping areas" (Creswell & Miller, 2000, p. 127), in the process of looking for themes across participants, creating codes, and making revisions across five distinct coding cycles.

Second, I created an *audit trail* by documenting my process in a series of analytic memos (Creswell & Miller, 2000). From these memos I established a codebook (Appendix E), where I named categories, provided definitions, and gave examples. In the memos, I recorded key observations, connections, and inferences made during the coding process. For instance, in one memo from the first coding cycle, I wrote:

I'm going to need to tease apart two common, initial codes related to PURPOSE: (a) sharing/finding resources and (b) sharing ideas/asking questions. Seems like the difference is a focus on inspiration (big ideas and resources) vs. interaction (asking and answering). Potential new codes:

- Grabbing resources (agency low)

- Browsing for ideas/inspiration (agency medium)

- Asking questions (agency high)

- Sharing ideas and resources (agency high)

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That is, in that very first phase of qualitative analysis, I had two codes (i.e., sharing/finding resources and sharing ideas/asking questions) that overlapped significantly while also seeming too broad. I worried that the breadth of these codes would obscure more nuanced processes. Two of my final categories, "browsing" and "asking," first emerged from this early memo.

Third, after completing five coding cycles, I recruited a second coder to test the *inter-rater reliability* of categories in the codebook. At this stage, I had identified 264 total quotations across the nine interviews. The mean number of quotations per interviewee was 29.33 ($SD = 3.71$; median $= 30$), with a range of 24 to 35. I randomly sampled 10% ($n = 27$) of the quotations, which the second coder and I independently analyzed, following the codebook. We then met to discuss discrepancies and update the codebook. As an example, during this process, I decided to remove the categories "teacher capital" and "observational learning." These proved to be difficult concepts for two coders to observe and code consistently.

The second coder and I repeated this pattern of analyzing a sample and discussing discrepancies five times, coding a new sample in each round, for a total of 135 quotations. In the fifth and final round, our percent agreement ranged from 88.89% to 100% and Cohen's kappa ranged 0.65-1.00, representing "substantial" to "nearly perfect" inter-rater agreement (Landis & Koch, 1977, p. 165). With a finalized codebook and acceptable reliability scores, I recoded the entire corpus of interview data in a sixth distinct coding cycle.

Finally, I conducted *member checks* by sending a draft of the results section to interviewees, asking them if they would like to provide any clarification to how I represented them in the reported findings (Creswell & Miller, 2000). I received responses from everyone, and they all affirmed their words as I reported them. The only correction I received was from Anne, who clarified that it was her grade-level partner teacher who had left midyear, not her mentor teacher.

Results

RQ1. Reasons for Constructing Induction Support Systems

In answering the first research question, I found three reasons that early career teachers construct induction support systems: change, scarcity of resources, and conflicting teaching beliefs. These themes were discussed by multiple interviewees (Table 2).

Table 2: *Reasons for Constructing Induction Support Systems*

Reason	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Change	●	●	●	●	●		●		●
Scarcity of resources	●	●	●	●	●		●		
Conflicting teaching beliefs		●		●	●		●		

Change

Although some of the changes, disruptions, and uncertainty experienced by early career teachers are inevitable parts of transitioning into a new career, all but two early career teachers identified additional challenges related to this theme. Several interviewees described these changes in representative ways. For instance, Simone noted that the field of education is constantly in flux, and so inevitably there are additional professional development sessions to attend. Anne and Simone were both handed new curricula each year, and to them it felt like the process of adjusting to a new plan never seemed to stop. Although summer planning seemed to help, Amelia, as an itinerant music teacher, did not receive her final teaching assignments until October. Meanwhile, Julie and Wallace started their teaching careers mid-year, so they entered situations where students' experiences had been disrupted by the previous teacher's departure. As a final example, Anne experienced a high degree of personnel turnover in her under-resourced school, even in her

first few years of teaching. She had to adjust to a new principal at the start of her third year, and her grade-level partner teacher also left in the middle of that year.

Scarcity of Resources

Most early career teachers constructed induction support systems because of a scarcity of resources. This theme was particularly pronounced for two teachers: Anne and Amelia described numerous challenges related to scarcity: absence of curriculum, missing classroom materials, poor physical conditions in the school, and a limited budget for teaching supplies. The physical environment in Anne's school created an especially difficult setting for work. Her classroom, a modular trailer, lacked insulation to keep out cold Midwestern U.S. winter winds and hosted bugs, requiring her to store personal belongings in sealable plastic bags during the day. Amelia, as an itinerant music teacher serving several schools in a suburban district, lacked a home classroom and had to teach with whatever supplies she could carry around with her.

Conflicting Teaching Beliefs

Nearly half of early career teachers also described tension between their previously held beliefs about teaching and those encountered in the schools where they worked. Several of their comments were representative. For instance, Julie experienced dissonance with her school's strict policy on classroom management and student discipline, and she voiced her concerns to her principal:

> I'm only going to do RTC [Responsible Thinking Classroom] when it gets to this point. I'm not going to do RTC every single day. That's just not something that I can justify. And for a lot of those kids, it doesn't work. I don't really see the success in it.

Hallie, in her first year as a teacher, described conflict with more experienced colleagues: "I have one teacher who just wants to use curriculum from 30 years ago. And I'm just like, 'I can't do it.'

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There are just completely irrelevant things." Hallie also advocated for the inclusion of more anti-racism materials throughout the year, not just confined to Black History Month in February.

RQ2. Tools in Early Career Teachers' Induction Support Systems

In answering the second research question, I found three categories discussed by each interviewee: tools for planning, tools for enacting practice, and tools for connecting socially. Each of these categories was voiced by all interviewees (Table 3). These tools were all *self-directed* (i.e., voluntary and informal), meaning that early career teachers pursued them in addition to required induction programs (e.g., district professional development workshops, assigned mentor teachers, professional learning communities). Wallace articulated why he put in the extra work: "I just can't think of a time that I didn't ask someone for help… I can't think of any time that I would just fail and just accept it and not reach out." In the following paragraphs, I describe these tools in more detail.

Table 3: *Tools in Early Career Teachers' Induction Support Systems*

Tools	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Planning	●	●	●	●	●	●	●	●	●
Enacting practice	●	●	●	●	●	●	●	●	●
Connecting socially	●	●	●	●	●	●	●	●	●

Tools for Planning

Each interviewee described seeking planning tools, which included generating ideas, creating curriculum, writing lesson plans, and finding appropriate resources. For instance, Taylor and Blair, the only two interviewees without undergraduate teacher preparation, struggled with creating a semester-long teaching plan. As a result, they sought supports earlier in the planning process, asking for help from their in-school professional learning communities and social media

connections. The remaining interviewees did have undergraduate training, but they also had difficulty in planning. For instance, because her district did not assign a set curriculum to follow, Hallie wrestled internally when planning: "What am I supposed to do? Like, what do you actually want me to do?" She also acknowledged the openness of her colleagues, but limitations remained: "There are teachers that are willing to help, but because my team doesn't do a lot of the actual same activity, it doesn't really help to share planning resources, always." Hallie made some decisions independently, and at times she also turned to social media for supports. Taking a slightly different approach than the other interviewees, Julie tended to look for supports toward the end of her planning process. She turned to social media to refine an existing plan to add "some extra TeachersPayTeachers flair."

Some early career teachers also struggled with the opposite problem: having too many planning resources. This necessitated navigating an overwhelming number of possibilities of what and how to teach. At times, interviewees found themselves inundated with unfiltered ideas and resources from school colleagues. For instance, Julie described the effect of being offered too much planning help: "I felt like a lot of teachers were saying, 'Here, try this. Here, try this.' And I didn't really have the time to fully plan out units or plan out weeks at all." Julie said she would have preferred to access planning supports only when she needed them, rather than the overwhelming, unidirectional flow of ideas from colleagues to her.

Tools for Enacting Practice

All interviewees also sought tools for enacting practice, looking to improve instruction and interactions with students in the classroom. For instance, Amelia, Anne, and Julie each talked extensively with colleagues, mentor teachers, and principals about difficult classroom management situations they had encountered and how they navigated these. As another

representative example, Hallie discussed with her professional learning community "embedding real learning ideas" in discussions of current events like voting instead of abstractly "reading a story and making it work with a standard." She observed that the process of improving her teaching practice benefited both her and her students: "I enjoy my job a lot more teaching real things, and I think students come away with it more than just memorizing, and being able to do a standard on a standardized test." Early career teachers also went to social media occasionally for tools for enacting practice. For instance, Taylor found YouTube videos to be especially useful for demonstrating activities to her physical education (PE) classes.

Tools for Connecting Socially

Finally, all early career teachers also reported positive social benefits of connecting socially with colleagues through grade-level or subject-specific professional learning communities in a school, and they looked for tools that helped reinforce these relationships as well as form new social connections. As particularly strong example, Taylor's PE department shares an office space where teachers convene regularly throughout the day. Taylor described this professional learning community as a "tight-knit group" with a "group mentality" that functions not just as a source of teaching ideas, but a loyal and supportive in-group. When she needed help, her professional learning community was the first place Taylor looked. Interviewees also described benefits of using social media to connect with others. Anne appreciated being able to vent her frustrations with people beyond her immediate context, and Simone noted the benefits of hearing perspectives and diverse opinions from those outside her local area.

RQ3. People in Early Career Teachers' Induction Support Systems

In answering the third research question, I found that early career teachers connected with people both within their local school as well as beyond when constructing support systems during

induction. These relational themes were discussed by each interviewee (Table 4), and I describe them further in the following paragraphs.

Table 4: *People in Early Career Teachers' Induction Support Systems*

People	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
In-school	●	●	●	●	●	●	●	●	●
Out-of-school	●	●	●	●	●	●	●	●	●

In-school Connections

Each interviewee connected with colleagues inside their school building when constructing induction support systems. These people were associated with formally required parts of their support systems (e.g., mentor teachers, professional learning communities) as well as informal opportunities voluntarily initiated by the early career teacher, such as talking to colleagues in the teachers' lounge. Occasionally, these in-school relationships were reinforced through social media platforms (e.g., Blair and Wallace connected with coworkers on Facebook).

Out-of-school Connections

Each early career teacher also connected with people beyond their school buildings, whether local or more far-reaching, when constructing induction support systems. Some districts required formal gatherings for early career teachers, such as district-wide professional development workshops. Amelia's district offered optional connections through a district-wide Facebook group for sharing resources and a Microsoft Teams account where teachers could talk between official meetings. More than half of the early career teachers interviewed (Amelia, Anne, Hallie, Mike, and Wallace) had friends and family members who were also educators, and they would look to these personal connections for informal support.

Interviewees also joined groups organized to support teachers. For example, during her undergraduate years, Simone became a member of a sorority for African American women, and after graduation, she continued to attend local gatherings of sorority sisters in her city. Many sorority members are also teachers, and Simone found them to be an important source of emotional and professional encouragement as she started teaching. Mike was a member of a national organization that provided focused professional development for early career teachers, and he also regularly attended a local gathering of early career teachers that was organized in partnership between his district and the teacher preparation program at the nearby university. These examples are types of distributed networks, which extend beyond a teacher's school building but still rely on face-to-face meetups.

Finally, interviewees often connected with people online as part of constructing their induction support systems. They looked to social media for opportunities to vent their frustrations, seek solidarity, exchange ideas, and find resources—often with an explicit appreciation that these connections were not local.

RQ4. Social Media as Spaces for Constructing Induction Support Systems

In answering the fourth research question, I found three themes related to how early career teachers use social media as spaces for constructing induction support systems. First, early career teachers identified numerous possibilities for constructing induction support systems in social media spaces, spanning many platforms. Second, interviewees emphasized the importance of maintaining boundaries around their social media use, even for professional learning. Third, early career teachers engaged with social media supports in various ways: browsing, asking, and exchanging.

Early career teachers decided how to use social media for professional purposes largely on their own. Only one interviewee (Taylor) was familiar with their school's social media policy for teachers. Even then, she only knew about the policy because a teacher had been fired recently for violating it. This means that schools and districts were not providing guidance to teachers (or the guidance given was not making an impression on early career teachers) regarding their use of social media, let alone offering recommendations of best practices to teachers desiring to expand induction support systems through social media.

Possibilities for Constructing Induction Support Systems in Social Media Spaces

Early career teachers used numerous social media platforms when constructing induction support systems that incorporated a variety of people from inside and outside their schools (Table 5). Interviewees described how they took into consideration the features of various social media platforms to maximize the benefits of use.

Table 5: *Social Media Platforms in Early Career Teachers' Induction Support Systems*

Purpose	Platform	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Planning, in-school	Google Classroom									●
Planning, out-of-school	Blogs	●		●			●		●	
	Email listserv			●						
	Facebook	●			●			●		●
	Instagram		●			●		●	●	
	Microsoft Teams	●								
	Pinterest		●		●		●			●
	Teachers Pay Teachers	●	●		●	●	●	●	●	●
	Twitter			●			●			
	YouTube			●					●	

Table 5 (cont'd)

Purpose	Platform	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Enacting practice, out-of-school	Facebook							●		
	YouTube								●	
Connecting socially, in-school	Facebook			●						●
Connecting socially, out-of-school	Facebook		●	●			●	●		●
	Instagram		●							
	Twitter			●						

Early career teachers talked most frequently about using social media to seek planning tools from out-of-school connections. All the interviewees named multiple social media platforms they found to be helpful for this purpose. Early career teachers seemed to especially appreciate content-sharing platforms where others regularly shared educational resources: TeachersPayTeachers.com, Instagram, Pinterest, and YouTube. Mentioned less often, but still important, were social media platforms where early career teachers could easily ask questions to request specific supports (e.g., Facebook, Twitter, Microsoft Teams).

Social media platforms also offered the possibility of seeking planning tools from in-school connections, but this affordance was mentioned by only one interviewee. Wallace described how peer 10th-grade English teachers in his school used a Google Classroom shell (i.e., a blank template in a learning management system) as a repository for sharing ideas and resources with each other.

In addition, two early career teachers discussed how social media help reinforce local relationships by offering opportunities to find tools for connecting socially with in-school colleagues. For instance, Wallace worked at his school for several years as a staff member prior to being hired to teach midyear. Because of his prior experience, he was connected to many school

colleagues on Facebook. He believed that this additional layer of personal connection (e.g., seeing photos of coworkers' children) made it easier for him to ask coworkers for help during his transition into teaching.

Much more often, interviewees discussed how they used social media to make social connections beyond their local school. For instance, Anne described the helpfulness of venting outside her local context, where so many of her frustrations stemmed: "A lot of times, if I go to social media, it's for an outlet, for frustrations, and difficulties." Simone participated in a Facebook group of teachers from all over the U.S., and she appreciated the perspective of being able to see "what other teachers are dealing with in their district or their state like, 'Are you, are you experiencing these same things?' And they are, and it's nice to know that you're not the only one." She appreciated being reminded that she was not alone feeling the way she did, and that there were other ways to teach besides what she had experienced in her own school and district. These perspectives seemed particularly important to Simone as a Black teacher whose preparation program had been overwhelmingly white, and whose school of employment was diverse but under-resourced.

Finally, two early career teachers (Taylor and Simone) described using social media to find tools for enacting practice from out-of-school connections. Taylor subscribed to a PE teacher's YouTube channel to get inspiration for her own classes. YouTube's video medium was particularly useful for her to be able to see demonstrations of activities (e.g., drills, games) that she could facilitate in her own PE classes. The teacher Facebook group in which Simone was a member had a culture where "asking questions, asking if we deal with this or do you have any suggestions" was common, and this helped Simone think through issues in her own classroom. None of the

interviewees linked their use of social media to tools for enacting practice from in-school connections, so that purpose is absent from Table 5.

Boundaries Around Social Media Use

In addition to the possibilities afforded by social media as spaces for constructing induction support systems, early career teachers noted several important boundaries they tried to maintain around their social media use: personal-professional separation, time management, and social comparison. These boundary themes were discussed by a subset of interviewees (Table 6).

Table 6: *Boundaries Maintained by Early Career Teachers on Social Media*

Boundary	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Personal-professional separation	●	●	●	●	●	●	●	●	●
Time management				●		●	●		
Social comparison		●				●			

First, each interviewee described how maintaining separation between their personal and professional lives on social media was important to them. For instance, Hallie and Simone were more compelled by maintaining personal-professional boundaries than maximizing social media benefits, and they chose to limit their social media use for this reason. Julie compartmentalized, using some social media platforms for personal reasons and others for professional purposes. She succinctly summed up the benefit of this approach: "I know what I'm getting myself into when I open each one of the apps."

Time management for social media use was another important boundary for three interviewees. For instance, Simone had been actively working on improving her time management skills, with a goal of not bringing work home with her. This meant she was less inclined to voluntarily use social media in the evening for professional learning. Similarly, Mike was very

time-conscious and deliberate in limiting his social media use: "If I don't have time for myself, then I'm doing [my students] a disservice. I have to have that shut-off button."

Anne and Mike named a third set of boundaries they believed were important to maintain: those around unhelpful social comparisons. Anne, teaching in an under-resourced school with a challenging physical environment, noted how unhelpful it was to compare herself to teachers in other districts who posted photos of their pristine classrooms on social media:

> Back to the Instagram thing, I do follow some teacher accounts. Sometimes I feel like, it makes me feel like a crappy teacher, because I'm seeing them do all these things. And I'm like, "I'm tired right now. If I did all those things, I would either never sleep, or I would be just doing those things. I wouldn't be able to follow through with them and actually teach with those tools that they're spending hours making on the weekend." And it just, it makes me feel like I should be doing more. But I already feel like I'm doing more than I can keep up with.

Anne found that the visual, highly curated nature of Instagram drew her into unrealistic expectations for herself and demotivated her to construct an induction support system. Because of these unhelpful social comparisons, she decided to limit her Instagram use. Mike described a similar issue when seeing his best friend's Facebook posts. The income level and number of vacation days inferred from his friend's travel photos caused Mike to question his own choice of a teaching career. He named these feelings of envy as another reason for limiting his time on social media.

Ways of Engaging on Social Media

In addition to the possibilities afforded by social media and important boundaries to maintain around them, early career teachers also described several distinct ways of engaging on

these platforms: browsing, asking, and exchanging. All interviewees described browsing on social media but asking and exchanging were less common (Table 7).
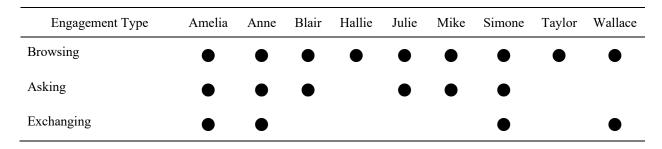
Table 7: *Ways Early Career Teachers Engage on Social Media*

Engagement Type	Amelia	Anne	Blair	Hallie	Julie	Mike	Simone	Taylor	Wallace
Browsing	●	●	●	●	●	●	●	●	●
Asking	●	●	●		●	●	●		
Exchanging	●	●					●		●

First, each early career teacher engaged by *browsing* on social media, which included activities such as searching for resources on TeachersPayTeachers.com, watching YouTube videos, and scrolling through Pinterest. Browsing was not necessarily a passive form of participation. For instance, Julie was active and purposeful: "I feel like I filled a lot of gaps. If I couldn't find something, I'd go to social media to find it." Amelia started with a specific need in mind, visiting to TeachersPayTeachers.com to find lesson plans for substitute music teachers. To save time, Mike developed a system that would allow him to skim through Pinterest more quickly: "I don't engage with it, I don't go on and search for things. I have it set up where it sends me one email a day with about 10 different math activities or blog posts." Despite benefiting from browsing social media, Wallace apologized in his interview for being a "taker;" he felt bad that he was not contributing, not giving back to others.

Second, two-thirds of the interviewees engaged on social media by *asking*, which included posting about specific resources needed. For instance, Julie expressed a desire for more of this: "I wish there was more a way to use social media like, 'Here's a problem I'm dealing with; can people help me with this problem?'" Amelia described several such opportunities, albeit confined to her local school district. She participated in a Facebook Group composed of music teachers in

her district, where colleagues could post questions and requests for sharing musical instruments between classrooms. Amelia's professional learning community included teachers from 10 schools and, at the time of our interview, had just begun using Microsoft Teams as "a way for us to meet and actually talk about stuff… a way for us to communicate in the interim between our two-week meetings." For Amelia, both the Facebook Group and Microsoft Teams were spaces where she could ask for what she needed.

Third, nearly half of early career teachers engaged on social media by *exchanging*, which included seeking supports through interaction and dialogue to satisfy mutual interests. This type of engagement was characterized by group membership. The practice of asking was present here as well, but exchange also included contributing ideas, giving advice, and conversing to determine best practices. For instance, even as an early career teacher, Simone found that she was able to give well-received advice in a teacher Facebook group.

Discussion

In this study, I address a gap in the literature related to early career teachers' induction challenges and support systems, specifically, exploring the specific needs of early career teachers as well as the expanded range of tools, people, and spaces available through social media. Some themes reported in the findings were consistent across all interviewees, whereas other themes varied by participant. I discuss how results demonstrated both consistency and variance in the following paragraphs, and I connect these interpretations to the literature.

Consistency of Results

I found a number of themes to be present across all nine interviews. Each early career teacher I interviewed sought tools for planning, enacting practice, and connecting socially. They found these tools through people both within their schools and beyond. All of them engaged on social media by browsing, and they all had made choices about keeping personal and professional parts of their lives separate on social media.

The most striking point of consistency across all interviewees was how they enacted identity-agency. As defined in the Framework section, identity-agency means taking responsibility for and actively investing in one's own self-development as a teacher (Ruohotie-Lyhty & Moate, 2016), starting by recognizing a challenge, forming a strategy to overcome that challenge, and then implementing the strategy (Bandura, 2001). In the present study, it was evident that each of the early career teachers enacted identity-agency when making decisions regarding if and how to construct their induction support system. Interviewees consistently described a purposeful sense of having a job to do and a determination to find the tools, people, and spaces necessary to do that job well. For instance, Julie, Taylor, and others were enacting identity-agency when they realized they were missing teaching resources and went to specific social media platforms to find what they

needed. Anne enacted identity-agency by venting in appropriate social media spaces as an outlet for the frustrations accumulated from teaching under challenging conditions. Simone enacted identity-agency by seeking broader perspectives on social media.

Interviewees also exercised agency when they chose *not* to pursue some of the opportunities available to them. On one hand, social media provide just-in-time professional development (Greenhalgh & Koehler, 2017) and access to expertise beyond a teacher's local school (Beach, 2017). However, these affordances came with a cost, as early career teachers described feeling pressure to be constantly available with little distinction between professional and personal contexts (Fox & Bird, 2017). In this study, each interviewee perceived benefits of expanding induction support systems through social media, but they were all also mindful of preserving personal-professional boundaries, echoing the sentiments of other teachers in past research (e.g., Trust & Prestridge, 2021). These practices match the self-reflection and self-awareness that Fox and Bird (2017) argued are necessary for teachers to exert control (i.e., exercise agency) over how and how much they connect with others through social media. In these instances, declining to pursue some opportunities meant that the early career teacher would have more time and energy to actively invest in their self-development elsewhere.

The consistency in this subset of results may be related to the ways that participants in the present study were similar. Significantly, they were all early career teachers pursuing graduate degrees. This shared background may suggest common professional goals (Trust & Prestridge, 2021) related to the improvement of planning, enacting practice in the classroom, and connecting socially. In addition, participants likely also shared professional limitations in the form of confidence and time (Trust & Prestridge, 2021), which for early career teachers would be low and limited, respectively. These factors may connect to interviewees' shared social media behavior of

engaging in the least demanding way (i.e., browsing) and trying to keep personal and professional spheres separate.

These consistent themes across interviewees connect to and extend the literature on teacher networks. For instance, Bartell et al. (2019) described how early career teachers "weave interconnected webs of professional relationships based upon their needs" (p. 303) that may include social media conversations. März and Kelchtermans (2020) found that early career teachers' support systems extended beyond the mentor-mentee relationship to also incorporate "school-external networks" (p. 8) that included educational advisors, former teacher educators, and classmates from their teacher education. In the present study, findings demonstrate that early career teachers' webs of relationships include the two worlds of the teacher preparation program and the school of employment (Feiman-Nemser & Buchmann, 1985; Horn et al., 2008; März & Kelchtermans, 2020; Thompson et al., 2013) but are more complicated still. Here, early career teachers also described supportive phone calls with family and friends, membership in teacher organizations, and social media use.

Variance of Results

In addition to consistent themes, results also demonstrated several themes that varied between interviewees. To start, there were differences in the underlying reasons why early career teachers constructed induction support systems. Interviewees experienced change, scarcity of resources, and conflicting beliefs quite differently. Early career teachers also reported varying degrees of social media engagement in terms of asking and exchanging, and the purposes for which they used various social media platforms differed as well. Finally, several participants described their need to maintain boundaries around social media use for the sake of time management or social comparison, but this sentiment was not shared by all.

An agentic perspective on PLNs, which foregrounds the early career teachers' responsibility for ensuring their support system meets their needs, provides insight into the variance of results. The results here follow Tao and Gao's (2017) finding that teachers were consistent in making agentic choices for their professional development but varied in the specifics of their agentic actions. In this study, all interviewees described enacting identity-agency, but *how* they did so differed.

Differences in teachers' backgrounds may explain some differences in how they construct support systems (Wray & Richmond, 2018), but not all. For instance, only three interviewees (Hallie, Mike, and Simone) reported time management around social media use as being important to them. Hallie and Mike came from extremely well-resourced suburban public schools, whereas Simone's school was under-resourced. The enactment of identity-agency in these examples does not seem to be entirely explained by a teacher's context; this is similar to Ruohotie-Lyhty and Moate's (2016) observation that preservice teachers were already investing in self-development even prior to entering into a professional teaching context. This seems to reinforce that PLNs are complex systems, and that dichotomies are insufficient for understanding them (Trust & Prestridge, 2021).

Considering agency as "the result of an accumulation of perceived positive outcomes" (Bartell et al., 2019, p. 302) may offer further insight. For instance, Simone's sense of identity-agency was strengthened by the affirmation she received in response to giving advice in a teacher Facebook group. In the language of Trust and Prestridge's (2021) model, there was a confluence of space dynamics, relationships, and confidence that helped Simone feel positive about her past engagement in the Facebook group and more likely to give advice again in that space. This may

suggest that early career teachers' decisions to construct and expand their induction support systems are related to both contextual factors (i.e., ecology) and experiences (i.e., identity-agency).

Finally, identity-agency is also likely related to how some early career teachers navigated conflicting beliefs about teaching. Nearly half of interviewees described ways they experienced their beliefs about teaching and learning conflicting with those held by new colleagues in their schools. Sometimes the process of reconciling differences was as straightforward as pausing for self-reflection in the midst of recognizing conflicting teaching beliefs from preparation programs and schools of employment (i.e., the two worlds pitfall; Feiman-Nemser & Buchmann, 1985; Horn et al., 2008), but other times the tensions were more complex. This is similar to Vaughn's (2013) findings of in-service teachers experiencing cognitive dissonance while attempting to align their instructional practice with their vision of teaching (i.e., enacting agency). For instance, Julie had to think carefully about how to go against her principal's expectations for student discipline, and Hallie had to decide how much to push her colleagues to incorporate more anti-racism curricular materials. These examples illustrate how early career teachers must choose the degree of conflict they are willing to have with colleagues around issues where educational thinking has changed in recent years. That is, variance in this theme is related not just to the presence of differing opinions, but also to early career teachers' capacity for and willingness to enact agency in these areas.

The variance of themes in a subset of findings reinforces that teaching is complicated by contextual realities and challenges—and that these complications are experienced differently by different study participants (Trust & Prestridge, 2021). Interviewees had different experiences as they entered the teaching profession, with varying degrees of resource availability and disruptions related to change. Some interviewees navigated changes related to new curriculum, staff transitions, and shifts in classroom assignments. In response to such changes, early career teachers

sometimes adapted how they constructed their induction support systems, including how they used social media (Carpenter et al., 2021; Veletsianos et al., 2019).

Understanding the variance of results may be aided by the ecological perspective on PLNs, which highlights that these support systems are composed of interconnected and mutually influential spaces: a learning ecology (Barron, 2006). The cumulative support system of tools, people, and spaces looked different for each interviewee (Trust & Prestridge, 2021). Although no single piece of a PLN is likely to meet all their needs, early career teachers in this study were able to construct a holistic support system that collectively helps them overcome induction challenges, reflecting Stevenson et al.'s (2019) findings. Early career teachers often looked in informal spaces for tools and people to expand their supports systems, including the in-school teachers lounge, phone calls with friends and family, and numerous social media platforms. These informal networks complemented and influenced formal professional learning and practice, similar to Peters and Romero's (2019) observations.

Implications

Jointly holding ecological and agentic perspectives on early career teachers' PLNs (i.e., their support systems) highlights a tension: the availability of more tools, people, and spaces also means increased demands on time and agency. Options available today far outnumber the two worlds identified by Feiman-Nemser and Buchmann (1985), as interviewees in this current study demonstrated. As the complexity of an early career teachers' support systems increases (Trust & Prestridge, 2021), the amount of agency required to seek induction supports seems to increase as well. Putnam and Borko (2000) voiced this argument two decades ago: new kinds of teacher learning communities offer new opportunities for improving educational practice, but they also introduce new tensions.

This study contributes new categories to the literature by exploring the support systems that early career teachers construct during induction and how they use social media for this purpose. In the following paragraphs, I describe implications of these findings for early career teachers, teacher educators, and education leaders—especially regarding how stakeholders can help relieve induction pressures from early career teachers. Finally, implications for researchers are discussed, naming limitations of the current study as well as directions for future work.

Implications for Early Career Teachers

Early career teachers in this study described how they grappled with issues related to the way social media platforms merge multiple contexts and bring together audiences that would normally be distinct—that is, *context collapse* (Marwick & boyd, 2011). In addition, interviewees talked about how they struggle to manage expectations to be being constantly available to students and parents, reflecting themes from past research (Fox & Bird, 2017). A consequence of context collapse and assumptions of availability is that early career teachers must constantly think about

their audience on social media; they are never sure whether their students, or parents of their students, are paying attention to their social media activity. Numerous interviewees expressed a desire to be free from such scrutiny, and their solution was to be less active on social media or to choose more private spaces, such as teacher Facebook groups. These findings are consistent with past work such as Burkell et al.'s (2014) study that showed Facebook users participated with an understanding that Facebook is a public and visible space, part of a broader system of *networked publics* on social media (boyd, 2007).

A related issue is early career teachers' struggle with social comparison. For instance, Anne wanted to use social media to vent to about the difficult circumstances in her under-resourced school and find needed materials, but context collapse through Instagram meant she was also seeing cute classroom designs from teachers in wealthy suburban districts. Rather than finding relief, Anne was exasperated by the passive, indirect reminders that other teachers possessed the resources, time, and inclination to elaborately decorate their classrooms. These experiences demonstrate how social media may elicit more feelings of competition than collaboration (Lantz-Andersson et al., 2018), leaving Anne to feel like "a crappy teacher." Participants in Carpenter et al.'s (2020) study made similar comments, reporting how using Instagram raised unrealistic expectations for themselves and made them feel like they were stuck in a "comparison spiral" (p. 9). Vogel et al.'s (2014) Facebook study also demonstrated negative effects of "upward" social comparison stemming from comparing oneself to a healthy-appearing or high-activity user. To minimize negative effects of comparison on social media, early career teachers may find better support through locally hosted (i.e., school- or district-sponsored) learning management system shells similar to the one organized by Wallace's school in Google Classroom. Reddit's anonymity may also be useful, as research has shown lower levels of performative and self-promotional

content in teaching-related subreddits than in some other social media spaces (Staudt Willet & Carpenter, 2021).

Implications for Teacher Educators and Education Leaders

A goal for teacher educators and education leaders should be *sustaining* early career teachers by attending to their lived experiences, not just *retaining* them (Clandinin et al., 2015). This does not necessarily mean removing all tensions, because conflicts may prompt further development of pedagogical reasoning, adaptability, and skills for contextualization (Horn et al., 2008). However, the degree of difficulty should be scaffolded so that early career teachers are not overwhelmed.

One way to sustain early career teachers is by expanding notions of what "counts" for professional development. Informal, self-directed learning opportunities through social media should be taken seriously as a complement to formal induction programs already offered by schools and districts. Despite the pervasiveness of the "digital native" myth in education, education leaders should not assume that early career teachers will want or know how to construct informal, self-directed additions to their induction support systems through social media. Indeed, one of Trust and Prestridge's (2021) conclusions was that such self-directed learning can "limit how and what educators learn and the potential impact of their PLN on their professional growth" (p. 9). Therefore, early career teachers benefit from guidance, encouragement to explore, and time to try. At minimum, schools and districts should have a clear, positively framed (i.e., not just a list of "Do Not" statements) social media policy.

Schools and districts may also wish to establish some password-protected online spaces (e.g., platforms for sharing resources and ideas for lesson plans) as initial offerings toward expanding early career teachers' induction support systems. This would follow interviewees'

appreciation of more closed social media platforms like the district-wide Facebook group or an in-school Microsoft Teams messaging tool described by Amelia. These protected spaces would satisfy Julie's interest in being able to ask for help with problems she was dealing with. Participants in this study seemed to want emotionally safe contexts for developing identity-agency, such as the home groups in Juutilainen et al.'s (2018) research. Here, it seems like early career teachers would like a network of such home groups. In addition to creating these spaces, teacher educators and education leaders could direct early career teachers to platforms that are already established, such as the PLN discussion forums hosted by the International Society for Technology in Education (https://iste.org/learn/about-iste-plns).

Although it may be tempting to consider high frequency and self-promotional forms of social media use as ideals, early career teachers should not be held to such standards. Past research has often reported *participation inequality* wherein a small number of participants contribute almost all social media content (e.g., Nielson, 2006; Staudt Willet, 2019). Other research has unpacked the activity of "celebrity" educators on social media, so-called *teacherpreneurs* (Shelton & Archambault, 2019) and documented extensive self-promotional behavior by educators on social media (Prestridge, 2019; Staudt Willet, 2019). However, such high-profile cases are not necessarily the norm or even desirable. Carpenter and Harvey (2019) found that some educators had negative feelings about seeing this sort of content, "feeling conflicted, frustrated, or exasperated about various kinds of posts from other educators" (p. 5). In this study, early career teachers were highly pragmatic, aware of their time and expertise constraints—a theme also reflected by Trust and Prestridge's (2021) findings. Interviewees were motivated to get the supports they needed to perform their teaching duties, and they rarely acted as "self-seeking

contributors" or "info-networkers" (Prestridge, 2019) who actively tried to garner attention from or pass information along to others.

A far more common form of social media participation is *lurking*—that is, being present and watching but not making oneself known by contributing. Edelmann (2013) argued that lurking could be better characterized as *observing*, a term with less negative connotations and an acknowledgement that lurkers are actively reading and paying attention—and may even be sharing in other contexts. Bozkurt et al. (2020) reframed lurking as a form of *legitimate peripheral participation* in a community of practice (Lave & Wenger, 1991). That is, merely observing and retrieving resources are valid uses of social media, especially for early career teachers who feel the limitations of time and identity-agency. For instance, early career teachers like Wallace should not feel like they need to apologize for being a "taker" on social media. Rather, they should understand that observational forms of participation are appropriate for this stage of their professional journey as they continue to develop their identity-agency. Furthermore, observing may be a useful onramp for developing the confidence to interact in online spaces (Bozkurt et al., 2020; Trust & Prestridge, 2021).

Teacher educators and education leaders should take an active approach to alleviate any pressure early career teachers may experience to actively contribute on social media. Stakeholders should offer a clear social media policy and talk through possibilities and expectations for expanding and supporting the self-directed elements of early career teachers' induction support systems. They could also make specific suggestions to reduce performative inclinations, such as participating anonymously in teaching-related subreddits (Staudt Willet & Carpenter, 2020, 2021) or subscribing to summary emails from social media platforms, as Mike did with Pinterest.

Implications for Researchers

The qualitative design of this study does not produce generalizable results, which raises several limitations—and possibilities for future work—that should be of interest to researchers. A first issue is that the nine early career teachers I interviewed did not reflect the full diversity of U.S. teachers. Interviewees were mostly white and mostly women, and although these characteristics do follow national trends (National Center for Education Statistics, 2020), future researchers may wish to explore the induction experiences and social media use of early career teachers with minoritized identities. For instance, a future study should explore the specific induction challenges of Black teachers, particularly given the increased support for anti-racism education beginning in Summer 2020. In addition, all participants in this study were enrolled in a Master's program in education, and there may be some confounding effects around the agency required to enroll in grad school during one's first few years as a teacher and the agency needed to expand induction support systems. Future work should include early career teachers who are not pursuing an advanced degree.

A second issue is that this study only described teachers' reflections at one point in time. Furthermore, interviews were conducted in February 2020, a month prior to when COVID-19 disruptions radically altered the landscape of U.S. education. Collecting additional data, such as early career teachers' challenges and social media use during and after the COVID-19 pandemic, would be useful for comparison to the findings reported in the present study. Approaches like diary and experience sampling methods (e.g., Bolger & Laurenceau, 2013) in future work would provide alternative methods for collecting self-reported data that may be better for capturing in-the-moment descriptions of induction challenges and support systems.

A third limitation is that this study's findings cannot speak to wide-scale trends in induction challenges and early career teachers' social media use. However, results have established a codebook (Appendix E) and categories of social media use (Table 5) that can be investigated further with computational and quantitative approaches to investigate broad trends. Findings also suggest types of social media data to collect and a priori codes that can be applied in hand-coded content analysis or machine learning classification.

Conclusion

Passion alone is not enough to sustain teaching careers. Induction challenges have real effects on early career teachers, who may feel like they are in survival mode (Thompson et al., 2013; Zhukova, 2018), left to "sink or swim" in the isolation of their own classrooms and educational contexts (Ingersoll, 2012). Early career teachers take initiative to construct induction support systems, but if their identity-agency is fully spent, they may still find they have little choice but to leave the profession. This can fill teachers with intense emotion and regret, still committed to the needs of students but unable to continue (Dunn, 2018). Teacher departures have high costs to districts, schools, and students. School districts pay a financial price: more than $20,000 to replace each teacher who leaves (Carver-Thomas & Darling-Hammond, 2017). More importantly, educator turnover has been found to negatively affect students, such as by reducing learner achievement (Carver-Thomas & Darling-Hammond, 2017; Ronfeldt et al., 2013).

Teacher learning is no longer confined to the traditionally conceived two worlds of teacher preparation programs and PK-12 schools. Social media continue to expand the number of available tools, people, and spaces useful for professional learning. Early career teachers, teacher educators, and education leaders must likewise continue to expand their understanding of how these different pieces fit together to form an effective support system (i.e., PLN). Simultaneously, the costs to early career teachers' agency, especially as support systems become more complex, must not be overlooked or under-estimated.

Ultimately, many early career teachers would likely echo Julie's sentiment about constructing her induction support system: "I feel like I filled a lot of gaps." This study contributes new understanding of how and why early career teachers are taking these extra steps in self-directed learning.

APPENDICES

APPENDIX A: Publicity Email

This appendix shares the email sent to recruit participants for this study. Recipients were Master's degree students in the College of Education at Michigan State University.

Subject: *Recruiting Participants: Dissertation Study about the Experiences of New Educators*

Hello! I am an MAET alumnus (graduated in 2015) and current doctoral student at MSU. My doctoral dissertation study focuses on the experiences of new educators, so I am looking for MAET students who have fewer than three years of experience as educators, whether as K12 classroom teachers or in other roles.

I am inviting you to participate in one interview of 45-60 minutes on Zoom. I will ask you about your experiences as a new educator—specifically, any struggles or challenges you have faced and supports you have sought out (if any). I'd be very grateful for your help! In appreciation of your participation, you will receive a $20 gift card, a summary report of the study, and a letter to your principal noting your contribution to scholarly understanding of new educators' experiences.

There are no costs associated with participating in this study. Your participation, at any stage, is voluntary. You can skip any question you do not wish to answer or withdraw at any time without consequence. A pseudonym will be used in place of your name during the analysis and reporting of this study to ensure that your identity will remain confidential.

In order to participate, you must be employed as an educator in the United States, have three years or fewer work experience in education, and be over 18 years old.

If you are interested, please complete the linked Willingness to Participate form or contact the principal researcher, Bret Staudt Willet (staudtwi@msu.edu).

Thank you for your consideration!
Bret Staudt Willet

APPENDIX B: Willingness to Participate Form

This appendix shares the contents of the survey sent to study participants. Both the Informed Consent and the information-gathering questions are included.

Introduction

You are being asked to participate in a research study. The purpose of the study is to understand your experiences as a new educator——specifically, any struggles or challenges you have faced and supports you have sought out (if any). You will be asked to participate in an interview lasting 45-60 minutes.

There are no costs associated with participating in this study. Your participation, at any stage, is voluntary. You can skip any question you do not wish to answer or withdraw at any time without consequence. A pseudonym will be used in place of your name during the analysis and reporting of this study to ensure that your identity will remain confidential.

In order to participate, you must be employed as an educator in the United States, have three years or fewer work experience in education, and be over 18 years old. In appreciation of your participation, you will receive a $20 gift card, a summary report of the study, and a letter to your principal noting your contribution to scholarly understanding of new educators' experiences.

If you have any questions, please contact the principal researcher, Bret Staudt Willet (staudtwi@msu.edu) or Michigan State University's Human Research Protection Program (https://hrpp.msu.edu/).

You indicate that you voluntarily agree to participate in this research study by submitting this form.

Background Information
1. What is your full name?
2. What is your email address?
3. How many years of experience do you have as an educator?
4. What grade level do you primarily work with?
5. In what content area do you teach? (e.g., math, science, ELA, physical education, etc.)
6. What type of school do you teach in?
   a. (urban, suburban, rural)
7. What is your school's zip code?
8. What kind of educator preparation have you had?
   a. (Undergraduate degree related to education, Graduate degree related to education, Alternative certification, None)
9. What is your ethnicity?
   a. (Asian, Black/African, Causasian, Hispanic/Latinx, Middle Eastern, Native American, Pacific Islander, Prefer to self-describe ___, Prefer not to answer)

10. What is your gender?
    a. (Female, Male, Non-binary/Third gender, Prefer to self-describe ___, Prefer not to answer)

Social Media Use

11. Which social media platforms do you use? (Choose all that apply.)
    a. (Facebook, Instagram, LinkedIn, Pinterest, Reddit, Snapchat, TeachersPayTeachers, TikTok, Twitter, YouTube, Other)
12. How long have you been an active user of social media?
    a. (Less than 1 year, 1-2 years, 3-5 years, More than 5 years)
13. How often do you use social media?
    a. (daily, several time a week, several times a month, rarely)
14. For what professional purposes do you use social media?
    a. (Following news and trends in education, Seeking and giving emotional support related to my job, Finding and sharing educational resources, Collaborating with colleagues in education, Other, None)

APPENDIX C: Interview Consent (To Be Read Aloud)

This appendix shares the Informed Consent statement the principal researcher read aloud to study participants at the start of each interview. The Human Research Protection Program (HRPP) and Institutional Review Board (IRB) at Michigan State University classified this study as Exempt 2ii, meaning that "Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation." Because this study is considered "exempt," I only needed to receive verbal consent at the start of each interview.

Thank you for agreeing to do this interview with me today. I am a researcher at Michigan State University, and I am asking you to participate in a research study. The purpose of the study is to understand your experiences as a new educator. I will ask you to answer some questions. This should take about 45-60 minutes. There are no costs associated with participating in this study. Your participation is voluntary. If you do not want to answer any of the questions, please let me know. You can also ask me to stop at any time without consequence. In order to participate, you must be employed as an educator in the United States, have three years or less work experience in education, and be over 18 years old. In appreciation of your participation, you will receive a $20 gift card, a summary report of the study, and a letter to your principal noting your contribution to scholarly understanding of new educators' experiences. If you have any questions after the interview, please contact me, Bret Staudt Willet (staudtwi@msu.edu), or Michigan State University's Human Research Protection Program (https://hrpp.msu.edu/). You indicate that you voluntarily agree to participate in this research study by proceeding with the interview. Is it okay if I record our interview?

APPENDIX D: Interview Protocol

This appendix shares the interview protocol used to guide one-on-one interviews with study participants. Because these interviews were semi-structured, the questions included here served as a starting point; the principal investigator asked follow-up questions that followed participants' initial responses.

Thank you again for agreeing to do this interview with me today. Remember that if there are any questions you don't want to answer, you are welcome to skip them—just let me know.

Q1. First, tell me a little bit about yourself.
- How many years have you been an educator?
- What grade level and subjects do you teach?
- What is your school like? (urban/suburban/rural, zip code)
- What made you want to become an educator?

Q2. What are some of the challenges and struggles you have experienced as a new educator? (RQ1)
Potential themes and follow up questions:
- Everything is new: professional context, feeling professionally isolated
- Seeing self as professional not student: adult not kid; developing professional identity: understanding self in relation to teaching; values, personal beliefs, convictions, past experiences, present goals;
- Still learning to teach: planning, developing curriculum, managing classroom practice, improving a specific skill, district-mandated professional development sessions that are too general to be useful
- Navigating competing values: rethinking beliefs, embracing or reconciling personal values and/or new ideas with those evident in school of employment
- Agency: purposeful action (why or why not)

Q3. Have you sought support for these challenges and struggles? (RQ2, RQ3)
- What kinds of supports?
- From whom?
- Are there any reasons why you have NOT sought supports as an early career teacher?
- Are there any supports you have access to now but are unhelpful or not worth your time?
- What supports do you need, but are still missing? WHY?

Potential themes and follow up questions:
- Support categories: content expertise (subject-matter questions); time management; classroom management; relating to students; curricular resources; emotional encouragement

- Types of individuals or groups: former professors; former classmates from preparation program; school administrators; official mentors; subject-matter experts; peers/colleague at school
- People orientation vs. content orientation; formal vs. informal; local vs. global

Q4. For each of the supports you mentioned earlier: Do you use social media to access or connect to these supports? (RQ4)
- Why or why not?
- Which social media platforms? How do you use them?

Potential themes and follow up questions:
- Reasons why: ease of use; time efficiency; convenience/just-in-time
  - People orientation vs. content orientation
- Reasons why not: distractions; overwhelming number of connections and resources; sense of doing extra work outside school hours
- Types of individuals or groups: in-person friends; online friends; celebrities; politics; news; other educators; joining a specific group or space; following a particular hashtag
- Have you found any conflicting messages while looking for help? How did you navigate these? Which advice did you follow? What did you end up doing? How did it go? Why?

Q5. Let's return, for a moment, to the challenges and struggles you mentioned earlier— specifically those where you have not sought support or the supports available have been unhelpful. Do you think social media could be useful for accessing or connecting to new or additional supports? (RQ4)
- Why or why not?
- Which social media platforms? How might you use them?

Q6. For each social media platform mentioned: (RQ4)
- How long have you been using ___ [specific social media platform]?
  - When did you start using for personal reasons? When for professional purposes?
- Was your initial decision to use related to professional use?
- How frequently do you use?
- Has this frequency changed (increased or decreased) after professional use?
- Overall, has this use for professional purposes been beneficial or detrimental? Why?

Potential themes and follow up questions:
- Huge help, stress relief, stress amplifier, made things complicated, distracting, addictive, etc.

Q7. What is your school or district's policy on educators' use of social media? (RQ4)
- In other words, how do administrators feel about you using social media related to work?
- How have these policies or expectations been communicated to you?

Q8. Are there any other ways you would link your experiences as a new educator and your use of social media? (RQ4)

APPENDIX E: Codebook

This appendix reports the final codebook of themes and categories (Table 8) that was developed over the course of five rounds of emergent, eclectic qualitative coding (Saldaña, 2016). These categories and definitions passed inter-rater reliability testing.

Table 8: *Codebook of Emergent Themes and Categories from Interviews*

Theme	Category	Definition
RQ1. Reasons	Change	Change in circumstances, disruptions, or uncertainty experienced by early career teachers (e.g., administrative turnover, starting to teach a new course mid-year).
	Scarcity of resources	Absence or shortage of resources for early career teachers (e.g., an early career teachers' limited budget, absence of curriculum, missing classroom materials, poor physical conditions of school). Contains an explicit comment to the effect of "I don't have the resources I need."
	Conflicting teaching beliefs	Tension experienced by early career teachers between their previously held beliefs about teaching and learning and those encountered in their school of employment (e.g., interpretation of state standards, philosophy of student discipline, how to teach curriculum).
RQ2. Supports	Planning	Early career teachers' need to prepare for teaching ahead of time (e.g., generating ideas, creating curriculum, writing lesson plans, finding appropriate resources).
	Enacting practice	Early career teachers' need to learn more about and improve their teaching and working directly with students in the classroom (e.g., classroom management, student engagement, helping students).
	Connecting socially	Early career teachers' need to be socially connected, regardless of modality. Functions positively as a type of *social glue* (e.g., chatting with friends, venting about work) and negatively as *social comparison* (e.g., feeling inadequate when looking at a peer or colleague's work).

Table 8 (cont'd)

Theme	Category	Definition
RQ3. Connections	In-school	Potential source of assistance for early career teachers that is located within the school building, whether formally required (e.g., mentor teacher, professional learning community), informally initiated by the early career teacher (e.g., talking to colleagues in the teachers' lounge), or accessed by any modality (e.g., offline, social media)
	Out-of-school	Potential source of assistance for early career teachers that is located outside the school building, whether formally required (e.g., district-wide professional development gathering) or informally initiated by the early career teacher (e.g., family, friends, resources retrieved online, social media links to anyone beyond in-school colleagues).
RQ4. Engagement	Browse	Early career teachers seeking supports for self-interested reasons by looking through existing materials (e.g., looking up resources on TeachersPayTeachers.com, observing posts in a Facebook group, watching YouTube videos). Includes determining whether and how to use available resources and supports.
	Ask	Early career teachers seeking supports for self-interested reasons by inquiring about the existence of materials (e.g., making needs known, venting or personal sharing in hopes of receiving emotional encouragement). Includes determining whether and how to use available resources and supports.
	Exchange	Early career teachers seeking supports by participating as a member of a learning community or team, which may be formal or informal, harmonious or conflictual. Characterized by interaction and dialogue—that is, mutual exchange to satisfy mutual interests (e.g., contributing ideas to a group, giving advice on social media, conversing to determine best practices).

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