DECIDING WHERE TO LIKE, COMMENT, AND SHARE:

ELEMENTARY TEACHERS' USE OF SOCIAL MEDIA FOR INFORMAL

PROFESSIONAL LEARNING

by

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(Under the Direction of Sally J. Zepeda)

ABSTRACT

The purpose of this qualitative study was to explore how elementary teachers use different social media platforms to connect with other teachers for informal professional learning. The researcher sought to understand how elementary teachers decide which platform(s) to use and how their expectations vary among different social media platforms. Current research often focuses on subject specialists such as middle school and high school teachers or single platforms such as Twitter or Facebook. However, few studies have focused on elementary teachers or looked at how teachers use a combination of social media platforms. This qualitative netnography used questionnaire data from 287 elementary teachers in the United States and semi-structured interviews with six participants to explore teacher preferences among the available social media platforms.

The study also examined the types of information presented on each platform and how different platforms may or may not fulfill different learning needs for elementary teachers. Questionnaire data were analyzed using descriptive statistics and inductive thematic analysis. Participants were also given the option of participating in analysis of

their publicly accessible social media data and to participate in a follow-up semi-structured interview. Thirty-four teachers agreed, and six teachers participated in interviews. Two teachers participated in synchronous online interviews and four teachers participated in asynchronous video interviews.

The finding illustrated that elementary school teachers are multi-platform social media users, with some teachers creating multiple accounts on a single platform to protect privacy and balance personal and professional needs. The elementary school teachers participating in this study were purpose-driven when selecting which platform would meet their specific informal professional learning needs, and their preferences varied based on the objective. While teachers were concerned with several aspects of social media use, they saw these informal learning opportunities as beneficial overall. Further research is needed in the analysis of the types information shared online and how schools can promote productive use of social media for informal learning.

INDEX WORDS: Social media, Elementary teachers, Informal professional learning, Netnography, Teacher professional development

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DEDICATION

For my daughters, Sydney and Regan. May you always pursue your dreams and never stop learning. You inspire me to be a better human every day, and I will always love you more than you could know. I'm so grateful I get to be your mom.

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CHAPTER 1

INTRODUCTION

Teachers are constantly reminded of the importance of differentiating instruction to meet the diverse learning needs of their students, yet formal professional development opportunities rarely consider teachers' knowledge, learning styles, interests, or experiences (Kennedy, 2014a; Tour, 2017). Borko's (2004) complaint that teachers receive "forms of professional development that are fragmented, intellectually superficial, and do not take into account what we know about how teachers learn" (p. 3) still holds true today. Many school districts mandate professional development activities, but mandates to attend are not the same as mandates to learn (Kennedy, 2016). Motivation is a necessary precondition to teacher learning (Kyndt et al., 2016). When teachers are not motivated to discover or to implement the content being shared, little will be learned from formal professional development initiatives.

Professional development research often focuses on formal experiences such as workshops and in-services, but this approach ignores the fact that about 75% of all adult learning occurs through informal methods (Hanley, 2009). Prestridge (2019) describes how teachers are seeking professional learning experiences that are "serendipitous" and "self-directed based on an individual's professional needs and interests" rather than the top-down, one-size-fits-all professional development models that are mandated for teachers to attend and pushed by the school's own agenda (p. 144).

One factor driving the trend toward informal learning is the cultural shift brought about by the internet, which has changed the way individuals access information, interact with others, and share knowledge. With over 97% of all college graduates—a group that necessarily includes teachers—using the internet in some capacity, online access is nearly ubiquitous (Pew Research Center, 2018a).

The accessibility of smartphones that offer online connections through applications, or "apps," has made the internet an essential part of daily life (Fox & Rainie, 2014). In less than a decade, the number of American smartphone owners has more than doubled from 35% in 2011 to 81% at the beginning of 2019 (Schaeffer, 2019). The increase in accessibility has also caused social media use to skyrocket. Social media, which is often used synonymously with the term *social networking sites*, is defined as "internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others" (Carr & Hayes, 2015, p. 50). This definition would include diverse sites such as Facebook, Instagram, LinkedIn, Pinterest, Twitter, and YouTube.

Today over 80% of all 18- to 49-year-old Americans use at least one social media platform (Auxier & Anderson, 2021), and the typical adult user spends time on at least three platforms (Smith & Anderson, 2018). These trends tend to be more pronounced in younger demographics. In a Pew Internet Research study on social media use, Smith and Anderson (2018) found that more than half of 18- to 29-year-olds are on Facebook, YouTube, Instagram, and Snapchat. As a result, opportunities for informal learning are quickly expanding to a wide range of platforms selected based on user preferences.

The goal of all teacher professional development should be "lifelong, reflection-based, transformative learning and progressive growth" and not just job training (Liu et al., 2016, p. 421). With the increased accessibility and familiarity of internet resources and social networking platforms, teachers are turning toward online social networks for professional learning. More teachers are going online to find resources and support for professional learning because it offers the just-in-time information teachers need to address classroom issues (Williams & Olaniran, 2012). In fact, teachers have been uniquely poised to benefit from the online shift. According to Hur et al. (2012),

> As a vital component of society that is too often lacking in sufficient funding, teaching stands to benefit more directly from the proliferation of online communities than many other fields and professions. Such environments are inexpensive, replicable, extendable, and reusable. (p. 235)

As more teachers have turned toward online resources for individualized professional learning, it is important to develop a better understanding of how teachers use social media as part of this process of professional development.

The movement toward social media is not without its challenges, however. Just as social media use is generally on the rise, many schools have developed policies that discourage teachers' use of social media (Krutka & Carpenter, 2016). Where prohibitive policies exist, they can range from web filters that block teachers from accessing services such as Facebook and Twitter while at school to complete bans on social media use (Cox & McLeod, 2013, 2014; Davis, 2012). It is not at all unusual for workplaces to discourage social media use (Nochumson, 2021; Olmstead et al., 2016). And the potential employment repercussions for teachers due to legal and privacy issues present unique

challenges (Williamson, 2013). Teachers and school administrators need to understand the possible professional learning benefits *and* risks of using social media so that they can craft more nuanced policies accordingly.

Background of the Study

A substantial body of literature has explored what works in teacher professional learning practices and has highlighted deficiencies in existing practices. Darling-Hammond et al. (2009) explained that "effective professional development is intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other school initiatives; and builds strong working relationships among teachers" (p. 5). While researchers and practitioners understand that this is what professional development initiatives *should* look like, reality rarely matches the ideal. Instead, teachers lament professional development that is often too brief, poorly timed, lacking in follow-up, and considered not useful in addressing the challenges teachers face (Darling-Hammond et al., 2009).

Opfer and Pedder (2011) contextualized the weaknesses of existing professional development by describing how research in this area underestimates the difficulty of altering teachers' beliefs and practices. Professional development studies that seek to prove a causal relationship between a factor and an outcome, they argue, may not yield findings that work in all settings or with all teachers. A Goldilocks Principle is at play, where too much collaboration can stifle growth, too little collaboration can breed isolation, and a level of collaboration that is just right allows teachers to flourish (Opfer & Pedder, 2011). Unfortunately, that "just right" zone varies from teacher to teacher, and

schools are often under-resourced and unprepared to deliver organized professional development that facilitates such collaboration.

As the limitations of formal professional learning become increasingly clear, more research is focusing on the potential for informal learning. Kyndt et al. (2014) defined informal learning as follows:

> Informal learning is characterized by a low degree of planning and organizing in terms of learning context, learning support, learning time, and learning objectives. Informal learning opportunities are not restricted to certain environments. The learning results from engagement in daily work-related activities in which learning is not the primary goal. Informal learning is undertaken autonomously, either individually or collectively, but without an instructor. It often happens spontaneously and unconsciously. From the learner's perspective, it is unintentional. Finally, informal learning outcomes are unpredictable. (pp. 2393–2394)

That research in informal learning is growing while more people seek answers to their daily questions online hardly seems coincidental.

Unlike traditional professional development, social media offers opportunities for time-sensitive professional learning that may not be possible through more formal channels. Greenhalgh and Koehler (2016), for example, described how teachers in France organized on Twitter around the hashtag #educattentats to get just-in-time support in the wake of a terrorist attack in Paris. More recently, as the COVID-19 pandemic drove many teachers to implement emergency remote learning for the first time, teachers turned to online communities for support (Aguilar et al., 2021; Carpenter, Shelton, et al., 2021;

Carpenter, Trust, et al., 2021; Greenhow & Galvin, 2021). As a result, opportunities for professional learning through social media are becoming more common.

The professional development literature is beginning to spotlight the ways that teachers learn from each other through online communities. Hur and Brush (2009) identified five reasons for teacher participation in online communities: (1) sharing emotions, (2) harnessing the advantages of online environments such as anonymity, asynchronous conversations, and outside ideas, (3) combating feelings of isolation, (4) exploring new ideas, and (5) experiencing a supportive community. Such themes are echoed in various combinations throughout much of the literature discussing teachers' use of social media for learning (Greenhow & Galvin, 2021; Prestridge, 2019).

Although the nascent research in this area suggests tremendous potential for social media as a tool for informal learning, not all the reports are positive. Trust and Prestridge (2021) described how many educators report that using social media can be a time-consuming endeavor, which may limit people's willingness to engage with it. Even those who use social media for learning risk experiencing social media fatigue—a phenomenon where users feel overwhelmed trying to keep up with the constant flow of information (Bright et al., 2015).

There are also growing concerns with the quality of the resources shared through social media. Nelimarkka et al. (2021) found low levels of pedagogical thinking and discussion of best practices in their examination of a longstanding Facebook group, and Shelton et al. (2021) expressed concerns with a proliferation of racist and harmful content promoted through varying channels from the commercial site TeachersPayTeachers

(TpT). As a result, more research needs to examine these potential limitations and problems with social media.

Statement of the Problem

While much has been written about teachers' participation in online communities through social media and the connections between online communities and teacher professional learning, almost all previous studies tended to focus on a single platform such as Twitter or Facebook. This focus ignored the ways in which most people tend to use social media as a matrix of resources rather than a single tool used in isolation. For example, over 85% of Twitter, Instagram, Snapchat, WhatsApp, Pinterest, and LinkedIn users report that they also use Facebook (Smith & Anderson, 2018). When focusing just on teachers' habits, a survey of over 700 teachers who use social media for professional learning found that 84% use multiple platforms to engage with their professional learning networks, or PLNs (Trust et al., 2016). Given these practices, it was important to understand the interplay of teachers' social media practices and the perceived benefits that different platforms may offer.

The lack of a holistic approach to exploring teachers' social media practices blunts our understanding of informal learning. Eraut (2004) explained that "informal learning is largely invisible because much of it is either taken for granted or not recognized as learning; thus, respondents lack awareness of their own learning" (p. 249). Identifying the factors that encourage participation in diverse social media platforms and communities could help develop a better understanding of how such networks promote teachers' learning and reflection (Macià & García, 2016). Unless we know more about

how different social media pieces fit together in developing teachers' understanding, our knowledge of informal learning strategies will be necessarily incomplete.

Finally, there was a distinct lack of research into the social media practices of elementary teachers in particular. Although several studies have examined the professional learning benefits of specific platforms, few have targeted elementary teachers (Nochumson, 2021). Instead, studies have targeted pre-service teachers (Benko et al., 2016; Munoz et al., 2014; Stefanick & VanOverbeke, 2015), subject-area specialists (Krutka & Carpenter, 2016; Liu et al., 2016; Robson, 2018; Trust, 2015), or a complete spectrum of educators from K-12 or K-16 (Carpenter, Trust, et al., 2021; Greenhow & Galvin, 2021; Krutka et al., 2016; Visser et al., 2014). Within these studies, the voices of elementary educators are not nearly as strong. In Krutka et al.'s (2016) study, for example, elementary teachers made up only 25% of the 732 respondents.

Given that many elementary teachers tend to be generalists who teach all or most subject areas rather than departmentalized specialists like middle school, high school, and higher education teachers, their learning needs are likely to be quite different. For example, elementary teachers often work with one group of children all day, which requires different classroom management skills, and they often have more opportunities for and flexibility with curriculum integration because they may teach all subject areas.

In addition, because the Children's Online Privacy Protection Act (COPPA) prohibits social media sites from allowing profile creation among users under the age of 13, elementary teachers are necessarily connecting with an audience that does not include their students (Children's Online Privacy Protection Act of 1998). This likely makes their

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motives and experiences different from those who teach secondary levels. As a result, more research in this area was warranted.

Purpose of the Study

The purpose of this study was to explore elementary teachers' experiences using multiple social media platforms for informal professional learning. The study examined what platforms elementary teachers were using, what types of content they accessed or shared through these platforms, and the perceived affordances or drawbacks of using particular social media platforms over others.

Research Question

There was one overarching research question that this study sought to explore: "How do elementary teachers describe their use of social media for informal professional learning?"

Conceptual Framework

The concepts of networked individualism (Rainie & Wellman, 2014) and affinity spaces (Gee, 2004; Gee & Hayes, 2011) provided a framework for conceptualizing teachers' use of social media for informal professional learning. This section outlines the premises of these conceptual frameworks.

While social network analysis has been used to examine networks within organizations for decades, the research on networks in education is still in its infancy. The explosion of social media use has fueled the launch of many studies looking at social networks, but schools have been much slower to adopt social media than corporate sectors (Cox & McLeod, 2014). At this stage, we know far more about what happens within schools than between them (Rincón-Gallardo & Fullan, 2016). Still, the concepts

examined by social network researchers across multiple disciplines have strong applications to the field of education and can serve as a powerful mechanism for understanding schools' social structures (Daly, 2010a).

Under education-based social network theories, individuals are seen as pieces of a much more complex puzzle where the absence of any one piece may completely alter the understanding of what is seen (Ávila de Lima, 2010). This is just one aspect of networked individualism, in which people take on and sustain different networks and levels of relationships based on their needs and interests at a given time (Rainie & Wellman, 2014; Trust & Prestridge, 2021).

A fundamental premise of networked individualism is the concept of social capital. At its core, social capital is made up of "the resources embedded in social relations and social structure which can be mobilized when an actor wishes to increase the likelihood of success in purposive action" (Lin, 2001, p. 24). Knowledge and expertise, the primary currencies of education, are spread through informal interactions between actors (Penuel et al., 2010). Whether those actors are individuals engaged in small group professional learning or school-wide improvement efforts, those relationships and structures will impact the means available to bring about change, either constraining actors or providing additional opportunities that would otherwise not exist (Borgatti & Ofem, 2010). As Rainie and Wellman (2014) explain, "not only must people choose which parts of their networks to access, the proliferation of communication devices means they must also choose how to connect with others: meet in person, phone, email, text, tweet, or post on Facebook" (p. 19).

Actors within social networks are considered as "nodes" that are connected within a broader web of relationships (Borgatti & Ofem, 2010). These relationships may be based on similarities in roles, locations, or interests, and may be close-knit or bridging otherwise disconnected groups (Daly et al., 2019). Once these nodes are connected, analysts consider the direction of ties to determine whether information tends to flow in one direction, known as an asymmetrical relationship, or whether relationships involve a two-way dialogue among actors (Daly, 2010b).

Regardless of the direction of information flows, Borgatti and Ofem (2010) explain that the opportunities and constraints experienced by each node will be determined by its structural position in the network. A node with several connections, for example, will likely receive more information or opportunities than someone who is relatively isolated. Individuals who have the most connections to others are considered "central actors," and as hubs of the network, they may have a disproportionate impact on others due to their level of influence (Daly, 2010b). Other actors may be classified as "peripheral actors," who are connected but with fewer ties than central actors, or "isolated actors" who tend to be disconnected in whole or in large part from the network being analyzed (Daly, 2010b).

Social networks may also be analyzed based on the strength of the ties between individuals or groups. Strong ties facilitate transfer of more complex knowledge and focused problem solving, whereas weak ties are better for gaining outside perspectives or passing on routine information (Daly, 2010b). While "strong" and "weak" are often seen as normative indicators of quality in some contexts, they do not reflect value judgments in social network analysis. As Daly (2010a) explained, cliques may have strong ties that

offer redundant information or merely reinforce existing efforts without promoting change. The goals and purposes of the network will influence determinations that the network's activities are good or bad, effective or ineffective.

The density of ties provides another yardstick for analyzing social networks. Density measures the number of connections surrounding individual actors, and networks with dense ties feature many different pathways for information to travel. For example, Penuel et al. (2010) described how a single source of expertise may be enough to transfer information to all other actors in a dense network because there are so many routes for the information to disseminate; the actors are functionally redundant. A network with sparse ties, on the other hand, will require considerably more effort to pass along information, and it may be more resistant to change simply because messages do not travel through the organization easily.

Finally, networks may be analyzed by whether ties are internal or external to the organization. Since schools do not operate in a vacuum, "external ties allow new ideas or approaches to enter organizations, while internal ties provide access to expertise within the organization" (Finnigan & Daly, 2010, p. 180). These external ties are particularly relevant in the context of online social networks where a sense of community and connectedness may be strong regardless of an individual's level of active participation (Arnold & Paulus, 2010).

Teachers often shift between four types of participation in online spaces: *contemplators* who read and think about posts, *curators* who collect and organize information, *crowdsourcers* who seek advice, and *contributors* who respond to others (Trust, 2017). These types of engagement aren't a linear progression, and teachers may

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cycle between different modes of participation depending on their personal and professional goals, confidence, time available, relationships with participants, and the dynamics of the social media space (Trust & Prestridge, 2021). As a result, informal professional learning through social media can take a variety of forms.

Teachers feel vicarious connections to other teachers by observing their interactions, and some degree of lurking behavior is an expected norm of online communities (Dennen, 2008). Therefore, these online social networks may be seen as what Gee (2004) described as "affinity spaces." Such spaces are:

> a place (physical, virtual, or a mixture of the two) wherein people interact with each other, often at a distance (that is, not necessarily face-to-face, though face to face interactions can also be involved), primarily through shared practices or a common endeavor (which entails shared practices), and only secondarily through shared culture, gender, ethnicity, or face-to-face relationships…. People are brought together through a shared affinity for a common goal, endeavor, or interest, not first and foremost because they are "bonded" to each other personally. (Gee, 2004, p. 98)

Interactions among teachers through social media are an example of affinity spaces because the shared experiences of teaching are often what bring teachers together in these online communities.

When teachers come together under a common hashtag on Instagram or Twitter or as followers of particular pages or groups on Facebook or Pinterest, they are participating in these affinity spaces. They may not know each other personally, nor may they necessarily communicate in a reciprocal way. But their shared practices and common

interests allow them to feel a sense of connection and belonging even if others cannot identify them as members of a distinct "community."

In addition, affinity spaces tend to have a problem-solving orientation that can attract twenty-first century learners to virtual spaces (Gee, 2017). Because these affinity spaces are "loosely organized social and cultural settings in which the work of teaching tends to be shared by many people" (Gee, 2018, p. 8), such environments may be more conducive to lurkers who share interest in the topic but don't make their membership status clear to others (Gee, 2004). In many situations, over 90% of group members may be lurkers (Edelmann et al., 2017).

Kamalodeen and Jameson-Charles (2016) tracked usage statistics for an online teacher forum they created and found that content consumers far outnumbered contributors. While some may be quick to dismiss these community members as freeloaders or peripheral participants, many studies indicated that lurking is not necessarily a bad thing (Dennen, 2008; Edelmann et al., 2017; Preece et al., 2004). Edelmann et al. (2017) describe how lurkers may build the social capital of the group by propagating information from the online space to face-to-face contexts or implement the ideas in their own activities. Lurkers may also recruit additional members to the group and may feel that their contributions would only clutter a topic that has already been sufficiently discussed (Edelmann et al., 2017).

It may also be the case that teachers can get the information they need merely by witnessing other teachers engaged in discussing a topic. Parsons et al. (2019), for example, found that teachers believed they could learn through experiences of watching other teachers and didn't need any accompanying social interaction. Teachers may still be

learning and applying new ideas to the classroom without making it visible to the other participants in the online community. Therefore, we should not assume that the lack of contribution means learning is not happening (Trust & Prestridge, 2021).

Another reason that some may be reluctant to participate in online discussions is because these discussions leave a lasting digital footprint. Beaudoin (2002) explained that:

> Students want to "get it right" before they commit themselves to online dialogue because the written format seems so "public." It may be that online discourse feels more formal and premeditated, while classroom discussion lends itself to a more spontaneous, informal exchange that is not recorded and therefore is less likely to be retained. (p. 153)

While Beaudoin's (2002) study was conducted in the context of an online class, the same ideas apply to online communities of teachers.

Teachers participating in online communities spend substantial time reading, reflecting, and processing material (Trust, 2017), and as a result, they may be developing deeper understandings than they would experience in a more formal professional development context. Dennen (2008), in particular, contends that lurking is beneficial for individuals who are trying to learn new concepts because it lightens their cognitive load by not requiring them to perform or respond before they are ready. The benefits of lurking may be especially true for pre-service and beginning teachers who lack the confidence and background experience to feel empowered to contribute (Rodesiler & Tripp, 2012). Therefore, the concept of networked individuals participating in affinity spaces provided a strong conceptual framework for the content of this study.

Significance of the Study

Learning more about elementary teachers' strategies in choosing and integrating social media platforms for professional learning developed a better understanding of informal learning processes. Kyndt et al. (2016) identified five reasons why informal learning is an important process to understand: 1) it is an important contributing factor to innovations in teaching and school reforms, 2) it impacts the quality of student learning, 3) it affects teacher retention, 4) it reflects acknowledgement of the growing pressure for teacher performance, and 5) it recognizes the lack of transfer between formal professional development and classroom practices. Scholars already knew that teachers were using social media tools to support their work in the classroom, but unless they had a better sense of how these tools were used in tandem, their understanding of teachers' informal learning processes was incomplete.

While formal face-to-face professional development should never go away completely, this study could also help leaders conceive of future professional learning using more of a blended approach. Social media has the potential to help teachers get more out of their face-to-face professional development experiences by cultivating relationships within learning communities and sharing resources for follow-up learning. Since no single platform will support all teacher participants, we need to be open to a variety of platforms that participants choose for themselves (Liu et al., 2016). We also need a deeper understanding of how learning manifests across different learning spaces (Trust & Prestridge, 2021).

As more groups see the benefits of a holistic and blended approach to professional learning, more resources could be channeled toward showing teachers how to use these

social media sites productively (Carpenter, Trust, et al., 2021; Cummings, 2015; Nochumson, 2021). For example, Carpenter, Trust, et al. (2021) suggest that future professional development efforts could help educators become critical consumers around potentially problematic, for-profit content that often emerges on social media. Similarly, Lundgren et al. (2021) found that normalizing the use of social media channels such as Pinterest could create opportunities for more informed decision-making and collaboration. Such professional development would acknowledge that informal learning conducted through social media may be beneficial when done carefully.

Assumptions of the Study

This study assumed that social media use was voluntary and that individuals were able to choose which platforms to use and how to access them. It also assumed that individuals self-determined what content was shared, searched, or accessed on different social media platforms.

Definition of Terms

Several terms were unique to this area of research. In this study, these terms were defined as follows:

Informal learning – any learning that happens outside of formal contexts such as courses, conferences, webinars, and workshops specifically intended for teacher professional development. Informal learning may be unplanned, unstructured, and driven by a teacher's particular interests or needs within the context of activities that are meaningful to the teacher and that lack external assessment (Rogoff et al., 2016).

Professional learning networks (PLNs) – the broad system of digital tools and environments that facilitate teacher collaboration and sharing. The study incorporates the

definition from Trust et al. (2016) that PLNs are "uniquely personalized, complex systems of interactions consisting of people, resources, and digital tools that support ongoing learning and professional growth" (p. 28).

Social media or social networking sites (SNSs) – used interchangeably within this study, these are websites or mobile apps, such as Facebook, Twitter, Pinterest, LinkedIn, Snapchat, YouTube, and Instagram, that "allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others" (Carr & Hayes, 2015, p. 50).

Limitations of the Study

One limitation of this study is that the questionnaire relied on participants to opt-in and self-report their practices. Such self-reports may reflect biases because those who opt-in may have a stronger opinion about the research topic or over- or under-estimate patterns of social media use. They may also have selective memory about the reasoning behind their choices of platforms or exaggerate the roles that their social media use has played in their informal learning.

Second, the study was unlikely to reflect the behaviors of lurkers—people reading online social media content without contributing to discussions or participating fully—as these individuals, by nature of lurking, show less inclination to participate in online activities that require them to identify themselves. Lurkers were also less likely to be invited to interview given that interview participants were selected based on their visible participation on multiple social media channels.

Third, like most existing research in this area, it was difficult to measure actual impacts on student learning and classroom practices. Macià and García's (2016) criticism that studies do not use longitudinal research techniques on both the online community and classroom context applied to this study as well.

Finally, this study was affected by the COVID-19 pandemic. Questionnaire data were collected in November and December of 2018, and interviews were conducted in summer and fall of 2019. The analysis process was interrupted due to a researcher injury that required physical therapy, and then the pandemic forced her into emergency remote teaching for over a year. This caused significant delays in this research project. However, recent studies on the impact of the pandemic on teachers (e.g., Carpenter, Trust, et al., 2021; Greenhow & Galvin, 2021) suggest that teacher participation in these online spaces has only become more relevant as a source of professional learning. As a result, the findings from this study are still relevant and meaningful.

Overview of Research Procedures

This section provides a brief overview of the research procedures used in this qualitative study. An explanation of the research design, research methods, and sample are provided first, followed by a description of the data collection methods and data analysis process. These topics are explored in greater depth in Chapter 3.

Research Design

This research used a qualitative approach of netnography for its research design. Kozinets (2015) described this close relative of ethnography as being "about obtaining cultural understandings of human experiences from online social interaction and/or content, and representing them as a form of research" (p. 54). Netnography draws on

several of the ethnographic philosophies and practices used to understand culture and community. Netnography diverges from ethnography, however, in that it sees culture and community as far more fluid in online contexts, leaving behind "online traces" that are not always apparent in their offline lives (Kozinets, 2020). Online relationships are largely consocial in that they are limited to a platform like Facebook or an event such as a Twitter chat. While they are meaningful to the participants, such interactions evade a strict ethnographic definition of culture and community (Kozinets, 2015).

This approach was most appropriate because it acknowledged that the ways we represent ourselves online and interact with others may be very different from our face-to-face encounters (Kozinets, 2020). Online communication, for example, may happen asynchronously and may have conventions unique to the platform such as Twitter's use of hashtags and retweets. As a result, traditional ethnographic approaches must be modified to assume the types of data and interactions possible in a digital world.

Research Methods

Much like ethnography, netnography can integrate a variety of research approaches to develop a better understanding of the issue being researched. Kozinets (2020) outlines six different movements that comprise netnographic research: initiation, investigation, immersion, interaction, integration, and incarnation.

During the first stage, initiation, the researcher informally observed sites of teacher participation on social media and used the existing literature and her own experiences to develop an online questionnaire. The development of the questionnaire prompted the second movement: investigation. The online questionnaire was shared through the researcher's social network of elementary teachers on Facebook, Twitter,

Instagram, and Pinterest. The questionnaire contained five parts: informed consent, basic demographic information, social media use, perceptions of professional learning, and an invitation to participate in the content analysis and/or interview portions of the research. The social media use section probed the social media platforms that the participants used for both personal and professional purposes, and the perceptions of professional learning section asked open-ended questions about how the participant uses various platforms for professional learning.

During the third movement of research, immersion, the researcher developed her initial impressions of the questionnaire data and began immersing herself in the social media activities of the 109 teachers who had opted into the second phase of research. Of those, 34 met the study's criteria of having a public social media presence related to teaching on at least one social media platform. Each teacher's most recent 20 posts were gathered from each social media platform. These posts were harvested using screenshots to capture both the text and visual data such as pictures on Facebook and Instagram.

The list was further narrowed to 13 teachers who actively used one or more platforms predominantly for teaching-related content, and those teachers were invited to participate in an interview. Six teachers agreed, although there was some variety in their interview types, whether synchronous or asynchronous, based on the participant's individual preference. This approach was selected given the unlikelihood of geographic proximity between the researcher and the participants and because of the flexibility of online tools for conducting interviews. These platforms also facilitated link sharing to direct the conversation back to particular social media posts for further discussion. The interviews were semi-structured in that the researcher used an interview guide but could

ask follow-up questions or alter the order of questions to fit the natural flow of the conversation. Such interviews marked the fourth movement of netnography: interaction.

The primary focus of each interview was to gain more depth of understanding about the nature and purpose of teachers' participation in social media for professional learning. This took place in a variety of ways. First, in synchronous interviews, the researcher shared examples of the teacher's social media posts and asked the teacher to comment on why she shared that content. In asynchronous interviews, the researcher prompted the participant to reflect on a particularly memorable social media post the participant had created and describe what made it significant to them. This approach mirrored a PhotoVoice methodology in which participants had the opportunity to reflect on their own photographs and posts to explain their own thinking (Wang & Burris, 1997). The approach is consistent with netnography's vision of treating participants as co-researchers who help construct understanding (Kozinets, 2015).

Second, the researcher asked about each platform that the participant uses and the types of content she expects to find or share through that platform. Third, the researcher inquired about the perceived benefits or drawbacks to using social media. Such interview practices are consistent with netnography's attempts to "question the relationship between online social interactions and other online activities and relate them to one another and to the wealth of other social interaction, affiliations, and activities in the person's life" so that "a fuller and more complete portrait of human social experiences can be drawn" (Kozinets, 2015, p. 61).

The fifth movement of netnography, integration, required the researcher to analyze the questionnaire and interview data more deeply, using an "ongoing process of

decoding, translating, cross-translating, and code-switching between parts and wholes, between data fragments and cultural understandings" (Kozinets, 2020, p. 142). This work informed the final movement, incarnation, in arriving at the themes that are presented in chapters four, five, and six.

Sample

During the online questionnaire phase, virtual snowball sampling was used to recruit participants (Baltar & Brunet, 2012). Virtual snowball sampling assumes that the author is part of a broader social network that shares links among users and redistributes those links to disseminate information beyond the researcher's immediate social network. Given that the researcher entered this study as an established teacher-blogger and active social media user with a following of several hundred teachers across multiple platforms, this seemed an appropriate strategy. Trust et al. (2016) used this approach to recruit over 1400 participants for their research. Their study was conducted by multiple researchers with their own social networks and targeted toward K-16 teachers, whereas a single researcher targeting elementary teachers conducted this study. As a result, the questionnaire link remained open for approximately six weeks until the response rate trickled to a halt, resulting in 287 unique responses.

During the content analysis and interview phases of research, 13 questionnaire respondents who had volunteered to be contacted and who had an active social media presence on multiple social media sites were invited to interview. Six of those teachers agreed to participate through either synchronous (2) or asynchronous (4) means. The researcher felt comfortable with this number given the range of experiences and

geographic settings these teachers represented, as well as the depth and similarities in their responses.

Data Collection Methods

Several computer-aided data collection methods were used in this research. First, the online questionnaire was created using Google Forms and distributed over Facebook, Twitter, Instagram, and Pinterest. Kozinets (2015) suggested that questionnaires can be an important starting point for netnographic research because they can illuminate trends and practices in people's online activities. Several other studies related to teachers' social media use incorporated similar instruments in their study design (Carpenter & Krutka, 2014, 2015; Duncan-Howell, 2010; Owen et al., 2016; Trust et al., 2016). The online questionnaire provided an inexpensive way to reach many elementary teachers and gather information about their social media practices.

Second, social media content was collected using screenshots. This method was selected to standardize the data collection process given the lack of uniformity between application program interfaces (APIs) of the different social media platforms. The screenshots were analyzed using Optical Character Recognition (OCR) to render any text searchable before the posts were organized in ATLAS.ti. These approaches were consistent with other studies that analyzed the content of teachers' uses of social media (Cho & Jimerson, 2017; Robson, 2018; Trust, 2015). The use of screenshots also facilitated the gathering of text, image, and video content—potentially important data sources in understanding social media use.

Third, two interviews were conducted using the online video conferencing services of Skype or Google Meet. This allowed for the spontaneity of face-to-face

conversations with participants across larger distances. Although an interview guide was used to structure the conversation, the researcher was able to ask follow-up questions as necessary to clarify meaning and probe deeper into ideas she found interesting. Conversations were recorded using Audacity, a tool selected because it only preserved the audio of the conversation since recordings including both audio and video could pose potential threats to participants' anonymity.

The remaining four interviews were conducted asynchronously using the online tool Flipgrid. The researcher provided a video introduction and a series of threads reflecting the same questions and prompts presented in the synchronous semi-structured interview guide. Participants could then work at their own pace responding through video recordings to each question. While this approach was used to accommodate the challenging work schedules of participants, it created several unique benefits and challenges to research that are explored in more depth in Chapter 3.

Interviews have been widely used in prior studies related to teachers' social media use (Britt & Paulus, 2016; Trust & Prestridge, 2021). Kozinets (2020) identified interviews as a particularly important data source for netnography because they allowed the researcher to connect online activities to other aspects of the person's life—in this case, the use of social media for professional learning and its connections to classroom and school-based practices.

Data Analysis Processes and Procedures

Exploring teacher perceptions of social media use for informal professional learning required the researcher to immerse herself in the social media landscape with its constructs of communication and practices while also stepping back to make sense of the

practices. This approach used inductive coding to find and organize meaning within the data sources (Kozinets, 2020; Maxwell, 2013). Those codes were then compared and organized into themes (Paulus & Wise, 2019). Detailed descriptions of these techniques are explored in greater depth in Chapter 3.

Organization of the Dissertation

Chapter 1 introduces the study, provides its background and rationale, states the problem, proposes a research question, offers a conceptual framework, and highlights the significance of the study. The first chapter also lists assumptions, defines key terms, and gives a general outline of research methods. Chapter 2 reviews the existing literature related to teachers' online professional learning through social media platforms. The chapter also examines informal learning and the perceived benefits and limitations of using social media for learning.

Chapter 3 provides a detailed look at the research design and theoretical framework. It includes the procedures for data collection and interview protocols as well as the rationale for the tools selected in this process. Chapter 4 reports the findings of the questionnaire while Chapter 5 reports the findings of the interviews. Chapter 6 synthesizes the questionnaire and interview findings to highlight common themes. Finally, Chapter 7 discusses the results and the implications for elementary teachers and administrators involved in creating, implementing, and evaluating professional learning activities. Recommendations for future research in this area are provided.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

The purpose of this study was to explore elementary teachers' attitudes toward different social media platforms when used for their informal professional learning. The study attempted to answer the question, "How do elementary teachers describe their use of social media for informal professional learning?" While many scholars have theorized about teacher professional learning using the features of different social media platforms, the explosion of social media platforms and their potential for integration has introduced new considerations for that process.

This chapter examines the existing literature about teacher learning through social media. It begins with an examination of the broad literature on teacher professional development and learning, highlighting practices that work and ones that limit success. Next the chapter describes the practices of informal learning and how they may contrast with more formal and traditional learning opportunities. The chapter then turns towards existing research on social networks in education and the qualities that make those networks potentially effective for changing individual practices. The chapter concludes by examining social media, describing the popular platforms du jour and explaining how teachers are molding those resources into professional learning networks.

Teacher Professional Learning

For decades, educational researchers have examined and debated the needs of teachers as learners. According to Darling-Hammond and McLaughlin (2011), effective

professional development should include "a range of opportunities that allow teachers to share what they know and what they want to learn and to connect their learning to the contexts of their teaching" (p. 84). Because curriculum and accountability measures are constantly evolving, professional learning tends to be a long-term process that uses a variety of opportunities to promote teachers' individual growth (Wells, 2014).

Teacher learning tends to be constructivist in that it requires collaboration across networks that can not only provide new ideas and practices but also foster critical reflection (Duncan-Howell, 2009). These networks of collaborating teachers are critical to learning. As Daly (2010b) explained, "informal webs of relationships are often the chief determinants of how well and quickly change efforts take hold, diffuse, and sustain" (p. 2). Whether the changes are small-scale, like an individual teacher's lesson plans, or large-scale, such as a school or district reform initiative, these networks play an important role in teacher empowerment, collective efficacy, and ultimately, student achievement (Daly et al., 2010). Towards that end, teachers are often encouraged to participate in professional learning communities, or PLCs (Louis & Marks, 1998; Vescio et al., 2008).

PLCs are defined by the act of sharing situated knowledge between teachers within a school with the expectation that doing so will increase the participants' knowledge and positively impact student learning (Vescio et al., 2008). Much of the framework for developing PLCs is derived from Wenger's (1998) social theory of communities of practice. Under this learning theory, the meaning of ideas is negotiated between participants who are engaged in a similar endeavor such as teachers working on the same grade level. As they participate in related teaching and learning experiences,

they share knowledge with each other, negotiating and renegotiating its meaning to alter

their individual practices (Wenger, 1998).

Although PLCs and communities of practice offer much to teacher learning in

terms of support and engagement (e.g., Jones & Dexter, 2014; Trust et al., 2017), there

are many situations where these learning structures do not adequately capture the

experiences of teachers as learners. Gee (2004) highlighted the ways in which these

"communities" tend to demarcate membership, creating categories of insiders and

outsiders. In reality, learning tends to be more fluid with people cycling in and out of

different experiences as needed while possessing different levels of knowledge and

leadership (Gee, 2004; Gee & Hayes, 2011). The ability to negotiate meaning with others

on an on-going, as-needed basis tends to be critical for teachers to feel supported in their

work as they reflect on their practices (Tour, 2017). As a result, teachers may need to

expand their "communities" to include participants beyond the traditional confines of

their workspace.

The Deficit Nature of Professional Development

Much of the professional development that happens in schools often ignores the

needs of teachers as learners. Although professional development is generally considered

important, no real consensus exists on what it should look like, leading to scattershot

reforms at best (Kennedy, 2016). Carroll (2010) reported that teachers tend to be isolated,

with little opportunity for meaningful collaboration, and they are subjected to externally

mandated professional development that may not meet their needs. In many situations,

teachers aren't even included in discussions for framing what types of professional

development are needed or desired (Zepeda, 2019). What gets offered tends to be "just-

in-case" rather than "just-in-time" (Hew & Hara, 2007, p. 574). In addition, teachers often receive conflicting messages about what to prioritize and find that efforts in one area may trade off with their time and energy to invest in another (Kennedy, 2016).

Formal professional development opportunities are often presented as a prescription needed to remedy some externally identified deficit in a teacher's performance (Kennedy, 2014b). Kennedy (2014b) described how this approach often categorizes teachers based on their expertise or deficiencies and relies on the "experts" to transmit their knowledge to others. Such professional development programs prescribe an explicit solution to a problem, often with step-by-step directions intended to mitigate a teacher's individual judgment in teaching (Kennedy, 2016). Not only do deficit models strip teachers of their professionalism in making decisions, but such models may also exacerbate power differentials among colleagues who could be working together toward more lasting change.

Outside prescriptions rarely generate the "aha!" moments that help teachers reorient their thinking on a particular topic (Kennedy, 2016). Moreover, the deficit model often relies on standardized tests as the primary measurement of teacher quality, obscuring other issues that may not be addressed by formal professional development experiences (Kennedy, 2014a). As a result, these prescriptive programs often fail to provide the "ongoing professional development that comes through practice, reflection and further exploration into the given field which serves to transform the novice into the expert" (Herbert & Rainford, 2014, p. 243).

The loss of teacher autonomy endemic to many formal professional learning programs is also concerning. If the goal is long-term and sustainable changes in teaching

practices, then teachers must be empowered as professionals to research and act upon issues (Wells, 2014). Instead, the more common approach toward teachers' professional development "has been to tie them up in bureaucratic, managerial knots that squeeze out autonomy and instead seek and reward compliance and uniformity" (Kennedy, 2014a, p. 691). While this approach may occasionally work when introducing topics that are new to everyone such as a new curriculum, it does little to address the contextual challenges that arise in teaching (Herbert & Rainford, 2014; Kennedy, 2014b). As a result, formal professional development efforts are rarely customized to meet the diverse needs of the teachers involved and are therefore considered inadequate (Jones & Dexter, 2017).

These problems with teacher professional learning are compounded by austerity measures that limit the resources available for professional learning. High-stakes testing and curriculum reforms add to the pressures of developing effective teaching, but without structures and resources to support the development of professional learning communities, teachers are left with limited options. Available funds are often spent on workshops, conferences, and one-time learning experiences with outside experts. While seemingly more cost-effective, the separation between professional learning that happens outside the classroom and the activities and attitudes prevalent inside the classroom may make it harder for teachers to enact proposed changes (Kennedy, 2016).

By necessity, teachers develop different ways of handling classroom situations, so adopting a new approach often also means abandoning a prior practice (Kennedy, 2016). In addition, as teachers invest their energies in one externally targeted area of concern, new challenges may arise and other problems may be exacerbated (Kennedy, 2016). As a

result, these isolated formal learning opportunities often lack the long-term support needed for sustainable change.

There are also situations where traditional professional development endeavors aren't feasible, as evidenced by the emergency move to remote learning due to the COVID-19 pandemic. When teachers encountered new problems of practice, many needed quick answers and turned to online spaces to gather diverse perspectives and discuss pedagogical strategies (Carpenter, Trust, et al., 2021; Greenhow & Galvin, 2021). This situation isn't unique to the pandemic. Greenhalgh and Koehler (2017) documented how teachers turned to Twitter to share resources and learn from one another following a terrorist attack in France. The need to respond in the classroom to such emergencies quickly and effectively highlights the importance of having avenues for learning that do not rely on formal structures.

Informal Learning

In contrast to the formal, prescriptive, and often one-time experiences of formal professional development, many teachers engage in meaningful, informal learning opportunities outside of school mandates (Tour, 2017). This section defines informal learning and examines each of its components within the context of teacher learning.

Informal learning is a broad concept that encompasses many activities common in everyday situations. Kyndt et al. (2014) defined informal learning as follows:

> Informal learning is characterized by a low degree of planning and organizing in terms of learning context, learning support, learning time, and learning objectives. Informal learning opportunities are not restricted to certain environments. The learning results from engagement in daily work-related activities in which

learning is not the primary goal. Informal learning is undertaken autonomously, either individually or collectively, but without an instructor. It often happens spontaneously and unconsciously. From the learner's perspective, it is unintentional. Finally, informal learning outcomes are unpredictable. (pp. 2393–2394)

Although informal learning is by no means unique to the field of education, teachers may be particularly dependent on informal learning—especially at the elementary level where opportunities for shared planning time with colleagues is less common (Grosemans et al., 2015). Indeed, such informal learning opportunities may be the only learning opportunities available to experienced teachers (Hoekstra et al., 2009). Given the importance of informal learning in understanding teacher learning, each of the features of the Kyndt et al. (2014) definition will be explored in greater depth.

Low Degree of Planning

Unlike the scheduled and structured characteristics of formal professional development, informal learning can happen anytime with very little planning. For example, colleagues routinely gathering in a break room to engage in casual conversations about resources or approaches would be considered informal learning (Rogoff et al., 2016). In some situations, confusion or a lack of follow-up related to a formal professional development activity may even be the impetus for engaging in these informal learning activities (Jones & Dexter, 2014). Marsick and Watkins (2001) described how critical reflection, proactivity, and creative thinking were all possible to enhance learning without the requirement of any sort of external facilitator. As a result, these learning opportunities can emerge whenever needed.

Not Environment Specific

While learning is traditionally expected to happen in a classroom, informal learning is not environment specific. Teachers may be learning informally as they listen to a podcast during their commute, for example, or as they chat with others about a particular social studies lesson while standing on the playground. Tour (2017) explained that the learning that occurs outside of officially organized experiences "is often more effective because everyday practices are meaningful and relevant to people" (p. 180).

Technology has greatly expanded the boundaries for where informal learning can occur. The constant access to networked communities online has enhanced opportunities for informal learning (Greenhow & Lewin, 2016). Teachers are now able to collaborate and learn from each other through both material and virtual spaces based on their individual needs and interests. Gee and Hayes (2011) labeled these spaces as "passionate affinity spaces." According to their description:

> Passionate affinity-based learning occurs when people organize themselves in the real world and/or via the Internet (or a virtual world) to learn something connected to a shared endeavor, interest, or passion. The people have an affinity (attraction) to the shared endeavor, interest, or passion first and foremost and then to others because of their shared affinity. (Gee & Hayes, 2011, p. 69)

This type of informal learning through affinity spaces is by no means a new phenomenon. Gee and Hayes (2011) detailed how early scientists such as Charles Darwin and Benjamin Franklin created their own affinity spaces by writing letters to others who shared their interests or occasionally meeting others face-to-face. What has changed is how accessible others with shared interests now are due to technology. Given this

historically unprecedented degree of access, informal learning is not limited to a fixed place or space, enabling teachers to greatly expand their opportunities for learning.

Embedded in Daily Work

Informal learning tends to be embedded in teachers' daily work, giving them the just-in-time support that is often missing from formal learning opportunities (Jones & Dexter, 2014). Such job-embedded professional development has been defined as "teacher learning that is grounded in day-to-day teaching practice and is designed to enhance teachers' content-specific instructional practices with the intent of improving student learning" (Croft et al., 2010, p. 2). Rather than relegating teacher professional learning to pre-planning and designated in-service days, informal job-embedded learning allows teachers to inquire, reflect, and refine their practices to meet their specific needs as adult learners (Zepeda, 2018a).

Through informal learning, teachers can choose which topics they pursue based on their individual needs (Trust et al., 2017). Such choice affects teachers' motivation because the learning is considered more functional and concept-driven than superficial (Rogoff et al., 2016). However, while the triggers for informal learning may be embedded in daily work, teachers don't often receive organizational support in the forms of time and access to engage in informal learning throughout their workday (Jones & Dexter, 2014). School-based leaders can develop a collaborative culture that facilitates job-embedded learning among teachers, but schools remain very inconsistent in these approaches (Zepeda, 2018b). As a result, teachers may have to find or create their own opportunities for informal learning.

Autonomous Learning

An important feature of informal learning is that it tends to happen autonomously. Teachers are likely to self-initiate learning to meet their individual learning needs (Tour, 2017). For example, a teacher may initiate a Google search on a topic of interest to try to find more resources for lesson planning. While these activities may start out in isolation, the resultant learning may be shared with colleagues, expanding the reach of informal learning (Jones & Dexter, 2017).

Teachers must have time to discover and then disseminate their findings. When elementary teachers have unstructured, informal opportunities to talk with other educators about their daily work, they are better able to make sense of their experiences and develop new directions for inquiry (Ambler, 2016). As a result, school structures will likely dictate whether this autonomous learning happens during the school day and whether teachers will share their findings with others (Jones & Dexter, 2014).

Unintentional and Unpredictable

A final characteristic of informal learning is that it tends to be unintentional and unpredictable. Marsick and Watkins (2001) contrasted the intentional, but unstructured format of "informal learning" with the more ambiguous and largely unconscious features of "incidental learning." As technology becomes more of a variable, however, the boundaries between informal and incidental learning are no longer clear. People are constantly harnessing mobile technologies for learning on demand without devoting much attention to planning these learning experiences (Dabbagh & Kitsantas, 2012). Indeed, even when people are purposeful about engaging in a learning activity like talking to a colleague or performing an internet search, the findings are often

unpredictable. As a result, the learning that happens through informal means is often unintentional and unpredictable.

Social Networks in Schools

Recent social networking research has begun to uncover the characteristics of effective social networks in schools that make for powerful agents of change. This section explores those characteristics.

Collaborative Environments

Effective social networks are highly collaborative environments that build trust and support two-way communication. As Katz and Earl (2010) explain, "networked learning communities are based on the conviction that when educators work together, they will *create new knowledge and spread it to others*" (p. 34, emphasis in original). The spread of knowledge happens through back-and-forth exchanges in which members of the network share ideas and offer strategic advice (Bell et al., 2006).

When leaders foster dialogue and solicit feedback from members of a social network, actors develop a sense of ownership over the efforts of the network (Leithwood & Azah, 2016). This facilitates trust and internal accountability because people are aware of the process leading up to decisions and who will be responsible for carrying them out (Rincón-Gallardo & Fullan, 2016).

These effects are magnified in situations where social media is incorporated into the social network. When the general public and external stakeholders feel that they can participate in the conversation through tools such as Twitter and Facebook, they are more likely to buy into the leader's goals (Carr, 2011). Such tools also increase the regularity by which members of the network can collaborate and share, as they are no longer

restricted to the typical hours of the school day and can pay more attention to the quality

of the collaboration (Leithwood & Azah, 2016).

Rincón-Gallardo and Fullan (2016) found that frequent social interactions have

the most powerful effects on changing behaviors because actors are being constantly

reinforced through feedback and support by members of a social network. As a result,

members are more likely to help each other engage in problem solving and collaborate

toward a particular outcome.

Clear Goals and Purposes

Effective social networks have clear goals and purposes to facilitate collaborative

inquiry. In the early stages, effective social networks seek to ensure that everyone has a

common vision of what is expected by asking clarifying questions and communicating

ideas in concrete ways (Rincón-Gallardo & Fullan, 2016). Once those goals are

developed, members undertake collaborative inquiry processes that engage the network

in sharing possible resources and thinking, reflecting, and challenging each other's

thinking (Earl & Katz, 2005).

In addition, because these actors are well connected to each other, effective

networks have the unique ability to focus on the work of progress monitoring (Leithwood

& Azah, 2016). The participants are immersed in the task, and this makes it more likely

that they will be more productive. Leithwood and Azah (2016) also found that effective

networks tend to be better at communicating their goals and accomplishments. Such

sharing of success stories, they argued, keeps actors within the network more motivated

and consequently increases the likelihood of positive change within the organization.

Fluid Leadership Structures

Effective social networks avoid traditional hierarchies of power and embrace fluid leadership structures. Unlike a formal administrative structure headed by a superintendent with levels of power flowing down through the organization, effective networks recognize that leadership should depend on the task and the type of knowledge required (Rincón-Gallardo & Fullan, 2016).

Decision-making responsibility does not fall solely on one person's shoulders because members of the network are involved in discussing and resolving the issue. As Penuel et al. (2010) described, "an important characteristic of social networks in a school is that even though they are structured, they are also permeable, and all actors in a school grapple with the institutional pressures on their school" (p. 176). Anyone who might contribute to the organizational goals will be welcome to participate in the networks (Leithwood & Azah, 2016). These social networks thus empower people who may not have formal leadership roles. When this is done effectively, social networks have the potential to develop important leadership skills for new generations of leaders as they witness firsthand the impact of effective collaboration on behalf of their students (Rincón-Gallardo & Fullan, 2016). As a result, the network may be self-perpetuating as it regenerates the motivation, knowledge, and leadership necessary to confront future challenges.

Outside Connections

Effective social networks embrace opportunities for outside connections. While these networks rely on strong ties within their organization to carry out initiatives, they also work to develop weak links to external experts so that they can bring in outside ideas

as needed (Leithwood & Azah, 2016). Social media is particularly useful for these links because tools such as Twitter can provide teachers and principals access to prominent thought leaders in education (Cox & McLeod, 2014). Cox and McLeod (2014) argued that access to thought leaders helps level the playing field among schools because they can all gain access to innovative ideas and forge connections beyond their geographic network. Daly (2010a) supported this premise, as he argued that "personal connections between leaders often trump geography and distance in supporting the flow of resources related to improving schools" (p. 263). Such outside connections promote innovation and renewal as actors consider practices from different perspectives (Rincón-Gallardo & Fullan, 2016). Ultimately, this benefits the collective intelligence of the network because an abundance of diverse ideas will become represented (Leithwood & Azah, 2016).

Social Media

Although informal learning and social networking has been happening since the dawn of humanity, the advent of the internet and social media have greatly expanded opportunities for informal learning. When social networking sites such as Friendster (2002), MySpace (2003), and Facebook (2004) first came onto the scene, less than 63% of all Americans were internet users, and fewer than 5% were using these types of social media platforms (Pew Research Center, 2018a, 2018b). Since that time, internet and social media use have exploded. Today, 90% of all U.S. adults have internet access, and that number goes up to nearly 100% when looking at Millennials aged 25 to 40—a group that makes up the largest proportion of the workforce (Schaeffer, 2019).

In addition, over 73% of Americans use multiple social media platforms with the median number being at least 3 platforms (Smith & Anderson, 2018). While Friendster

and MySpace have been replaced by social media juggernauts like Twitter, Instagram, and Pinterest, social media has firmly established its place in modern life. Virtually every website offers opportunities to connect with the content provider by following them on Facebook or Twitter or by sharing content through social media.

Operational Definition of Social Media

To understand the concept of social media, it is first helpful to appreciate the ways internet use patterns have evolved. In the early days of internet use, individuals tended to produce content and services that were static and intended for end-user consumption. Kaplan and Haenlein (2010) explained that the early 2000s marked a time when platforms began to be designed for continuous user modification to encourage participation and collaboration. Although the internet has always been a host for user-generated content, computing advances ushered in a new era when technological, economic, and social factors all collided to facilitate more capabilities for user-created content (Dede, 2008; Gruzd et al., 2012; Kaplan & Haenlein, 2010).

Hardware and software were more readily available, and broadband internet access was increasingly popular. This allowed people to participate in a more collaborative internet experience that included blogs, collaborative projects such as wikis, social networking sites, content communities such as YouTube and Flickr, virtual social worlds like Second Life, and virtual game worlds such as World of Warcraft (Kaplan & Haenlein, 2010).

While each platform had its own target audience and design features, they shared many common characteristics such as the ability to visit and connect with other users and share content across the system. Social media is therefore broadly defined as:

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Any website or web-based service that…contains some aspect of user generated

content. This includes a wide variety of technologies from video/teleconferencing

tools such as Skype and online media repositories such as Flickr, to

microblogging tools like Twitter and social networking sites like Facebook and

Academia.edu. (Gruzd et al., 2012, p. 2341)

While many platforms may be included in this definition of social media, a few platforms

have risen above the others in terms of name recognition and everyday use (boyd, 2015).

As a result, websites like Facebook, Twitter, Pinterest, LinkedIn, and Instagram are often

considered synonymous with social media. For example, the Pew Research Center's

Internet, Science, and Technology division focuses exclusively on these types of social

networking sites in its annual *Social Media Fact Sheet* (Pew Research Center, 2021).

Therefore, while a multitude of platforms may facilitate social activities online, most

users confine their activity to a relatively small number of platforms.

Examples of Social Media

Social media dominates the internet. According to DataReportal (2021a), a global

researcher of online trends, there are now over 17 platforms that have over 300 million

monthly active users worldwide. Among those sites, several have especially gained

traction in the United States: Facebook, Instagram, LinkedIn, Pinterest, and Twitter.

These sites offer a variety of features and account for five of the top six social media sites

in a recent survey (Auxier & Anderson, 2021).

While many people are likely already familiar with Facebook, Instagram,

Pinterest, and Twitter, the frequent evolution of these platforms necessitates a description

of the technological and social contexts in the timeframe of this study (Paulus & Wise,

2019). This section will therefore explore Facebook, Instagram, Twitter, and Pinterest as examples of social media.

Facebook

Originally founded in 2004, Facebook has become the goliath among social media sites. As of October 2021, it had 2.895 billion monthly active users (DataReportal, 2021a). Within just the United States, 73% of all U.S. college graduates use Facebook, and 70% of those Facebook users check it at least daily (Auxier & Anderson, 2021).

Facebook hosts a number of features that align with Gruzd et al.'s (2012) definition of social media. Fundamentally, Facebook users create a profile that can include photos, videos, text, and personal information about the individual. Once this profile has been established, users can connect to others by sending a "friend request" that must be accepted for the connection to be made. Once connected, users can view each other's posts on a "newsfeed" that summarizes activity among a user's "friends." Users can then "like" content using a range of emoticons, leave a comment on a post, or both. Users may also send messages to one another by posting on a person's profile page—making it public to other friends—or send a private message directly to an individual user.

As Facebook has grown in popularity, features such as "groups" have been added. These groups allow users to connect with others around common interests. Groups may be public, allowing anyone to join, or private, requiring invitation or approval by existing members. While many of these groups are searchable through Facebook, others are considered "secret groups," which protect the view of all group activities from non-

members. As a result, users have control over their connections to individuals and groups with a wide range of privacy options.

Instagram

Instagram is a mobile-based social networking site for sharing visual content. Posts consist of photos or videos that may be accompanied by captions and hashtags to identify topics relevant to the picture or user. Founded in 2010, Instagram took less than two years to become a major player in the social media world. Facebook purchased Instagram for $1 billion in 2012 when its user count was a mere 30 million users worldwide (Rusli, 2012). Its growth has been explosive ever since. As of November 2021, Instagram boasted nearly 1.4 billion users worldwide with over 157 million active users in the U.S. alone (DataReportal, 2021b). Among Americans, 49% of all college graduates are on Instagram (Auxier & Anderson, 2021).

Like Facebook, Instagram allows users to create their own profiles and connect with other users. One significant difference, however, is that connections do not have to be reciprocal. Most profiles are public unless users restrict the privacy settings to only share with followers they approve. This means that a user can follow or request to follow the posts of any other Instagram user without necessarily having to share their own posts. Once following other Instagram users, the user will view a stream of recent photos and videos shared by others in the network. Users can "like" a photo by double tapping on the image through their mobile device or clicking a heart icon. They can also comment, save photos, or send a direct message to the person who posted the content.

Instagram users can connect with other users in a variety of ways. First, Instagram suggests people to follow based on the characteristics of the user's profile or activities.

Such suggestions may be based on Facebook connections, common followers, photos liked, or prior searches. Second, Instagram uses hashtags to facilitate searches for specific content. For example, a search for #teachersfollowteachers yields nearly six million photos organized by the nine "top posts" along with the most recent posts using that hashtag. Users can then view those photos and choose to like or follow any of the content they see. Finally, users can search for other users by their username or location.

Twitter

When Twitter was founded in 2006, users began sharing content 140 characters at a time. In 2017, that limit doubled to 280 characters. These posts, known as "tweets," can consist of text, photos, videos, animated graphics (GIFs), and polls. Because of the character limits, Twitter users developed their own conventions—many of which have been adopted on other social media platforms—to guide communication. For example, Twitter is largely credited as the origin of hashtags to facilitate finding common topics or interests on social media (Brown, 2013). In education, such hashtags can also signify real-time chats scheduled each week around a central topic such as #4thchat—an hour-long discussion for fourth grade teachers on Tuesday nights. In addition, the "@" symbol is used to communicate with other users, and people can "retweet" (indicated by the prefix "RT:") other users' content to show their support.

Consistent with Gruzd et al.'s (2012) definition of social media, Twitter users can create a profile, follow other users, and see connections within other users' networks. Like the other social media platforms, Twitter suggests people to follow based on the individual user's unique contacts, interests, and searches. This helps connections expand

within its user base of over 436 million monthly active users worldwide (DataReportal, 2021d).

Within the United States, 33% of all college graduates use Twitter (Auxier & Anderson, 2021). Twitter users tend to be more educated than the demographics found offline or on other social media platforms. One survey of American adults found that 42% of Twitter users have at least one college degree, which is higher than the U.S. average of 31% of adults being college graduates (Hughes & Wojcik, 2019).

Of all the social networking platforms, Twitter has received the most attention among researchers studying other teachers' online activities (e.g., Carpenter & Krutka, 2014; Greenhow & Galvin, 2021; Nochumson, 2021). This research emphasis is likely due to Twitter's relatively research-friendly application programming interface (API) and terms of use (Paulus & Wise, 2019). Twitter is also considered particularly efficient and accessible for busy educators given the shortened form of the content and the potential for quick responses due to the constant activity on the site (Carpenter & Krutka, 2015).

Pinterest

Pinterest, a visual social bookmarking site created in 2010, describes itself as "the world's catalog of ideas" (Pinterest, n.d.). Like other social media sites, users can create a profile, connect with others, and share messages and links. Pinterest highly emphasizes visuals over text, however. Users are initially directed to a screen that shows what other users in their network are "pinning." These "pins" are images taken from other websites and blogs with embedded hyperlinks to direct users to the original source. If a user sees something of interest, the image can be "pinned" to the user's board and organized by topic or content. For example, users might pin a picture of a recipe that they want to try

and save it to a board titled "recipes to try." Such boards may be public or private. Boards may also be curated by an individual or shared between multiple pinners gathering resources on a particular topic, and there is no limit to the number of boards a user may have.

Users may search for pins based on broad categories such as "education" or narrow topics such as "teaching fractions." They can also follow users' individual boards or complete profile based on the perception of shared interests. Although users have the option to "like," "comment" on, or "share" pins through direct messages to others, "repinning" to a user's own board an image someone else has shared seems to be the primary way of validating content, as Pinterest measures the number of repins.

As of October 2021, Pinterest had 444 million active monthly users worldwide (DataReportal, 2021c). Much like the demographic of elementary teachers in the U.S., Pinterest users are predominantly female (DataReportal, 2021c). Among college educated Americans, 37% are active Pinterest users (Auxier & Anderson, 2021).

Affordances of Social Media

Unlike more conventional forms of electronic conversations such as email, social media can make thinking visible to others beyond those who are immediately involved in the conversation. In that regard, Leonardi (2017) characterized social media as a "leaky pipe" that, by design, distributes knowledge to a broader and unknown audience. This makes information more widely accessible to others, including "lurkers" who are not actively participating in the conversation but still benefit from the content (Beaudoin, 2002; Preece et al., 2004). In addition, this visibility can help users develop a better

understanding of not only what is known but also who to approach for more information about a relevant topic (Leonardi, 2017).

Social media also has the benefit of expanding a person's reach beyond the people immediately accessible through face-to-face personal and professional networks (Jones & Dexter, 2014). This can facilitate access to new and different types of information (Dede, 2008) and allows users to crowd-source specialized information that may be useful to teachers (Greenhow & Lewin, 2016). Teachers can channel their professional curiosity toward like-minded peers and advance their learning beyond just solving immediate problems of practice (Prestridge, 2019). As more teachers turn toward social media for their personal and professional use, knowledge may be constructed collaboratively through these online channels.

Social media also promotes teacher autonomy. In allowing teachers to self-select online spaces, social media acts as an important source of emotional support and identity development (Greenhow et al., 2018). Teachers use social media to engage in connected learning that is based on their personal interests and passions (Prestridge et al., 2021), and when seeking emotional support, this self-selection is critical. Individual responses to trauma and disruption are highly varied, but social media allows educators to find the specific camaraderie and support they need to stay afloat (Carpenter, Trust, et al., 2021).

Limitations of Social Media

Although social media use has become nearly ubiquitous in the United States, the medium presents unique challenges to teachers. Whereas teachers could often clearly separate their personal and professional identities, those boundaries are no longer so clear with social media (Fox & Bird, 2017). Some teachers have been fired due to the content

of their social media posts, creating unique legal and privacy issues surrounding their use of social media (Williamson, 2013). As a result, there may be hesitance to use social media at all, or teachers may be very guarded about how they use it.

Another limitation of social media is the amount of time needed to engage with it. Although many people use multiple social media sites each day (Greenwood et al., 2016), sifting through content can feel like falling into a rabbit hole. Trust and Prestridge (2021) reported that many educators were deterred from using social media due to the time needed to engage with it effectively. Users are also at risk of social media fatigue due to the overwhelming flow of information constantly being shared (Bright et al., 2016).

Concerns about the quality of information being shared through social media are also becoming more common. For example, some teachers are using social media to become "influencers" who build a following and carve a niche for themselves as experts within education (Prestridge, 2019). When coupled with creating content for TeachersPayTeachers.com, an online educational marketplace where teachers market their creations to other teachers, this can be particularly problematic. Shelton et al. (2021) documented how the platform has allowed the proliferation of harmful and even racist content to be marketed with little recourse, and this trend may have been buoyed by the pandemic when the emergency circumstances of remote teaching resulted in teachers using resources discovered online without properly vetting them (Carpenter, Shelton, et al., 2021). Therefore, it is vitally important to understand how social media is being leveraged by teacher-users.

Professional Learning Networks

Within the literature on teacher professional learning, Borko (2004) offers

evidence that "strong professional learning communities can foster teacher learning and

instructional improvement" (p. 6). While much of this research assumes that these

professional learning communities (PLCs) are face-to-face and situated within individual

schools, newer research offers hope for the potential of online professional learning

networks (PLNs) developed through social media in "supporting multiple areas of

professional growth, including affective, cognitive, identity, and social growth" (Trust &

Prestridge, 2021, p. 1). Such online PLNs can take many forms, offering a range of

opportunities and topics for professional support.

Major Functions of Online Networks

Swanson (2013) identified three major functions of such online networks for user-

generated professional learning: curation, reflection, and contribution. This section will

explore each of these functions in greater depth.

Curation

Curation refers to the process of collecting and organizing resources related to a

single topic or multiple topics. For example, teachers use Pinterest to curate images and

links to lesson ideas organized by topic. Findings may be labeled and further categorized

by the user, and such resources may be shared with others who are interested in the same

topic. As Cummings (2015) described, "unlike a traditional professional development

workshop, which moves at one speed and appeals to a broad audience, Pinterest can be

much more individualized" (para. 9). Teachers search for what they need in the moment

and can discover resources and ideas to use the very same day. That teachers are taking

advantage of this "just-in-time" professional learning is evident by the growth of education-related pins on Pinterest. Cummings (2015) reported that education pins grew from 500,000 to 1.3 million pins per day in less than a year.

According to Swanson (2013), "the act of curation forces your brain to create neural connections to specifically defined shelves in your brain….Curating, tagging, and organizing provide your brain with multiple access points to the same content, allowing you to think flexibly and identify patterns" (p. 43). This process does not require a lot of social interaction, but it does enable teachers to discover examples of work being done in other classrooms. Such work may also promote teacher leadership and job satisfaction as teachers curate resources to aid in the professional development of other teachers (Carpenter et al., 2016). In a field with limited opportunities for career advancement and leadership, social media may be an important outlet.

The act of curating resources is by no means limited to Pinterest. In Carpenter and Krutka's (2015) survey, one respondent described Twitter as "'better than Google for finding material and resources relevant to my needs' because content was recommended by fellow educators whose curation of content she had grown to trust" (p. 716). While less research has been done on curation within Facebook and Instagram, one could reasonably infer that teachers would experience similar benefits within their PLNs given each platform's ability to search and save content for immediate or future reference.

Reflection

Reflection happens through sharing thoughts or resources through social media or blogs. According to Williams and Olaniran (2012), blogs allow teachers to create new content that reflects their thoughts and feelings while receiving valuable external

feedback. When teachers blog, they often use social media platforms to publicize links to their content. Many others use these platforms to engage in the practice of "microblogging," meaning they ask questions, share experiences, and reflect on their practices through texts shorter than a full, multi-paragraph blog post. In fact, some research suggests that the character limits on Twitter force teachers to be more reflective and considerate of their message given space constraints (Benko et al., 2016).

When teachers engage in this process, it enables them to make connections between ideas, understand how to apply new concepts or ideas, and ultimately, improve student outcomes (Swanson, 2013). Arnold and Paulus (2010) pointed out that the process resembled a journal wherein the teacher can see personal progress over time. It also enabled teachers to receive immediate and ongoing feedback from outside sources (Archambault et al., 2010; Williams & Olaniran, 2012).

Although most of the existing research focuses on Twitter and Facebook for generating reflection, Pinterest and Instagram also show potential in this regard. Krutka et al. (2016) recounted how the act of seeing what others are doing can prompt teachers to engage in reflective practices. A teacher might look at an image of another teacher's classroom, for example, and compare that image to the teacher's own classroom. In the process, the teacher may feel validated by similarities or decide to make modifications based on the image. In addition, Billen (2015) found through her research on pre-service teachers using Instagram that teachers tended to notice more details because of the visual aspects of Instagram-based reflections.

The act of looking for things to photograph prompted teachers to search for images that would capture their thinking and facilitate future reflection once they looked

back on their visual diaries of posts. Social media tools enable these practices to be recursive and ongoing. Indeed, many teachers perceive that they can learn through the vicarious experiences of watching other teachers or peering into their classrooms through photos and short videos (Parsons et al., 2019). In a field that is commonly described as having closed doors and isolated teachers, such windows into diverse classrooms could be assets for teacher learning.

Contribution

Contribution may take the form of sharing knowledge, engaging in discussions, commenting on users' posts, or offering general feedback. Some of these discussions happen in real-time, such as "Tweet Chats" on Twitter (Greenhow & Galvin, 2021). For these, people interested in a particular topic will follow a hashtag and discuss an agreed upon topic at a set time. Other conversations happen asynchronously through Facebook posts and Instagram comments where participants read and respond on their own schedules. Both approaches allow teachers to engage in knowledge sharing with others who have similar interests and are considered unique benefits to engaging with social media. Carpenter and Krutka (2015) explained that the "personalized, immediate and interactive nature" of Twitter is viewed as more supportive than traditional forms of professional development because teachers can get what they need when they need it (p. 714). As teachers branch their networks onto other platforms, these benefits will likely continue.

Factors Motivating Participation

Participation in PLNs varies across teachers and platforms with a high level of nuance (Trust & Prestridge, 2021). Hur and Brush (2009) identified five reasons for

teacher participation in online communities: (1) sharing emotions, (2) harnessing the advantages of online environments such as anonymity, asynchronous conversations, and outside ideas, (3) combating isolation, (4) exploring new ideas, and (5) experiencing a supportive community (pp. 290–291). These five categories provide a useful framework for analyzing much of the existing research.

Sharing Emotions

Social media has significant potential as a source of emotional support for teachers at all stages of their careers. Rodesiler and Tripp (2012) suggested that many pre-service teachers turned to specific blogs for emotional support because they found solace in reading about teachers who share similar struggles. Hur and Brush (2009) found that this type of emotional sharing was prevalent on some discussion boards, allowing teachers to share both positive and negative emotions related to teaching and receive supportive feedback as a result. Teachers may not feel comfortable sharing such emotions with colleagues at their workplace, fearing that they "might be seen as incapable teachers if they shared problems or asked questions in their local schools" (Hur & Brush, 2009, p. 293). But social media allows teachers to pose questions or share thoughts to a different and potentially more responsive audience.

The potential emotional benefits of online sharing are not limited to those teachers who are struggling in the classroom. Carpenter and Krutka (2015) found in their survey of Twitter-using educators that teachers took pride in sharing resources and offering advice to other teachers. Even the act of "pinning" resources on Pinterest delivers some gratification because teachers are curating content for peers to access (Carpenter et al., 2016). In a field where opportunities for leadership and career advancement are often

limited, these emotional benefits may be especially important to teachers' levels of job satisfaction.

Finally, the work of teaching is becoming increasingly politicized, especially in America (Goldstein, 2015). Robson (2018) and Brickner (2016) determined that social media may provide a "safe space" for teachers to participate in political dialogue with like-minded peers and show solidarity with one another. In addition, Hur et al. (2012) found that "teachers' emotions affect how they organize curriculum and interact with students" (p. 223), so having a safe online community to share such emotions provides an important coping mechanism. As teachers find themselves dealing with the challenges of changing policies, budget cuts, and heightened scrutiny by the public and politicians, these outlets are invaluable (Carpenter, Trust, et al., 2021).

Leveraging Advantages of Online Environments

Online learning communities are well suited to respond to individuals' varying levels of time and motivation. As Duncan-Howell (2009) explained, "Online communities are not constrained by time nor is membership required to be active. This allows members to move through periods of high to low activity over longer periods of time as dictated by work and personal commitments" (p. 603). Surprisingly, Kamalodeen and Jameson-Charles (2016) found that teachers participate most during the busiest times of year such as the start of the school year when teachers are setting up their classrooms. They theorized that teachers may be more interested in seeking fresh ideas during these stretches, and online platforms may support these interests.

Unlike formal professional development that has a scheduled time and place, online learning gives learners a range of choices about when and how to contribute,

allowing better life-work balance (Hao, 2012). Twitter, for example, is considered

particularly efficient and accessible for busy educators given the shortened form of the

content and potential for quick responses due to the constant activity on the site

(Carpenter & Krutka, 2015).

Teachers perceive benefit in the flexibility of online communities as is evidenced

by the amount of time they report engaging with these online resources. According to

Duncan-Howell (2010), teachers who participated in online communities averaged

spending 1-3 hours per week engaged with other teachers online, yielding an additional

60-80 hours of professional learning each year compared to those who did not participate

in online communities. Such social media use may become a natural part of a teacher's

daily routine, facilitating actionable learning throughout the school year (Prestridge,

2019). These use patterns are particularly striking given findings that teachers need

nearly 50 hours of professional development to improve their skills and impact student

learning (Darling-Hammond et al., 2009). Teachers who are participating in online social

networks may be achieving these goals while others are not.

Online platforms such as Twitter, Facebook, Instagram, and Pinterest also lack

financial and geographic constraints. This enables teachers to access materials beyond

what their school may be able to support. For example, Visser et al. (2014) report that

several teachers are now able to attend major regional and national conferences virtually

by following a particular hashtag. While the teachers may not reap all the face-to-face

benefits of attending a conference, they are able to access presentations, handouts, and

other materials as though they were at the event. Similarly, Le et al. (2021) saw

significant advantages for increased professional learning opportunities in their study of social media use among teachers with limited resources.

Combating Isolation

Online communities can play an important role in combating teacher isolation. Teachers may feel isolated based on a lack of common interests with others in their building (Hur & Brush, 2009). Even when common interests exist, the school day may not offer adequate opportunities for like-minded colleagues to talk (Hur & Brush, 2009). Others may be subject-area specialists who do not have colleagues in their schools who are familiar with their content area (Robson, 2018). Or, as the COVID-19 pandemic demonstrated, teachers may be forced to make abrupt transitions without access to typical professional development opportunities (Carpenter, Trust, et al., 2021).

Participation in online communities may address these concerns by offering countless opportunities to reach out to other role-alike teachers through synchronous and asynchronous platforms without worrying about interference with schedules or other obligations. Teachers can join as needed, and collegial and pragmatic support is constantly available (Kelly & Antonio, 2016; Krutka & Carpenter, 2016). Hashtags allow teachers to unify under shared interests or circumstances and rally together to combat those feelings of isolation (Greenhalgh et al., 2021).

While some teachers may prefer to participate in online communities using pseudonyms or other monikers that protect their identity, other teachers have turned their online relationships into offline connections. For example, after establishing meaningful interpersonal relationships by participating in Twitter communities, some teachers report meeting up with those contacts in person through conferences and other opportunities

(Visser et al., 2014). Other teachers report taking the ideas they have encountered on social media back to their schools to build relationships with teachers in their local environment (Forte et al., 2012). Such bridges between the online and offline world provide teachers new opportunities for the collaborative relationships they need to grow as educators.

Exploring New Ideas

Teachers are motivated to find practical strategies that they can use in their classrooms and engage in topics that are interesting to them (Duncan-Howell, 2010). One of the largest benefits of social media is its immediate access to new resources and perspectives that have been filtered through other educators. Carpenter and Krutka (2015) shared how one teacher reported a preference for searching for lesson ideas on Twitter rather than Google, for example, because the resources shared in response to a query tended to be ones that had already been vetted by other teachers and were therefore seen as more credible. Similarly, teachers are increasingly turning to sites like Pinterest to find lessons they can implement immediately or save for future use (Hooks, 2015; Lundgren et al., 2021). This type of just-in-time learning exposes teachers to new ideas when they are ready to receive them.

Evidence suggests that what is learned and discussed in online forums often transfers to classroom practice. Duncan-Howell (2009) conducted a study of message content within three different online communities for teachers and found significant evidence of authentic context-based learning. She found a substantial number of references to personal classroom experiences and suggestions of possible solutions to problems and, based on the resulting online discussions, she concluded that "members

were actively applying these ideas to their own classrooms" (Duncan-Howell, 2009, p. 610).

Discussions within professional groups on Facebook have also been linked to positive outcomes in practice (Nelimarkka et al., 2021; Ranieri et al., 2012). Visser et al. (2014) shared that some participants in social media-based professional development viewed their experience as "transformative in nature, resulting in improved classroom practice" (p. 407). In another study, teachers who increased their familiarity with social networking tools reported that they felt more student-centered in their classrooms as a result (Archambault et al., 2010).

Exposure to new ideas presents other opportunities to teachers as well. According to Visser et al. (2014), "as a result of Twitter, respondents reported learning about the latest research, pedagogical strategies, and best practices; discovered Web-based resources, lesson plans, and innovative ideas about literacy instruction; and even reaped professional benefits" such as receiving grant money and being interviewed on podcasts (p. 407). The emphasis on sharing information and resources by teachers using social media makes it more likely that these types of opportunities will be publicized and accessed (Forte et al., 2012).

Several studies suggested that teachers engage in reflection as they are exposed to new ideas through social media (Benko et al., 2016; Billen, 2015). Reflection is an important aspect in authentic adult learning as it helps teachers work through new ideas and reach better understandings of a topic (Zepeda, 2012). Billen (2015) found that teachers who shared images of their classrooms on Instagram were more likely to engage in reflection because they captured images of things they wanted to discuss with other

teachers. The photos also documented changes in teachers' thinking over time and sparked more vivid memories for reflection than text alone (Billen, 2015). Similarly, Benko et al. (2016) contended that Twitter users were likely to engage in critical reflection over ideas and may spend more time doing so as they work to clarify their ideas within the character limits. Therefore, teachers are using social media not only to discover new ideas, but also to process and reflect on those discoveries.

Experiencing a Supportive Community

While the professional development literature has described the growth of professional learning communities for localized teacher learning, professional learning networks are largely seen as the online equivalent (Krutka et al., 2016). According to Trust et al. (2016), "PLNs offer new spaces in which teachers may learn and grow as professionals with support from a diverse network of people and resources…[PLNs] often incorporate multiple communities, networks of practice, and sites that support both on- and off-line learning" (p. 17).

Many teachers attributed affective, cognitive, and social benefits to their participation in a PLN due to its flexibility in addressing diverse needs (Trust et al., 2016). Participation and engagement may be highly personalized, influenced by individual goals, confidence with the subjects being discussed, time constraints, online space dynamics, and personal relationships (Trust & Prestridge, 2021). This movement toward personalized learning is consistent with Opfer and Pedder's (2011) suggestion that a one-size-fits-all solution to teacher learning is unrealistic given the large amount of variability between teachers, students, and contexts. Where limitations inhibit the development of an effective PLC within a school, teachers can take control of their own

learning and access communal support through a PLN. While researchers have not

sufficiently analyzed whether collaboration with outsiders can yield results like

collaborative work within a school, early indications are promising (Prestridge, 2019;

Trust et al., 2016).

Given that Facebook, Twitter, Instagram, and Pinterest are each less than twenty

years old, researchers still have much to learn about the potential for social media to

contribute to professional learning. Early research in the field suggests significant

benefits to teachers who participate and collaborate online, but as these social media

platforms evolve and new ones emerge, more research will be needed to understand their

place in the personalized professional development of teachers. It is clear, however, that

social media has become ubiquitous, and teachers should harness the opportunities it

offers to benefit their own learning and the learning of their students.

Chapter Summary

Teacher professional learning happens in constructivist environments where

teachers collaborate and communicate with each other (Daly, 2010b; Daly et al. 2010;

Darling-Hammond & McLaughlin, 2011; Duncan-Howell, 2009). Unfortunately, deficit

models of professional learning have several limitations that hamper collaboration and

reform (Carroll, 2010; Herbert & Rainford, 2014; Hew & Hara, 2007; A. Kennedy,

2014a, 2014b; M. Kennedy, 2016; Prestridge, 2019; Wells, 2014). By contrast, informal

learning that happens outside of formal professional development structures may offer

significant opportunities for teacher learning (Ambler, 2016; Greenhow & Lewin, 2016;

Jones & Dexter, 2014; Kyndt et al., 2014; Marsick & Watkins, 2001; Rogoff et al., 2016;

Tour, 2017)

Used effectively, social networks can produce change in schools (Bell et al., 2006; Carr, 2011; Earl & Katz, 2005; Katz & Earl, 2010; Penuel et al., 2010; Rincón-Gallardo & Fullan, 2016). They embrace outside connections to carry out initiatives that may be impossible using just internal ties (Cox & McLeod, 2014; Daly, 2010a; Leithwood & Azah, 2016).

Social media sites such as Facebook, Instagram, Pinterest, and Twitter offer several affordances that create new opportunities for informal learning through social networks (Carpenter, Trust, et al., 2021; Greenhalgh et al., 2016; Greenhow & Galvin, 2021; Kaplan & Heinlein, 2010; Preece et al., 2004; Visser et al., 2014). However, these platforms also present privacy concerns (Fox & Bird, 2017; Williamson, 2013) and time management issues for teachers (Greenwood et al., 2016; Trust & Prestridge, 2021).

When teachers use social media, they often participate in professional learning networks to leverage the greatest benefits from the platforms and their colleagues (Benko et al., 2016; Billen, 2015; Carpenter et al., 2016; Duncan-Howell, 2009, 2010; Hur & Brush, 2009; Hur et al., 2012; Prestridge, 2019; Trust et al., 2016; Trust & Prestridge, 2021).

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The purpose of this study was to explore elementary teachers' experiences using social media platforms for informal professional learning. The study used a questionnaire to inquire about elementary teachers' practices and preferences for using social media platforms for informal professional learning. Six respondents were then selected for collection of their social media content and semi-structured interviews. The teachers were interviewed about their experiences using social media as they accessed or shared information through these platforms and whether these choices influenced their perceptions of personalized professional learning. Some were also asked questions using photovoice techniques (Wang & Burris, 1997; Woodgate et al., 2017) to examine particular social media content they had posted.

This chapter includes the research question, the conceptual framework that guided the research, and a description of the research design—including its rationale, data collection methods, and the process for analyzing the data. It concludes with an explanation of the ethical considerations faced by this research and an evaluation of the limitations of the study.

Research Question

There was one overarching research question that this study sought to explore: "How do elementary teachers describe their use of social media for informal professional learning?"

Conceptual Framework

The aim of this study was to develop a better understanding of teachers'

experiences with and perceptions of using social media platforms. As Pink et al. (2016)

explained:

> One of the challenges of studying experience is that experience is often difficult
>
> to articulate, and so attempts to understand and interpret its meaning and
>
> significance rely on the ethnographer's immersion in sites of other people's
>
> experiences. It also depends on identifying concepts associated with sensory or
>
> emotional experiences that facilitate the discussion of experience with research
>
> participants and academics. (p. 21)

These challenges are particularly relevant in the context of online interactions in which

human-to-human experiences are being moderated by machines through social media

(Kozinets, 2015).

To make sense of others' experiences, this research used a netnographic design as

proposed by Kozinets (2015; 2020). Kozinets (2020) described netnography as "a form of

qualitative research that seeks to understand the cultural experiences that encompass and

are reflected within the traces, practices, networks, and system of social media" (p. 14).

Netnography draws on several of the ethnographic philosophies and practices used to

understand culture and community. It diverges from ethnography, however, in that it sees

culture and community are far more fluid in online contexts.

Online relationships are largely consocial, meaning they are often limited to a

particular place such as Facebook or an event such as a Twitter chat. While the

interactions are meaningful to the participants, they are not necessarily bounded by a

structure that meets the strict ethnographic definitions of culture and community (Kozinets, 2015). Instead, the culture is created by the shared tendencies and characteristics of people cycling in and out of the online environments.

Although netnography does not embrace the same ethnographic concept of culture, it does share design principles informed by Denzin and Lincoln's (2005) traditional qualitative approach of constructivism. Under this approach, a singular reality did not exist waiting to be discovered; instead, reality was constructed through an individual's interactions with people, objects, environments, and ideas. As a result, multiple versions of reality were possible based on the position and perspective of the researcher relative to the participants. As Lincoln and Guba (2013) explained, "the relationship between the knower and the knowable (to-be-known) is highly person- and context-specific….Knowledge is not 'discovered' but rather *created*; it exists only in the time/space framework in which it is generated" (p. 40, emphasis in original).

In this study, three facets of constructivism informed the researcher's decision-making: knowledge construction through the interactions of teachers online, identity construction in online environments, and knowledge construction through researcher interactions with the participants. This section examines each of those facets in more depth.

Knowledge Construction Through the Interactions of Teachers Online

A major premise of several studies that informed this research was the idea that knowledge is socially constructed through and by teachers as they interact with others and their ideas online. Krutka et al. (2016), for example, categorized activities within a PLN as engaging, discovering, experimenting, reflecting, and sharing. Different types of

teaching knowledge could be constructed through each type of interaction, and teachers may experience different understandings from the same content due to their varying experiences and social positions.

Similarly, Liu (2016) discovered that even if individuals did not actively participate in creating content, they were able to increase their perception of learning by browsing more content within these online communities. Such forms of situational knowledge are consistent with constructivism because different teachers can build their own unique understandings out of the same content.

The construction of knowledge through interactions with other teachers was a primary way of making sense of teachers' experiences. When engaging in digital ethnographic research, Pink et al. (2016) expressed how:

> Researchers may seek to experience the same environments and activities as others as a route through which to empathetically connect with their sensory, embodied and affective experiences, or use their own experiences in seeking to comprehend what it might be like to feel those of others. (p. 39)

The researcher used her own experiences as an elementary teacher and social media user to attempt to connect with other participants and comprehend what it may have felt like to engage with others through social media related to teaching practices. Throughout this process, the researcher recognized the importance of maintaining reflexivity about the potential biases and limitations of her own experiences as she constructed her understandings.

Identity Construction in Online Environments

A second assumption of some of the studies informing this research was that teachers are cautious in how they represent their identities online (Kimmons & Veltsianos, 2014; Robson, 2018). They are careful in what they post or comment, trying to embody the ideal professional and expert in their practice. Kimmons and Veletsianos (2014) described this as the development of "acceptable identity fragments" because participants behaved in a manner that they believed would be "acceptable" to their audience, and while they were expressing their "identity," it was only a small "fragment" of their complete personality (p. 295).

Robson (2018) also examined how teachers managed their identity performance to present idealized versions of themselves to online audiences. As a result, the images that teachers conveyed online may not have been entirely complete or authentic. Instead, teachers participated in constructing those representations of themselves and accepted that others were doing the same.

Given that teachers were presenting fragments of their identities throughout this research, the researcher never intended to provide a complete understanding of teachers' social media uses for informal learning. Instead, the researcher understood that the information gathered would be necessarily incomplete and only represented a portion of what other teachers hoped to communicate about themselves. In that regard, the research was collaborative between researcher and participants as they co-constructed descriptions of identities based on fragments of information (Pink et al., 2016).

Although identities were constructed in online spaces through social media, they were also constructed through questionnaire responses and in interviews through the

details and experiences that participants were willing to share. Orgad (2009) cautions that one should not be seen as more "truthful" or "authentic" than the other (p. 41). In the context of internet inquiry, she went on to explain:

> Rather than validating the veracity of the data obtained online, the rationale for deciding to gather offline data is based in a perceived need to add context, to enhance information, and to yield insights into aspects that would otherwise remain invisible, but that may be consequential to the research. (Orgad, 2009, p. 41)

In this study, the researcher felt that offline data could yield additional insights. The researcher approached this topic with an understanding that different types of data could be obtained from both online and offline encounters. The researcher did not intend to privilege one type of data over another; instead, she hoped to uncover different types of information from the identities presented through multiple forms.

Knowledge Construction through Researcher Interactions

A final assumption of many of the studies that informed this research was that knowledge can be developed by asking teachers questions about the processes and outcomes associated with using social media (Britt & Paulus, 2016; Carpenter & Krutka, 2014; Trust, 2015). Several studies relied on interviews in which the researcher used structured or semi-structured questions to facilitate discussions and build knowledge about teachers' activities. This act presumed that the interviewees would be forthcoming with their thoughts and opinions and that the information they shared would be representative of their experiences and beliefs. It also acknowledged that information would be filtered through the researchers' subjectivity and biases.

Research Design

Netnography was used as the overarching research design. This approach was most appropriate because it acknowledged that the ways we represent ourselves online and interact with others may be very different from our face-to-face encounters (Kozinets, 2020). Netnographic research assumes that technoculture has created diverse communities of networked individuals rather than a tightly knit, clearly bounded culture (Kozinets, 2015). These networked individuals share common characteristics in that "many meet their social, emotional, and economic needs by tapping into sparsely knit networks of diverse associates rather than relying on tight connections to a relatively small number of core associates" (Rainie & Wellman, 2012, p. 12).

Online communication, for example, may happen asynchronously with varying participants and conventions that are unique to a platform, such as Twitter's use of hashtags and retweets. Elementary teachers function as networked individuals by creating personalized online communities that reflect their individual interests and activities. As a result, traditional ethnographic approaches needed to be modified to assume the types of data and interactions that were made possible by a digital world (Pink et al., 2016).

Research Methods

Much like ethnography, netnography could integrate a variety of research approaches to develop a better understanding of the issue being researched. In part, this reflected the 'messiness' of researching the social experiences delivered through diverse and constantly evolving online platforms (Lugosi & Quinton, 2017). Kozinets (2020) outlines six different movements that comprise netnographic research: initiation, investigation, immersion, interaction, integration, and incarnation (Figure 3.1). Each

movement required varying levels of engagement with the elementary teachers to capture

a deeper understanding of their uses of online spaces.
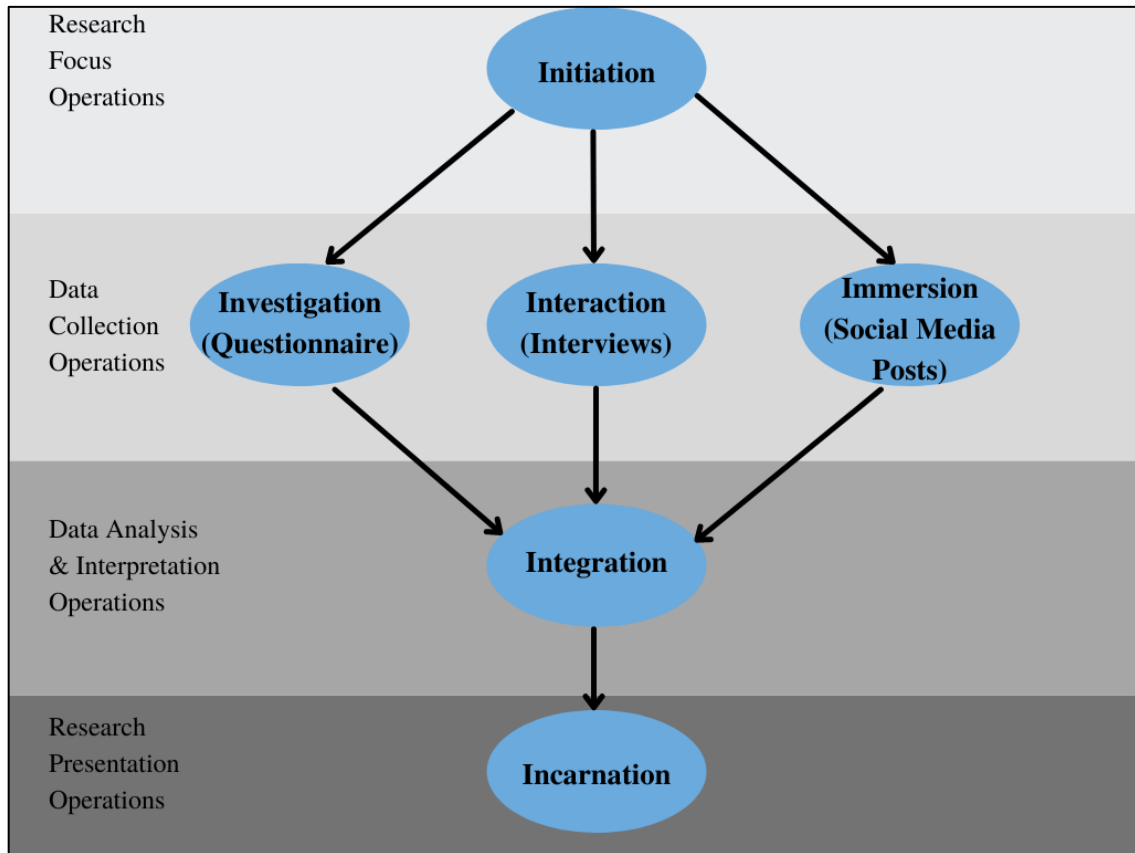
Figure 3.1. The Six Procedural Movements of Netnography. Adapted from Kozinets

(2020).

Movement 1: Initiation

During the first movement of research, initiation, the researcher informally

observed sites of teacher participation on social media as she navigated these spaces as a

practicing fourth grade teacher. While she was not yet engaged in documenting field

notes or journaling her own experiences, she was beginning to tune into differences in

practices across the varying platforms she engaged with. She was also reviewing the

existing literature about teacher social media use to inform the development of an online

questionnaire (Appendix A) and the conceptualization of the complete study.

Movement 2: Investigation through Questionnaire

Following IRB approval of the proposed study, the online questionnaire was shared through the researcher's social media network to elementary teachers on Facebook, Twitter, Instagram, and Pinterest. The researcher designed graphics fitting each platform's posting norms, such as a square image for Instagram (Figure 3.2), and posted a public link to the survey in November 2018. Intermittent reminders to complete the questionnaire were posted on each platform when response numbers began to dwindle, and the questionnaire was eventually closed at the end of December 2018 when reminders did not yield new activity.
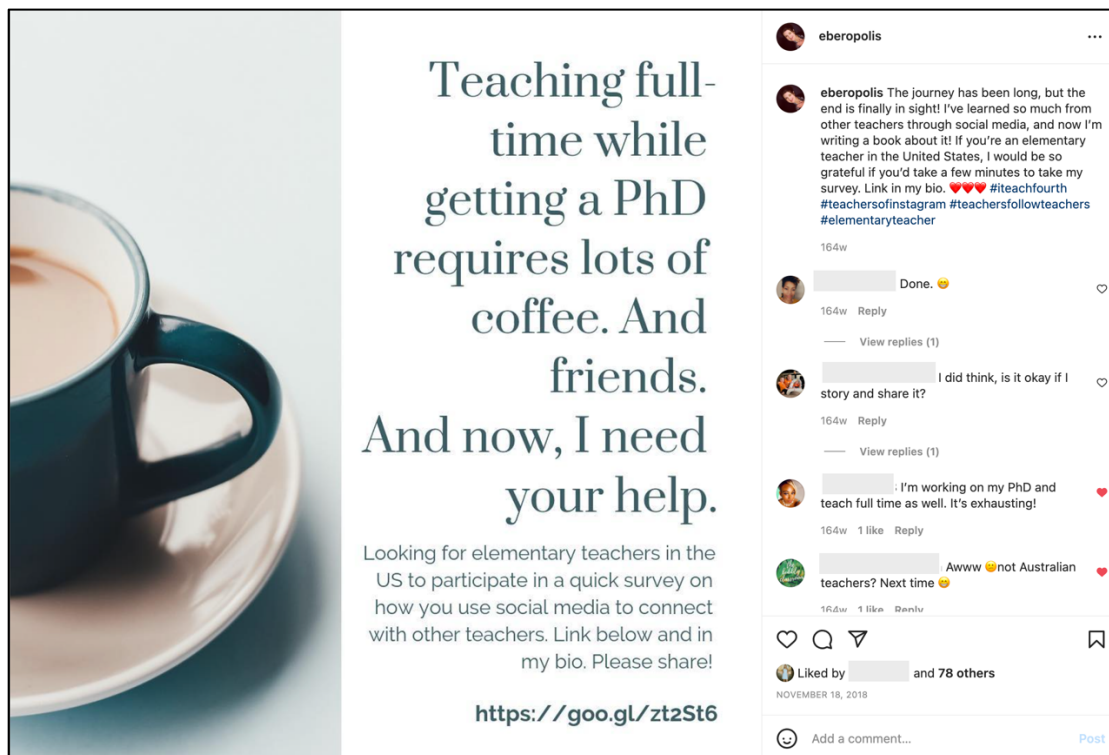
Figure 3.2. Instagram Recruitment Post

The questionnaire contained five parts: informed consent, basic demographic information, social media use, perceptions of professional learning, and an invitation to

participate in the content analysis and/or interview portions of the research. The social media use section probed which social media platforms the participant uses for both personal and professional purposes, and the perceptions of professional learning section asked open-ended questions about how the participant uses various platforms for professional learning. Except for the initial consent to participate question at the beginning of the questionnaire, all questions were optional.

The questionnaire received 293 responses. This number was reduced to 287 when the researcher scoured the data for duplicate submissions evidenced by identical responses to the open-ended short-answer questions and/or replicated email address entries for opting into later stages of the study.

Movement 3: Immersion

During the third movement of research, immersion, the researcher developed her initial impressions of the questionnaire data by reading and re-reading responses to the open-ended questions. She also began immersing herself in the social media activities of the 109 teachers who opted into the second phase of research through the final section of the questionnaire. Through this section, teachers were given the option of being contacted for a possible interview relating to the topics discussed in the questionnaire. They were also given the opportunity to provide their social media usernames for any of the platforms they used with the understanding that their social media posts may be collected for additional analysis.

Of the 109 teachers who opted into the interview and social media collection phase of the study, only 34 met the study's criteria of having publicly accessible social media accounts that were relevant to teaching. This was important to the researcher due

to the possibilities of publication and the identity management concerns facing teachers (Robson, 2018). Each teacher's most recent 20 posts were gathered from each active social media platform using screenshots. This allowed both the text and visual data such as pictures to be preserved and explored. Having a set number of posts gathered per platform allowed the researcher to examine a manageable representation of each teacher's social media posts without having to worry about some teachers being more or less active with their social media use during the study.

Movement 4: Interaction through Interviews

Following exploration of the 34 teachers' social media activities, 13 teachers were invited to participate in an online interview. This approach was selected given the unlikelihood of geographic proximity between the researcher and the participants and because of the flexibility of online tools for conducting interviews (Salmons, 2015). The 13 teachers were selected because they were active on one or more social media platforms, and they shared content that was primarily teaching-related.

Synchronous Interviews. Two teachers agreed to a synchronous online interview through Skype or Google Meet (participant's preference), and these interviews happened in the summer of 2019. These interviews were semi-structured in that the researcher used an interview guide (Appendix B) but asked follow-up questions or altered the order of questions to fit the natural flow of the conversation (Roulston, 2010). Each interview lasted approximately one hour.

The primary focus of each interview was to learn about the nature and purpose of the teacher's participation in social media for professional learning. This took place in a variety of ways. First, the researcher shared examples of the teacher's social media posts

and asked the teacher to comment on why she shared that content and why it was shared on the chosen platform (Figure 3.3).
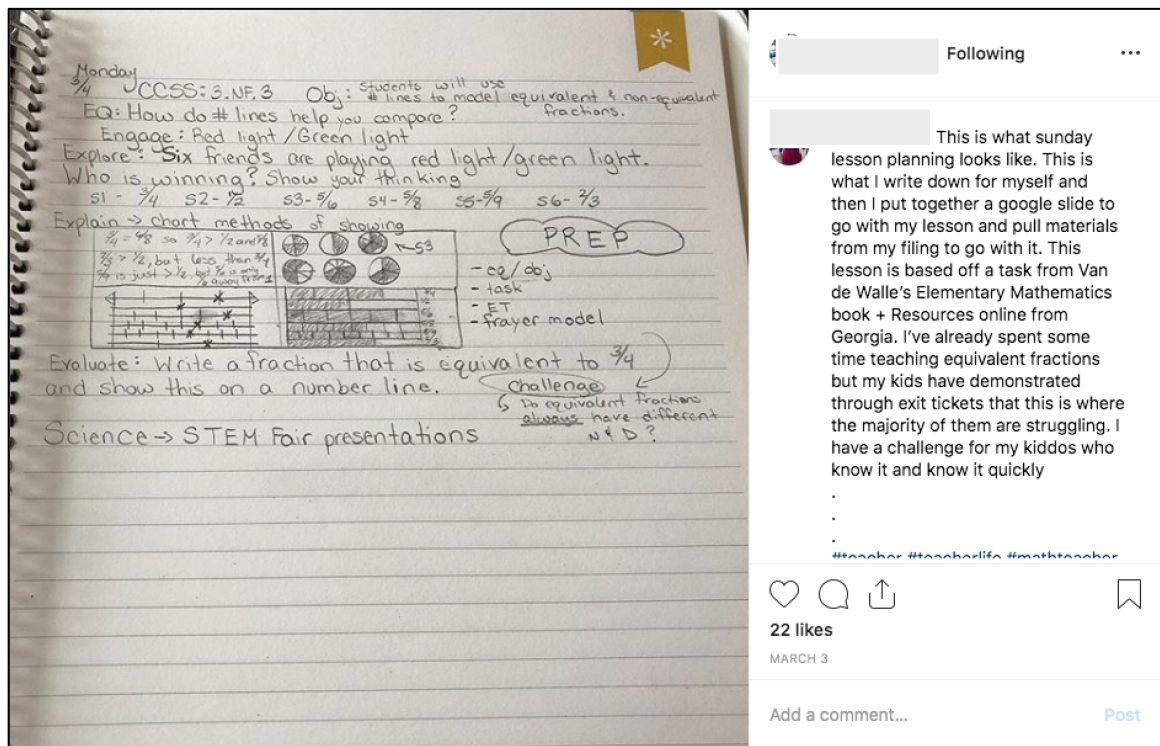
Figure 3.3. Example of a Social Media Post Discussed in Interview

This approach mirrored a photovoice methodology (Wang & Burris, 1997). Photovoice research is a participatory approach that enables participants to take their own pictures and explain the thinking behind that moment (Woodgate et al., 2017). While traditional photovoice studies provided participants cameras for the sole purpose of research, the explosion of smartphone access has expanded this method to include social media posts on Instagram (Yi-Frazier et al., 2015).

By incorporating visual data into the interview, participants were provided prompts that may trigger memories or ideas deeper than what could be elicited through interview questions alone (Latz et al., 2016). In addition, photovoice treats participants as co-researchers who select the content to photograph, provide context for the picture

through conversation, and help identify potential themes or issues from the pictures (Wang & Burris, 1997). This process provoked a deeper discussion of the ways that elementary teachers are using social media.

Second, questions were asked about each platform that the participant uses and the types of content he or she expects to find or share through that platform. Third, questions were asked about how those practices impacted the teacher's learning and classroom activities. Such interview practices are consistent with netnography's attempts to:

> question the relationship between online social interactions and other online activities and relate them to one another and to the wealth of other social interaction, affiliations, and activities in the person's life…[so that] a fuller and more complete portrait of human social experiences can be drawn. (Kozinets, 2015, p. 61)

The interviews provided an opportunity to connect each teacher's online and offline worlds, facilitating a deeper understanding of the experiences and culture.

Asynchronous Interviews. When additional participants were not forthcoming after efforts to schedule interviews during the summer and then after the crunch of back-to-school season, the researcher offered the option of asynchronous online interviews using Flipgrid (www.flipgrid.com)—a video recording platform that is increasingly used in K-12 educational contexts. This approach was selected for a variety of reasons. First, the unlikelihood of geographic proximity between the researcher and the participants meant that time zones and differing local school calendars created additional constraints on live interview times. Second, the use of Flipgrid allowed teachers to complete the

interview in smaller chunks rather than one sitting and at a time and place that was most convenient to the participant. This seemed especially valuable given the workloads facing elementary teachers and the demonstrated willingness to engage with technology evidenced by the teachers' social media presence. As a result, five additional teachers completed the interview asynchronously, but one experienced some technical issues that rendered her data unusable. The combined result of the synchronous and asynchronous interviews was six total interviews.

While much discussion centers on email as a medium for asynchronous interview methods (e.g., Hawkins, 2018; Ratislavova & Ratislav, 2014), emerging research—including this study—highlights the ways that asynchronous video interviews are a valuable research method. Lukacic et al. (2022), for example, found that asynchronous video interviews may increase the reliability and validity of the research because the interviewer isn't interrupting or probing throughout the process. In addition, they found that the format allows participants more time and flexibility to prepare their responses and an opportunity to watch and re-record their responses if they were unsatisfied with the results (Lukacic et al., 2022).

In setting up Flipgrid for asynchronous interview purposes, the researcher used her interview guide from the synchronous interviews to create ten moderated topics (Figure 3.4). Flipgrid's moderation feature allowed users to submit responses to the researcher and view or edit their own response, but they were unable to view other participants' submissions.

Figure 3.4. Sample Organization of Interview Prompts on Flipgrid

Each topic used text from the interview guide, including probing follow-up

questions. For the most part, these questions matched the questions asked in the

synchronous interviews. Questions about specific social media posts, however, had to be

altered. Instead of the researcher presenting specific social media posts for commentary,

the researcher solicited examples from the participants and asked them to describe a post

they thought relevant (Figure 3.5). Based on those details, the researcher could then scan

the participant's social media feeds to try to match the visual if needed for further

understanding.

Figure 3.5. Sample Question and Probes for Flipgrid Interview

Participants were able to record videos up to 5 minutes in length to respond to

each prompt. This ensured that all participants were able to complete the interview in less

than one hour, and it provided ample time for participants to answer most questions. There was only one instance where a participant ran out of time answering a question, but she appended her answer to the question when answering another prompt to complete her contribution.

In follow-up conversations, participants reported appreciating the flexibility offered by Flipgrid as an interview platform. One participant, for example, later shared that she was able to do the interview while sitting in the passenger seat as her family drove across several states for their Thanksgiving holiday. She would answer a question or two at a time, enabling her to participate despite her children's needs for meal and bathroom breaks. Another teacher later reported being unfamiliar with Flipgrid but recognizing through the interview process its potential for classroom applications. As a result, this method for conducting asynchronous interviews proved valuable to both the researcher and the participating teachers.

Movement 5: Integration through Data Analysis

The fifth movement of netnography, integration, required the researcher to analyze the questionnaire and interview data more deeply, using an "ongoing process of decoding, translating, cross-translating, and code-switching between parts and wholes, between data fragments and cultural understandings" (Kozinets, 2020, p. 142). At this stage, qualitative data analysis software (QDAS) was used to analyze the questionnaire responses, interview transcripts, research notes, and relevant social media artifacts using an inductive process (Maxwell, 2013). The researcher used ATLAS.ti for Mac version 9.1.2 for most of this work, with supplementation through Google Sheets and Microsoft

Excel when needed for quantitative data. More detailed discussion of this process is provided later in this chapter.

Movement 6: Incarnation through Writing

The sixth and final movement of netnography is incarnation. Kozinets (2020) defines this movement as communication, which may be evidenced in the form of a doctoral dissertation or other publications that are "rigorous in that they deliberately and precisely use some of the approaches described as netnographic praxis" (p. 143). This manuscript represents that incarnation, and the remainder of this chapter expounds on the ways this study's research methods incorporated netnographic praxis.

Sample

During the online questionnaire phase, virtual snowball sampling was used to recruit participants (Baltar & Brunet, 2012). Virtual snowball sampling assumed that the author was part of a broader social network that shared links among users and redistributed those links to disseminate information beyond the individual researcher's immediate social network. Given that the researcher entered this study as an established teacher blogger and active social media user with a following of several hundred teachers across multiple platforms, this seemed an appropriate strategy.

Trust et al. (2016) used this snowballing approach to recruit over 1400 participants for their research. The Trust et al. study was conducted by multiple researchers with their own social networks and targeted toward K-16 teachers, whereas a single researcher targeting elementary teachers conducted this study. As a result, the goal for the sample was conservatively set at 100, and the researcher closed the questionnaire when responses trickled to a halt at 287 unique responses.

The researcher selected the participants for the interview and social media analysis phase with a goal of having a diverse mix of teachers in terms of the platforms used, activity levels on the platforms, and types of content shared. Toward this end, the researcher used social media to connect with the teachers who were willing to participate in the social media data collection and interview stages. This allowed her to observe their habits before deciding which individuals to include in the final sample. That observation period in Spring 2019 was used to capture the previous 20 social media posts on each participant's publicly accessible social media platforms. The researcher also factored in geographic location, grade level taught, and years of experience in selecting participants for these stages to try to get a variety of experiences represented. Those details are provided in Table 3.1.

Table 3.1

Demographic Characteristics of Interview Participants

Pseudonym	Location	Role (grade)	Years of Teaching Experience	Social Media Platforms
Melissa	Maryland (urban)	Math specialist (K-5)	5	Facebook, Instagram, Twitter
Courtney	Georgia (suburban)	Media specialist (3-5)	23	Facebook, Google +, Pinterest, Twitter
Lydia	Georgia (suburban)	Teacher (1)	18	Facebook, Instagram, Twitter
Karla	Georgia (rural)	Teacher (5)	26	Facebook, Instagram, Twitter
Hailey	California (suburban)	Math & Science (4)	6	Facebook, Instagram, Pinterest
Emma	Minnesota (urban)	Reading (5) & Social Studies (6)	2	Facebook, Instagram, Twitter, Snapchat

Note: Participants are listed in order of interview completion.

The six interview participants represented four different states and a variety of roles and grade levels. All used Facebook and at least two other social media platforms to connect with other teachers. They also represented a range of teaching experiences from 2 to 26 years of teaching. All participants in the interview, however, identified themselves as white females. While this may reflect the lack of diversity among public school educators in the U.S. (Schaeffer, 2021), it should be recognized as a limitation to the interview sample.

Data Collection Methods

Several computer-aided data collection methods were used in this research including online questionnaires, collection of social media posts, and both synchronous and asynchronous online interviews.

Online Questionnaires

The first part of the data collection process included an online questionnaire (Appendix A). The online questionnaire was created using Google Forms and distributed over social media channels such as Facebook, Twitter, Instagram, and Pinterest. Google Forms was selected as the questionnaire tool due to the researcher's familiarity with designing complex questionnaires with that tool. Kozinets (2015) explained that questionnaires can be an important starting point for netnographic research because they can illuminate trends and practices in people's online activities. Several other studies related to teachers' social media use incorporated similar instruments in their study design (Carpenter & Krutka, 2014, 2015; Duncan-Howell, 2010; Owen et al., 2016; Trust et al., 2016). This approach provided an inexpensive way to reach many teachers and gather information about their social media practices.

Social Media Posts

Social media content was collected using screenshots because there was no single tool yet available to the researcher that could automatically harvest all the data across platforms. The researcher took screenshots of each teacher's publicly available content, limited to the last 20 posts on each platform (Figure 3.6). These screenshots were then uploaded into ATLAS.ti and organized based on user and platform for potential analysis. The researcher did not include screenshots of content that was more ephemeral such as Snapchat and Instagram stories, or video sources such as YouTube, which expressly prohibits downloading of published content.
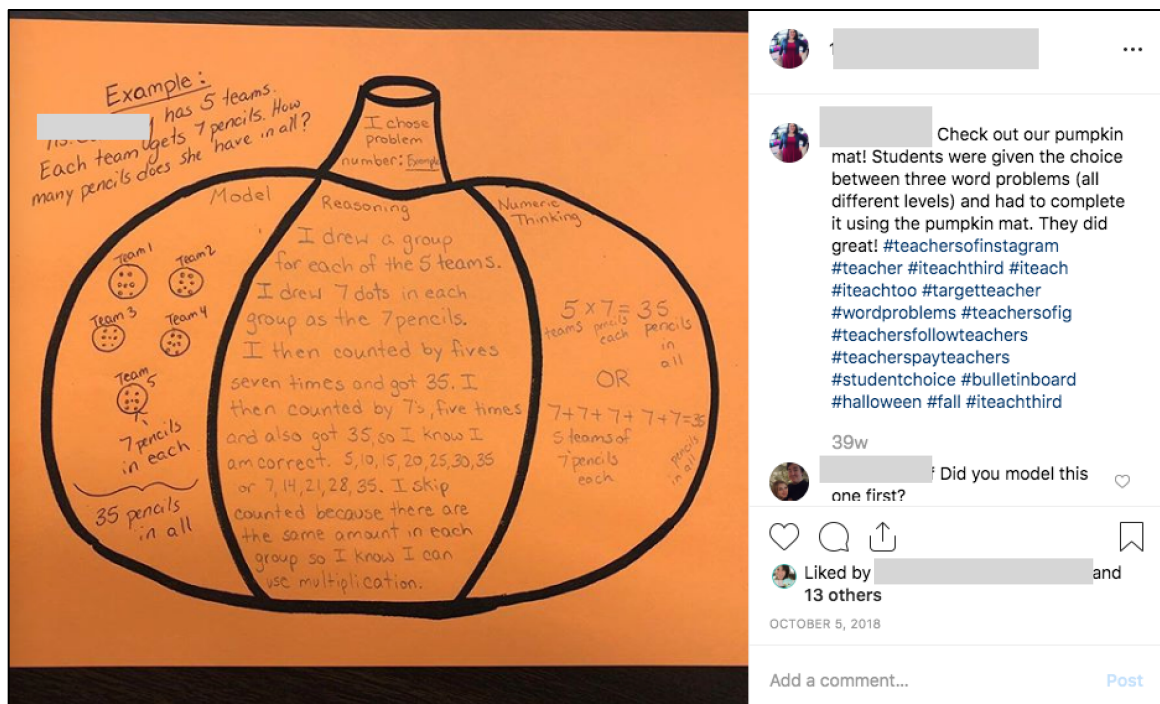
Figure 3.6: Sample of social media screenshot.

Online Interviews

Synchronous interviews were conducted with two participants using the participant's preference between Skype or Google Meet (formerly Google Hangouts) as

the online video conferencing service. This allowed for the spontaneity of face-to-face conversations with participants from diverse geographic regions. These platforms also allowed link sharing, which was helpful in directing discussions toward specific social media posts. Although an interview guide was used to structure the conversation, the researcher was able to ask follow-up questions as necessary to clarify meaning and probe deeper into ideas she found interesting. Conversations were recorded using Audacity, a tool selected because it only preserved the audio of the conversation since recording both audio and video could pose potential threats to participants' anonymity.

Asynchronous interviews were conducted with four participants using Flipgrid. The response to each question was recorded as a video up to 5 minutes in length, resulting in nearly 40 short-form videos. While Flipgrid automatically transcribes the videos, the researcher found the transcripts to be inaccurate and incomplete. As a result, the researcher watched each video several times to revise and improve the quality of the transcript. The videos were then downloaded and saved to a password protected and encrypted hard drive as backup before being removed from the Flipgrid server.

Interviews have been widely used in prior studies related to teachers' social media use (Britt & Paulus, 2016; Cox & McLeod, 2013, 2014; Hur & Brush, 2009). Kozinets (2015) explained that interviews are a particularly important data source for netnography because they allow the researcher to connect online activities to other aspects of the person's life—in this case, the use of social media for professional learning and its connections to classroom and school-based practices.

Data Analysis

Exploring teacher perceptions of social media use for informal professional learning required the researcher to immerse herself in the social media landscape with its constructs of communication and practices while also stepping back to make sense of those practices. Such immersion is necessary to create meaningful interpretations by understanding the nuances of activities and patterns of behavior and developing relevant themes (Kozinets, 2020).

Kozinets (2015) described netnography's data analysis process as being analogous to a collage in which the researcher is collecting and curating data and assembling them into something more meaningful. He explained that, like a collage, "the individual observations are built up in stages, ordered deliberately and deployed to make general statements about a phenomenon" (Kozinets, 2015, p. 199). This inductive approach moved from the data to the generation of patterns and themes that were constantly revised and checked against the data (Kozinets, 2020; Maxwell, 2013). The three types of data collected in the forms of questionnaires, social media posts, and interviews allowed further triangulation (Kozinets, 2020).

Questionnaire Analysis

Google Forms data were easily reorganized to generate graphs and descriptive statistics to analyze the closed questions on the questionnaire. This gave the researcher a sense of the population of respondents while allowing her to see which social media platforms were being used and to what extent. The researcher then downloaded the responses into a Google Sheet to read responses to the open-ended questions and highlight responses that stood out. This informed the interview structure and questions.

Analyzing Social Media and Preparing for Interviews

As the researcher began capturing social media data from the various platforms, she documented initial impressions about the social media use and content in field notes. The field notes described the content of the social media posts that stood out to the researcher in some way and captured what seemed interesting or noteworthy from the experience (Emerson et al., 2011). An example of the social media field notes is presented in Table 3.2. This process allowed the researcher to pull out some of the big ideas from the data. This also helped the researcher identify which posts would potentially be most meaningful for further discussion in the interview when the researcher shared the content back with its original poster.

Table 3.2

Social Media Field Notes Sample

Participant & Post Number	Field Notes
220 (Instagram 03)	• Image of an annotated text with the specific sentences underlined. Arrows point to the paragraph with the word "TRUTH!" written in all caps. Three Bitmojis have been layered on top of the image of the text: Knowledge is power, a reading Bitmoji, and a Bitmoji holding a sign with a heart on it • Caption reinforces the annotations by observing there is "So much in this one paragraph." • Addressing her perceived audience of fellow teachers: "You as the T[eacher] have to choose to see the potential in all your S[tudent]'s" • Positioning self as a knowledgeable expert by professing "truth"?

Note: Each participant was assigned a number to facilitate data organization and triangulation between questionnaire and social media data.

Since the interviews did not start until after the researcher had some time to explore the survey and social media content data, the researcher was able to refine the

interview guide to include questions related to preliminary ideas. This allowed the researcher to probe deeper into topics such as the purposes of the different platforms for professional learning and the perceived benefits and disadvantages of each.

Open-Ended Questionnaire Responses and Interview Data

Once the researcher concluded each interview, she documented initial impressions and thoughts through field notes. Then, when the interview's audio was transcribed, the researcher used an inductive approach toward thematic analysis to analyze both the open-ended questionnaire responses and the interview transcripts (Maxwell, 2013; Paulus & Wise, 2019). In this process, the researcher read and re-read the data several times to become increasingly familiar with it before generating initial codes (Paulus & Wise, 2019). Kozinets (2020) describes that "codes are flashpoints. The act of coding spurs the researcher to deeper reflection on the meaning of the data, the study, and the guiding theoretical concepts" (p. 338). Such efforts to capture the "essence" of meaning helped organize the data into meaningful chunks (Kozinets, 2020).

During these early coding efforts, the researcher coded data segments liberally, staying aware of Braun and Clarke's (2006) advice that a researcher's ideas about "interesting" data may evolve throughout the analytic process. Figure 3.7 provides an example of this coding process.
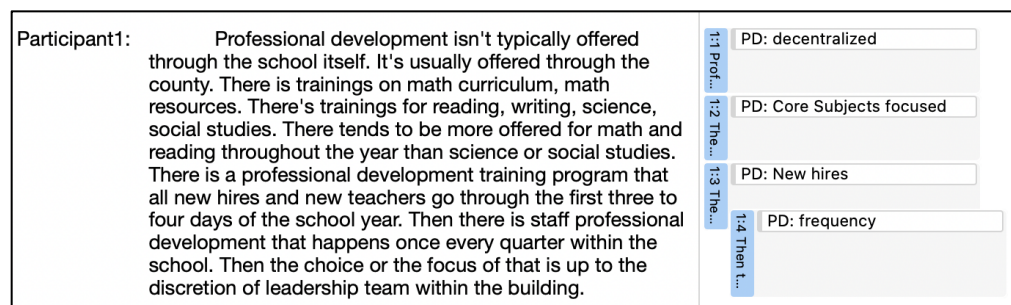
Figure 3.7. Coding Interview Data in ATLAS.ti

After all questionnaire responses and interview data were coded in this way, the researcher began to search for themes (Paulus & Wise, 2019). This process included sorting the data into larger categories (e.g., affordances of social media, limitations of social media) and revising and refining codes to better represent the ideas communicated across the data. See Table 3.3 for sample codes that were revised and collapsed in the process of generating preliminary themes. The definitions of codes in the researcher's codebook were subsequently revised to maintain consistency (Kozinets, 2020).

Table 3.3

Sample Code Revision from Questionnaire Data

Original Code and Meaning (# of quotes)	Revised Code and Meaning
Unrealistic – comments related to unrealistic depictions of classroom and teaching (3)	**Pressure** – comments describing a feeling of pressure to keep up with online posts or happenings in other teachers' classrooms
Overwhelm – comments relating to a feeling of overwhelm due to the quantity of posts or material to navigate (4)	

Once preliminary themes were developed, the data segments representing each theme were reviewed to confirm that they matched the theme and presented a coherent representation of the data (Paulus & Wise, 2019). These themes were then checked against all data to make sure that no data were overlooked or miscoded, and the final codebook was updated to reflect updated definitions and examples (Table 3.4). The complete codebook is available in Appendix C.

Once all data were analyzed, the researcher shared her initial findings with other elementary teachers to solicit their feedback. The researcher also discussed the data and findings with members of the dissertation committee to check against the unconscious

biases that she may carry as a member of the group she was attempting to study. These conversations, along with the audit trail available through the work in ATLAS.ti, helped protect the validity of the research process.

Table 3.4

Excerpt from Codebook for Factors Guiding Social Media Preferences

Code	Occurrence	Definition	Example
Accessibility	79	Comments referring to ease of use, familiarity, or platform features that facilitated accessing information quickly	"Facebook because it is easier to use and has more capabilities than other social media platforms."
Connected Groups	48	Comments about finding similarly situated teachers (e.g., grade levels, subjects) and/or making personal connections with those teachers	"Facebook because I like the groups I am part of. I can choose which groups match my grade level and interests."
Curation	11	Comments that mention searching for and/or organizing resources for future retrieval	"Pinterest – easy to search specifically what I am looking for and save for later dates."
Discussions	26	Comments that emphasize interaction, collaboration, and discussion of ideas	"Twitter because you can post questions and interact with people and just gain knowledge by participating in weekly chats."

Ethics

Research into online practices such as social media use presents many unique ethical challenges. As boyd (2009) cautioned:

> Just because people's expressions on the internet are *public* in the sense that they can be viewed by anyone does not mean that people are behaving as though their audience consists of billions of people across all space and all time….When we look to understand people's practices online, we must understand the context within which the individuals think they are operating. (p. 31)

Although the researcher obtained informed consent from each participant, she was also careful to consider these contexts throughout every stage of the research project.

Paulus et al. (2014) outlined three values to consider in ethical research: "minimize harm done to participants; respect and acknowledge the rights of participants to decide whether to participate or withdraw from a study; and protect the identity of the participants and/or community within which you engage in research" (p. 23). These three ethical considerations framed the practices of the research.

Minimizing Harm

The initial invitation to participate in the questionnaire was made on public posts and profile pages of the researcher's social media accounts and was therefore accessible to anyone. Although invitations to participate were also shared on semi-private sites such as Twitter and Facebook, the link ultimately directed traffic back to a lengthy information page about the researcher and the nature of the study, thereby minimizing privacy concerns. The posts also provided potential participants opportunities to ask questions or comment about the survey if they had anything they wanted to discuss before participating.

Respecting the Rights of Participants

The questionnaire began with an explanation of the study and a description of the rights that participants could expect through their participation. Participants wishing to proceed through the remainder of the questionnaire were required to consent. Participants were also reminded that questions were voluntary and that they could quit the survey at any time. They were again reminded of the voluntary nature of participation when asked to provide their social media usernames for further data collection and interviews.

During the interview segment, participants received written and oral instructions about their role in the study and their rights to refuse to answer questions or to opt out at

any time. This fulfilled the University of Georgia's informed consent requirements. Participants were reminded that the interview would be recorded and transcribed, so if they were uncomfortable with that procedure, they were given the option to withdraw. Participants in the asynchronous interviews were also able to skip questions and mask their identity using features described below.

Protecting the Identities of Participants

When extracting online talk as data, consideration must be given to protecting users from violations of privacy and treating such data in an ethical manner (Markham & Buchanan, 2012). As such, efforts were made to protect the participant throughout each step this research. First, the participant voluntarily opted into the study through an informed consent process. In accordance with IRB Internet Research Guidelines (2014), the informed consent materials reminded participants of the inherent vulnerability of online data. Second, this population was less likely to be harmed by analysis of their online talk because many are already guarded about the content they share publicly due to the application of different standards for morality and appropriateness of their online talk (Crompton et al., 2016). As a result of this self-regulation, this population likely understands the risks of sharing information online and is more likely to understand the potential consequences of unintended access to their posts (Beninger, 2017).

Because participants discussed their schools and their social media practices, social media posts and transcripts were anonymized by blocking out the social media usernames on screenshots and assigning a uniform pseudonym to each participant. In addition, participants in the asynchronous interviews could mask their identity using the

features of Flipgrid. Figure 3.8 provides an example of how one participant chose to do this.

Figure 3.8. Identity Masking Features within Flipgrid

While the visual examples of posts shared in this chapter could potentially be traced back to specific users using advanced search techniques that make it impossible to de-identify social media data completely, the reader is urged not to attempt to track down the participant for purposes related to this study (Paulus & Roberts, 2018).

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

Analysis was conducted using the software ATLAS.ti Mac version 9.1.2. The researcher selected this software because it facilitates data organization, internal memo writing to track research decisions, and it helped the researcher create and refine codes as she interacted with the data (Paulus et al., 2017). As a result, the researcher left a better audit trail to allow others to check through analytic processes. This resulted in better transparency (Paulus & Wise, 2019). In addition, the findings in chapters 4 and 5 attempt to provide high quality examples from the data to demonstrate the researcher's claims.

This allows the reader to examine the data to assess the quality of analysis and its credibility in supporting those conclusions (Paulus & Wise, 2019; Tracy, 2010).

Finally, because this study included a small number of interview participants, no claims are being made about the generalizability of this study. At most, the research may be transferable to other related contexts, but it should not be seen as generalizable to the population of elementary teachers (Paulus & Wise, 2019).

Validation and Evaluation

The researcher adhered to netnography's rigorous standards for validation and evaluation by member checking data, triangulating findings across multiple data sources, and engaging in reflexivity. These processes aligned with Tracy's (2010) criteria for excellence in qualitative research. They also represented the methodological rigor required for communicating netnographic research (Kozinets, 2020).

Member Checking

The researcher engaged in member checking by sharing transcripts and links to the individual's interview audio content with each participant. This happened for both synchronous and asynchronous interviews, giving participants a chance to validate the information and clarify or elaborate if they felt it was necessary. The researcher also shared a copy of her preliminary findings with interview participants to give them an opportunity to comment or share additional insights that the researcher may have missed.

Triangulation

The use of questionnaires, social media content, and interviews allowed the researcher to triangulate data. This process was also aided by using synchronous and asynchronous interviews throughout the summer and fall of 2019. According to Roulston

(2010), "data triangulation in the form of multiple interviews over a period of time can be used to check the researcher's understandings of particular participants' views and compare these to preliminary analyses and findings gleaned from earlier interviews" (p. 84). As the researcher began to develop theories based on the interviews, she tested those ideas in subsequent interviews. This, coupled with multiple sources of data, analysis within and between users, and constant comparisons of results created multiple opportunities for triangulation consistent with netnographic practice (Costello et al., 2017).

Reflexivity

Qualitative researchers working in online spaces have a responsibility to engage in reflexive practice throughout every stage of the research process (Orgad, 2009). The researcher attempted to engage in reflexivity by documenting as much of her research process as possible through memos, journal entries, and notes. Each decision and its justification were documented by the researcher to identify and interrogate potential biases and subjectivities that may have affected her research.

Pink et al. (2016) explained that "reflexive practice is also considered to be an ethical practice in that it enables researchers to acknowledge the collaborative ways in which knowledge is made in the ethnographic process" (p. 12). These reflexive memos and notes provided some assurance as to the quality of the research because it created a level of accountability that could be evaluated by others to trace the decision-making process throughout the research (Markham, 2009).

Limitations of the Study

One limitation of this study is that the questionnaire relied on self-reporting to develop the interview questions. Such self-reports may reflect biases or over- or under-estimate patterns of social media use. For example, more people accessed the questionnaire through the link provided on Facebook, which may skew the data to be more concentrated on Facebook. Participants may also have selective memory about the reasoning behind their choices of platforms or exaggerate the roles that their social media use has played in their informal learning.

Second, the study may reflect participation bias. The questionnaire and interviews were unlikely to reflect the behaviors of lurkers—people reading online social media content without contributing to discussions or participating fully—as these individuals, by nature of lurking, show less inclination to participate in online activities that require them to identify themselves.

Third, like most existing research in this area, it was difficult to measure actual impacts on learning and classroom practices. Macià and García's (2016) criticism that studies do not use longitudinal research techniques on both the online communities and classroom contexts applied to this study as well.

Fourth, this study was affected by the COVID-19 pandemic. Questionnaire data were collected in November and December of 2018, and interviews were conducted in summer and fall of 2019. The analysis process was interrupted when the pandemic forced her into emergency remote teaching for over a year. This caused significant delays in completion of this research project, and teacher preferences and experiences may have evolved somewhat in that time.

Finally, while efforts were made to limit researcher bias through other measures of validity and reliability, the researcher had her own experiences as an elementary teacher who used social media for informal learning. It is possible that these experiences shaped her identification and interpretation of themes in the open-ended questionnaire questions and interview responses.

Chapter Summary

The research study used a netnographic methodology that incorporated several ethnographic research methodologies adapted for research of digital relationships. A conceptual framework of constructivism guided the research. The researcher collected data in the forms of questionnaires, social media posts, and interviews and engaged in journaling and memoing to maintain reflexivity throughout the process. Data was then analyzed thematically using netnographic processes augmented by qualitative data analysis software. The researcher attempted to conduct ethical research by minimizing harm, respecting participants' rights, and protecting their identities. While there were limitations to the research, efforts were made and documented to ensure the trustworthiness, quality, and validity of the research.

CHAPTER 4

QUESTIONNAIRE FINDINGS

The purpose of this netnography was to explore how elementary teachers participate in informal professional learning across multiple social media platforms. The study addressed the question: How do elementary teachers use social media for informal learning? The researcher believed that examining holistic social media practices could provide a deeper understanding of teachers' tendencies and create opportunities for more effective informal learning.

This chapter provides key findings from 287 online questionnaires designed to address the research question through open-ended and closed-ended questions. The researcher used descriptive statistics and thematic analysis of the short answer questions to identify and organize findings relevant to the research question. The questionnaire was used and analyzed first to enable a larger number of elementary teachers to share their experiences using social media. It also provided an opportunity for teachers to volunteer to participate in interviews and offer their social media posts for further analysis.

This chapter begins with a description of the qualitative data analysis software used to analyze responses. It then describes the questionnaire participants based on the demographic information they provided when responding to the questionnaire. The remainder of the chapter examines the data. It reports what social media platforms elementary teachers are using for personal or professional purposes and what their preferred platforms are for carrying out different informal learning tasks. Finally, the

chapter explores the factors that influence teachers' choices to use or not use particular platforms based on responses to the open-ended question portions of the questionnaire.

Use of Qualitative Data Analysis Software

Throughout all stages of the research, the researcher used the qualitative data analysis software (QDAS) ATLAS.ti for Mac version 9.1.0-9.1.2. Questionnaires, social media screenshots, and interview transcripts were imported into the software as PDF documents with optical character recognition (OCR). This allowed individual lines of text to be coded and compared across documents. It also allowed the researcher to develop, track, and refine codes to match her thinking across the data sources.

The questionnaire included a combination of open- and closed-ended questions regarding use habits and preferences across social media platforms. The closed questions were analyzed using frequency counts and descriptive statistics, while the open-ended questions were coded inductively for themes.

Questionnaire Participants

A total of 287 elementary teachers representing at least 41 states completed the online questionnaire in November 2018. Georgia, the home of the researcher and locus of her own social network, was most heavily represented among participants (n=35). Three participants did not respond to the question about demographics. A complete breakdown of geographic representation is included in Figure 4.1.

The questionnaire respondents identified disproportionately female (99.7%), although most of this skew can be accounted for by the gender imbalance among elementary teachers. According to McFarland et al. (2019), nearly 90% of elementary teachers identify as female. The vast majority of questionnaire respondents (90.7%)

worked in public schools, while the remainder worked in either private schools (7.6%) or charter schools that were not identified as public or private (1.7%).

Figure 4.1. Questionnaire Participants by State

Multi-Platform Users

Participants were asked about their social media use habits to identify the platforms they use personally (e.g., to interact with friends or family members) and to identify the platforms they use professionally (e.g., to learn from or interact with other educators). These practices are presented in Table 4.1.

Elementary teachers were largely multi-platform users for both personal and professional use. The median elementary teacher uses 4 different platforms for personal purposes and 3 platforms professionally. The average number of platforms used

personally was 3.77, and the average for professional use was 3.06. This shows that teachers are slightly less likely to use social media platforms professionally.

Table 4.1

Number of Platforms Used Personally and Professionally

Number of Platforms Used	Personal Purposes Respondents	Professional Purposes Respondents
0	0	1
1	22	38
2	43	60
3	61	81
4	64	61
5	56	26
6	32	12
7	9	2
No Response	0	6
Total	287	287

Use of a Single Platform Personally May Not Predict Professional Platform Choice

While single platform users were a small part of both categories—22 (7.7%) of the respondents for personal purposes and 38 (13.2%) of the respondents for professional purposes—only six respondents reported using one platform for personal purposes and the same platform (and no other) for professional purposes. The remaining 16 single-platform users reported using either a different platform for professional purposes (making them a multi-platform user), or they reported using multiple platforms professionally. The 22 single-platform personal users averaged 2.09 platforms for professional use with some using as many as 4 platforms professionally.

Use of a Single Platform Professionally Often Overlaps with Personal Uses

The median single-platform professional user used 3 social media platforms personally, with an average of 3.18 platforms. Most of the respondents (28 out of 38) selected a platform they were also using for personal purposes. But 10 of the 38 single-

platform professional users reported using a different platform professionally than what they had identified as their personal use platforms. Examples here included school-based communication tools such as Class Dojo, Remind, and SeeSaw (combined n=4), Google+ (n=4), LinkedIn (n=1), and Facebook (n=1).

Platform Choices for Social Media Use

Participants were asked to identify which platforms they use for personal purposes and which platforms they use professionally. These choices are presented in Table 4.2.

Table 4.2

Personal and Professional Use of Social Media Platforms

Platform	Personal Use n = 287		Professional Use n = 281	
	Number	Percentage	Number	Percentage
Facebook	280	97.6%	216	76.9%
Google+	28	9.8%	55	19.6%
Instagram	221	77.0%	153	54.4%
LinkedIn	29	10.1%	25	8.9%
Pinterest	187	65.2%	187	66.5%
Snapchat	142	49.5%	3	1.1%
Twitter	97	33.8%	92	32.7%
YouTube	93	32.4%	113	40.2%
Other	5	1.7%	15	5.3%

In most situations, teachers were more likely to choose a given platform for personal purposes than professional ones. Across most platforms, the number of professional users decreased compared to the number using the platform for personal purposes—consistent with the previous finding that users tend to use more platforms for personal use. The notable exceptions and other platform-specific findings are discussed below.

Facebook, Instagram, and Pinterest are Popular in Both Use Contexts

Facebook was the most popular platform for elementary teacher use in both personal and professional contexts with all but 7 respondents identifying as Facebook users in at least one context. Instagram came in second for personal use, and Pinterest came in third. They swapped positions for professional use contexts, however, with Pinterest becoming more popular than Instagram. Those three platforms were the only ones used by over half of respondents.

While the number of Pinterest users (n=187) remained identical between personal use and professional use, these weren't necessarily the same 187 people using the platform. Only 143 of the Pinterest users reported using the platform for both personal and professional purposes. The remaining 44 in each use category (88 total people) used it for either personal purposes or professional uses, but not both.

Few Categories Experienced More Professional Than Personal Use

Of the categories presented in the questionnaire, only three categories experienced more professional use than personal use: Google+, YouTube, and Other. The now retired Google+ had 27 more professional users (n=55) than personal ones (n=28). Meanwhile, YouTube had 20 more people identify as using it professionally (n=113) than personally (n=93).

The "Other" category allowed teachers to identify additional platforms they used that hadn't been included in the list. Here, teachers identified platforms such as Reddit, Tumblr, teaching blogs, and the online marketplace TeachersPayTeachers (TPT). They also identified some parent and school communication platforms such as ClassDojo, SeeSaw, Bloomz, and Remind. While some of these platforms would not be considered

social media for purposes of this study, the overall number of responses in the "other" category for both personal (n=5) and professional (n=15) use was relatively small.

Snapchat Not for Professional Uses

Snapchat experienced the biggest disparity between personal and professional uses. It was the fourth most popular platform for personal use, used by nearly half of the respondents. When it came to professional use, however, only three participants indicated that they used it, and 55 teachers identified it as their least preferred platform for professional learning when responding to an open-ended question about preferences.

Among the 55 teachers who identified Snapchat as their least preferred platform, 24 made comments related to the app's purpose to explain why it was not preferred (e.g., "I have never tried Snapchat for professional learning, but based on how I use it personally, I can't understand how this would be a helpful professional tool," and "Snapchat: it's fun to play with, but not educational at all"). Familiarity with how to navigate and use the app was another barrier cited by 10 users (e.g., "Snapchat: I don't know how to connect with other educators on Snapchat" or "Snapchat because it's not user friendly").

<div align="center">

Purpose-Driven Platform Selections

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The next section of the questionnaire asked teachers to identify which apps they would use for specific purposes such as advice seeking, collecting and organizing resources, getting classroom inspiration, finding lesson ideas, giving or receiving emotional support, learning about new ideas in education, or reflecting on their teaching practices. Teachers were able to select multiple apps for each category. The results indicated definite preferences among the teachers who participated in the questionnaire.

Facebook Overwhelmingly Preferred for Advice Seeking

When the elementary teachers in this study are looking for advice on how to handle a job-specific need such as challenging students, parents, or administrators, they overwhelmingly selected Facebook as their go-to app (see Figure 4.2). Over three-fourths of the teachers (n=220) identified Facebook as one of their preferred apps.
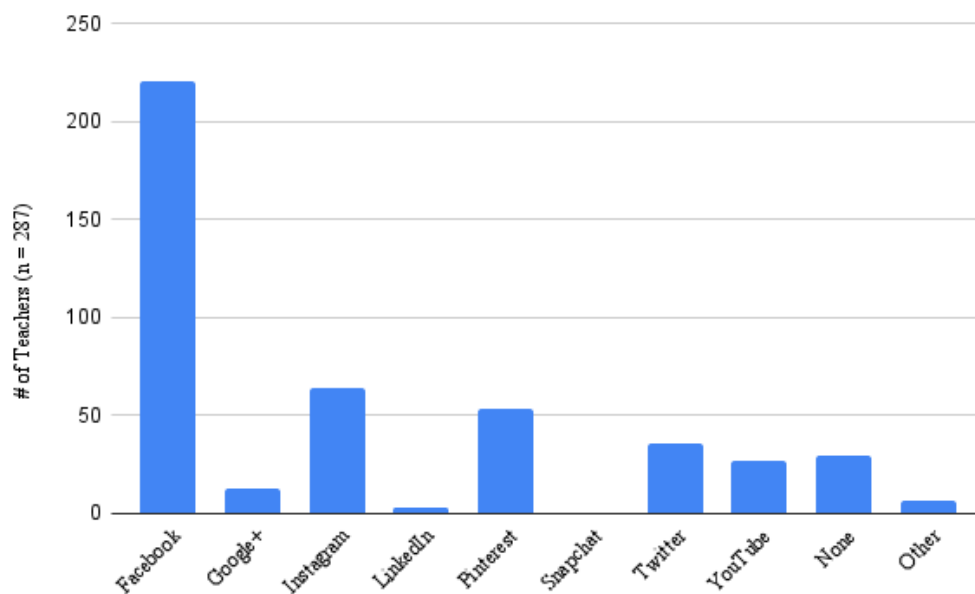
Figure 4.2. Preferred Platform for Advice Seeking

After Facebook, Instagram came in a distant second (n=64), followed by Pinterest (n=53). This was consistent with this study's earlier findings that these apps are the three most popular among teachers for professional purposes.

At the other end of the spectrum, Snapchat was not identified by any teachers as a preferred platform in this category, and LinkedIn was only selected by three teachers. This was consistent with this study's earlier findings that these platforms are not widely used among elementary teachers.

Pinterest Preferred for Collecting and Organizing Resources

Pinterest, which is largely marketed as a curation app, is the most preferred app among the elementary teachers in this study when it comes to collecting and organizing resources related to teaching (see Figure 4.3).
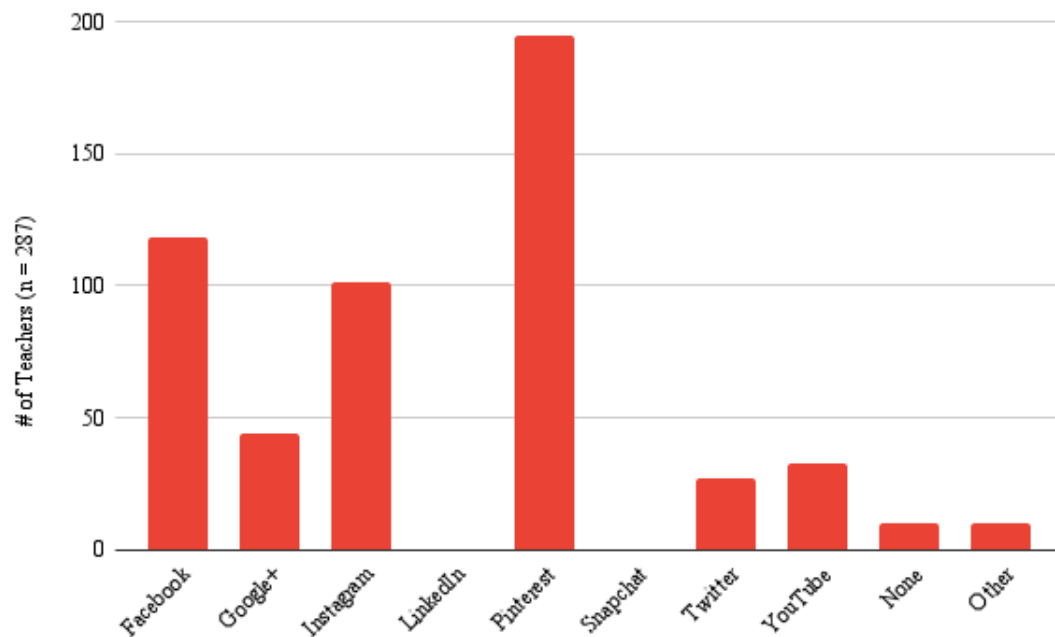
Figure 4.3. Preferred Platform for Collecting and Organizing Resources

While Pinterest was preferred by 195 of the 287 teachers, it didn't dominate the category in the same way that Facebook did for advice seeking. Both Facebook (n=118) and Instagram (n=101) were selected by over 100 teachers in this category. The next closest platform, Google+, was only selected 44 times. Snapchat and LinkedIn were not selected at all in this category.

Elementary Teachers Find Classroom Inspiration on Pinterest

The big three of Facebook, Instagram, and Pinterest continued to be popular when teachers were asked where they would look for classroom inspiration (see Figure 4.4). Classroom inspiration could include decoration or organization ideas, classroom

management strategies, or other ideas for things to try in the classroom. Pinterest was

selected by more than three-fourths of the respondents (n=231), while Facebook (n=159)

and Instagram (n=149) were selected by more than half.
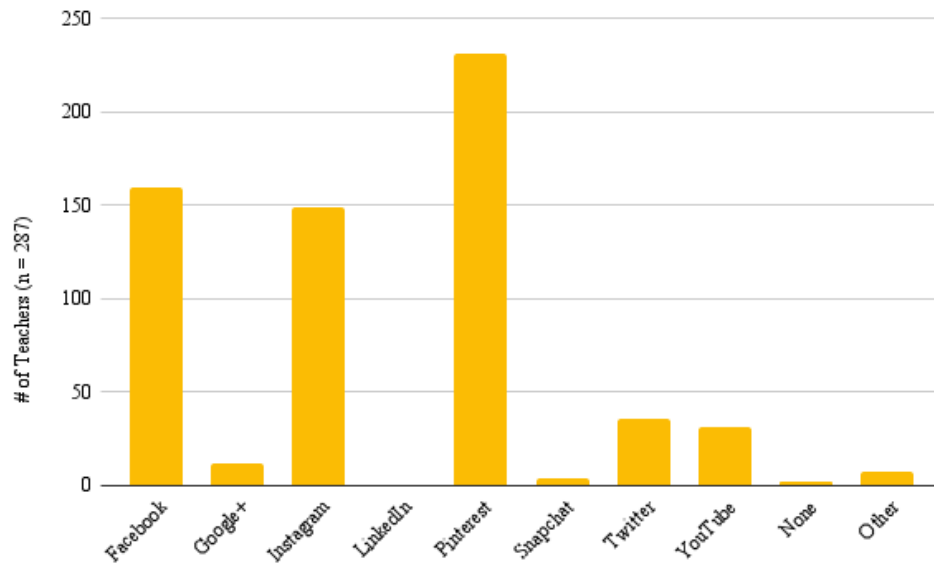
Figure 4.4. Preferred Platform for Finding Classroom Inspiration

Once again, a significant gap separated these three platforms from the others.

Twitter was the fourth most selected platform (n=36), followed by YouTube (n=31).

Snapchat (n=4) had one of its relatively best showings in this category, and LinkedIn was

not selected by any of the teachers who participated in the questionnaire.

Pinterest Preferred for Finding Lesson Ideas

When asked which platform they would choose to find a lesson idea for teaching

a particular skill, most participants (n=208) chose Pinterest (see Figure 4.5). Facebook

(n=145) and Instagram (n=115) followed in second and third place respectively, and

again, none of the other platforms were selected by more than 50 participants.
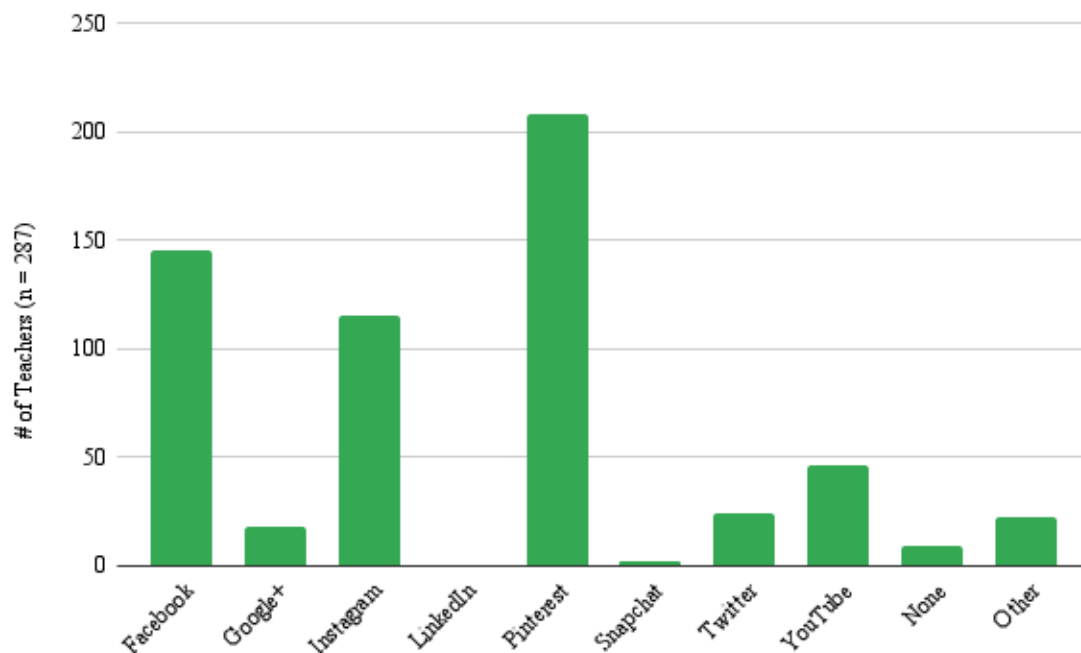
Figure 4.5. Preferred Platform for Finding Lesson Ideas

While distanced from the top three platforms in this category, lesson ideas can be considered a relative strength for YouTube (n=46). This category was YouTube's strongest overall showing among the various purposes for platform use, and it was the area where it outperformed fifth-place Twitter (n=24) by the largest margin.

Facebook Chosen for Giving or Receiving Emotional Support

When asked which platform they would choose for giving or receiving emotional support, Facebook (n=215) stood out as the clear winner (see Figure 4.6). This category differs from advice seeking in that the purpose of the social media post is not necessarily to get advice (although unsolicited advice may be given). Instead, these posts may be venting about a particular circumstance or commiserating with other teachers about the challenges faced in their classrooms.
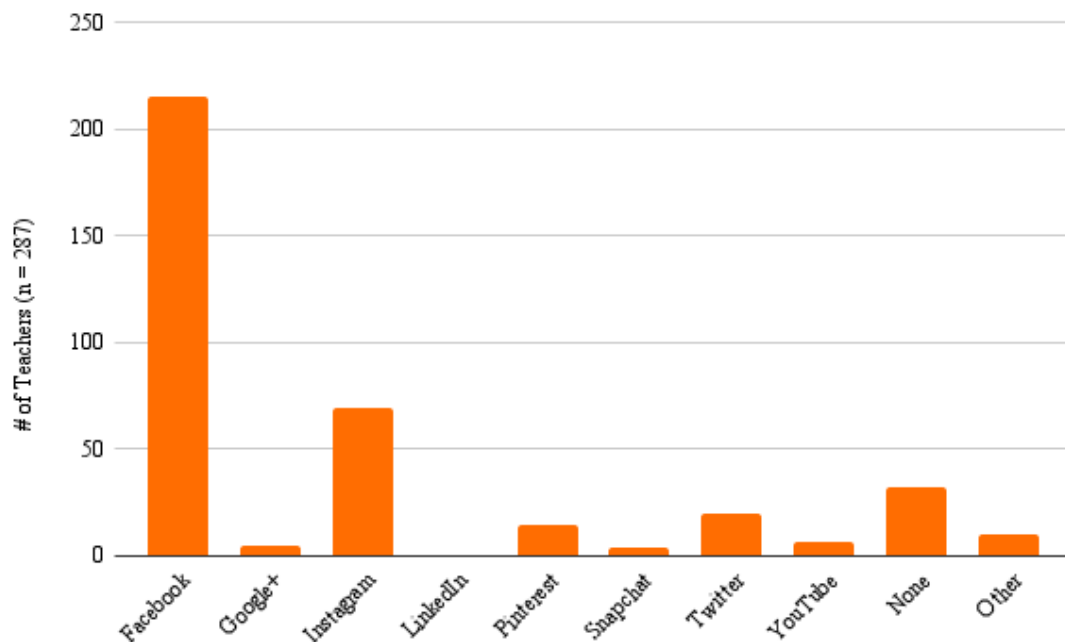
Figure 4.6. Preferred Platform for Giving or Receiving Emotional Support

While Instagram (n=69) was selected by nearly a quarter of the teacher participants, Pinterest (n=14) no longer rounded out the top three platforms for this category. Instead, 32 teachers indicated that they would not choose a social media platform at all for giving or receiving emotional support. Twitter (n=20) also outperformed Pinterest in this category.

Several Platforms Used for Uncovering New Ideas in Education

When it comes to finding out about the latest trends in education or what is new and noteworthy, the elementary teachers in this study still preferred Facebook (n=190), but it clearly wasn't the only platform selected for this purpose (see Figure 4.7). Pinterest (n=137) and Instagram (n=132) were also strong performers in this category, and Twitter (n=67) was selected by nearly a quarter of participants.
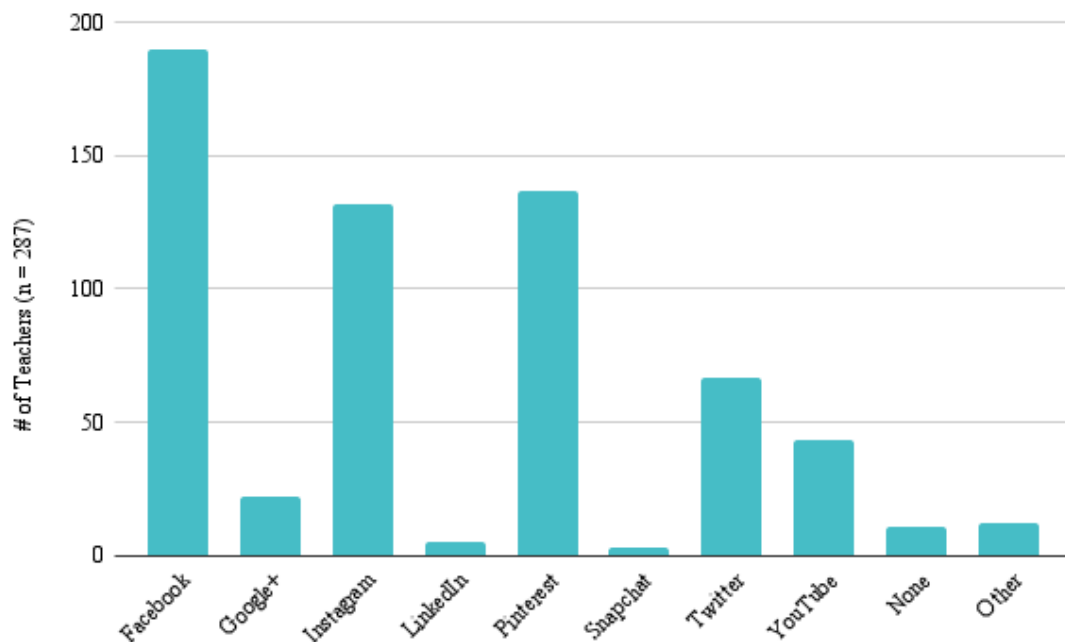
Figure 4.7. Preferred Platform for Learning about New Ideas in Education

This category marked the best performance for two of the platforms: Twitter (n=67) and LinkedIn (n=5), and the second-best performance for YouTube (n=43). It was also the only category in which four platforms—Facebook, Pinterest, Instagram, and Twitter—were each selected by more than 50 teachers.

Reflection Most Likely Happens on Facebook

Elementary teachers were asked which platform they were most likely to choose to reflect on their personal teaching practices. This category differs from many of the other categories in that reflecting will often require teachers to create and post content relating to their teaching rather than passively consuming content that others created. Facebook (n=141) led this category, although it was selected by fewer than half of the participants (see Figure 4.8). Instagram (n=82) came in second, and 57 teachers selected "None," indicating that they would not use social media for this purpose.
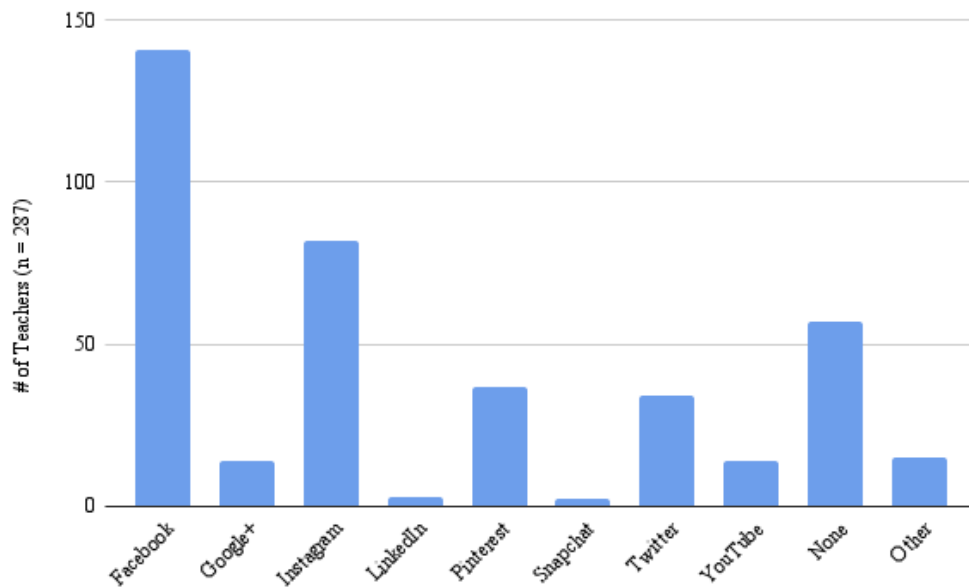
Figure 4.8. Preferred Platform for Reflecting on Personal Teaching Practices

Across all the specific purposes for social media use, this category reflected the least engagement with social media overall. No platform garnered more than 150 votes, narrowing the range of Figure 4.8 relative to the other figures in this chapter, and the number of participants who selected "None" was higher for this purpose category than any other. By comparison, "None" was selected by 25 more teachers in this category than its second highest performing category of giving or receiving emotional support (n=32). This suggests that reflecting is a less common purpose for social media use among elementary teachers.

Factors Driving Teacher Preferences

The last section of the questionnaire used open-ended questions to ask elementary teachers to identify their overall most preferred and least preferred platforms for professional learning purposes and to explain those preferences. Teachers were able to identify more than one platform as their most preferred or least preferred, although no

teachers identified more than three for each category. More than half of the questionnaire participants replied to these open-ended questions, with 235 out of 287 (81.9%) identifying their most preferred platform and 189 (65.9%) identifying their least preferred platform. The results of those preferences are shown in Table 4.3

Table 4.3

Most Preferred and Least Preferred Platforms for Professional Learning

Platform	Most Preferred n = 235		Least Preferred n = 189	
	Number	Percentage	Number	Percentage
Facebook	109	46.3%	25	13.2%
Google+	10	4.3%	12	6.3%
Instagram	82	34.9%	28	14.8%
LinkedIn	0	0%	34	18.0%
Pinterest	46	19.6%	12	6.3%
Snapchat	0	0%	55	29.1%
Twitter	28	11.9%	40	21.2%
YouTube	13	5.5%	9	4.8%
Other	11	4.7%	4	2.1%

These data are consistent with this study's previous findings that Facebook, Instagram, and Pinterest are the most preferred platforms among elementary teachers for professional uses. It is also worth noting that while more teachers reported using Pinterest than Instagram (see Table 4.1), Instagram was still singled out by more teachers as their most preferred platform.

The researcher then analyzed the open-ended comments to look for themes in the respondents' explanations of their preferences (see Table 4.4). Because respondents could select multiple platforms and have multiple and/or differing reasons for each platform, some open-ended responses were coded in multiple categories.

Table 4.4

Factors Cited for Most Preferred Platforms (N = 235)

Factor	Example Quote	Frequency, *n* (%)
Accessibility	"Facebook because it is easier to use and has more capabilities than other social media platforms." "I prefer Pinterest because I can easily search through it." "I like Instagram the most because it's quick and easy to follow. I can get to the gist in no time."	79 (33.6)
Connected Groups	"Facebook and Instagram…have teachers that teach the same types of students I teach. There are only 2-3 classes in my district with classes like mine, so these teachers serve as a resource, collaboration team, and source of support."	48 (20.4)
Inspiration	"Instagram…allows me to follow teachers for inspiration and connect with teachers around the world by seeing in their classroom via pictures."	43 (18.3)
Resource Sharing	"Twitter and Instagram [because] I find great articles on Twitter and freebies from educators on Instagram."	37 (15.7)
Visuals	"I prefer Pinterest and Instagram as far as finding ideas because they offer quick snapshots of ideas. I'm a visual learner!"	34 (14.5)
None Given	Respondent identified a platform without explaining their choice	30 (12.8)
Discussions	"Facebook because it's easier to have a more interactive conversation with groups of people." "Twitter because I find it more professional than Facebook or Instagram. There seems to be deeper thinking and less of asking for advice for problems."	26 (11.1)
Responsiveness	"Facebook because response time is pretty much immediately."	25 (10.6)
Support	"[On Facebook], the professional groups that I belong to allow me to ask questions, and there are supportive people to give advice and encouragement."	18 (7.7)
Curation	"I like Pinterest because it allows me to organize and save ideas as I find them."	11 (4.7)
Privacy	"Instagram. It is a platform where I can be the most vulnerable and personal. My other social media is more public and I am much more conscious about what and how I post."	10 (4.3)
Parent Communication	"ClassDojo for communication with parents."	2 (0.9)

Once the codes were established and refined, the researcher created code co-occurrence tables within ATLAS.ti to look for connections between each affordance and the platform(s) with which it was associated (see Table 4.5).

Table 4.5

Code Co-Occurrence Between Preferred Platforms and Their Affordances

Affordance	Frequency of Code Co-Occurrence by Platform, *n* (%)						
	Facebook	Instagram	Pinterest	Twitter	YouTube	Other	Google+
Accessibility (n=79)	29 (36.7)	30 (38.0)	16 (20.3)	12 (15.2)	2 (2.5)	1 (1.3)	5 (6.3)
Connected Groups (n=48)	38 (79.1)	13 (27.1)	1 (2.1)	3 (6.3)	1 (2.1)	1 (2.1)	1 (2.1)
Inspiration (n=43)	15 (34.9)	24 (55.8)	11 (25.6)	4 (9.3)	2 (4.7)	0	0
Resource Sharing (n=37)	18 (48.6)	14 (37.8)	8 (21.6)	7 (18.9)	0	1 (2.7)	1 (2.7)
Visuals (n=34)	5 (14.7)	23 (67.6)	6 (17.6)	2 (5.9)	7 (20.6)	0	0
Discussions (n=26)	13 (50.0)	9 (34.6)	2 (7.7)	4 (15.4)	1 (3.8)	3 (11.5)	2 (7.7)
Responsiveness (n=25)	15 (60.0)	5 (20.0)	3 (12.0)	6 (24.0)	3 (12.0)	0	0
Support (n=18)	13 (72.2)	8 (44.4)	0	1 (5.6)	1 (5.6)	1 (5.6)	0
Curation (n=11)	0	2 (18.2)	7 (63.6)	1 (9.1)	0	0	1 (9.1)
Privacy (n=10)	4 (40.0)	3 (30.0)	2 (20.0)	0	1 (10.0)	1 (10.0)	0
Parent Communication (n=2)	0	0	0	0	0	2 (100)	0

Note: The most frequently mentioned platform for each category is highlighted.

The remainder of this section will feature a few of those findings, focusing on the most mentioned affordances that drive teachers to positively choose a particular platform.

Accessibility and Ease of Use Matters Most to Elementary Teachers

When it comes to informal professional learning, over one-third of the elementary

teachers responding to the open-ended question about most preferred platform cited the

ease of use and ability to quickly access and find the information they were looking for as

a driving factor for the preferences. These comments came up most in the context of

Instagram (n=30) and Facebook (n=29).

Instagram Considered Efficient for Informal Learning

Several teachers commented how they appreciated how quick and easy it was to

use the platform. One teacher described Instagram as "a quick burst of ideas that I can

dive into more if they interest me." Another teacher explained that "I prefer Instagram

because it is quick and easy to use." Instagram's image-based platform enhances the

ability of teachers to scroll through and quickly assess whether the content is relevant. In

fact, one teacher contrasted their love of Instagram with their disdain for other platforms:

"Twitter, LinkedIn, and Facebook… [require] me reading to find out what you want to

know. I prefer to scan quickly to get ideas." Such ability to quickly locate ideas that are

personally relevant to a teacher's situation and interests was perceived as a major

platform affordance for many teachers.

Facebook Seen as a One-Stop Platform for Informal Learning

Among the 29 teachers crediting Facebook for its ease-of-use, many teachers

suggested that the professional use of the platform evolved from their personal use of it.

One teacher explained that they chose "Facebook [because] it is what I started with and I

am comfortable with [it]." Another teacher cited "Facebook simply because I'm on it

more often." Given that 97.6% of the study's participants are Facebook users, it is easy to see how these trends may be connected.

Other teachers described how their use of Facebook for personal purposes morphed into using it primarily for informal professional purposes. For example, one teacher shared her preference by explaining "Facebook – I don't understand how to use the others so I never got into them. I use Facebook mostly for professional things, and less for communicating with family." Still other teachers mentioned that they liked how they could find professionally relevant content while connecting with family and friends. For example, one teacher identified the platform as their most preferred because "Facebook [has a] convenient mix of personal and professional."

Social Media Valued for Connecting Groups

The second most mentioned affordance of teachers' most preferred platforms was the ability to connect groups of teachers who have similar interests or job-alike responsibilities. In this regard, Facebook was mentioned in 79.2% of the comments. The Facebook Groups feature is embedded within the platform, and teachers can join or leave groups based on their interests. These posts can then appear on users' message feeds automatically.

As one teacher explained, "I prefer Facebook for professional learning. It's easy to establish groups with like-minded individuals to collaborate, ask questions, or receive feedback from others who have gone through the same courses or process." This specialization may be especially helpful for elementary teachers in smaller districts with fewer people to collaborate with or those who have unique roles. One elementary counselor, for example, described how she is "in a couple of elementary school counselor

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groups that are so helpful" on Facebook. This is a unique affordance of social media, especially Facebook, in helping connect teachers who might otherwise feel isolated.

In addition to job-alike groups, some teachers mentioned finding groups connected to their schools' curriculum or books they were studying for professional learning purposes. One teacher listed several specific titles about elementary literacy for which she's joined a corresponding Facebook Group. Such groups facilitate opportunities to interact with the books' authors and readers and potentially deepen understanding of the content.

Another teacher highlighted the importance of finding the right groups for an individual: "I have found that joining the right Facebook Groups can provide a wealth of information and knowledge. Members are from all over the continent and even the world so they provide different perspectives." Not all groups have the same dynamics, norms, or participation rates, so finding one that matches an individual teacher's needs is an important part of the process. Still, a wide variety of groups exist, and there is no limit on the number of groups a teacher may join, making this a promising route for informal learning.

Instagram also came up in 27.1% of the comments about using social media to connect with job-alike groups. While Instagram currently lacks a group feature like the one on Facebook, teachers can use grade level hashtags or interests to search for and follow the posts of similarly situated teachers. One teacher described this process: "[On] Instagram, I follow teachers that have similar passions and interests to mine, so as they share ideas, it helps to inspire some of the activities I can use with my own students." Such an ability to self-select individuals to follow and develop a professional learning

network (PLN) contributes to elementary teachers' preferences when gravitating toward specific platforms for informal learning.

Elementary Teachers Value Instagram for Inspiration

The words "inspire" and "inspiration" were frequently mentioned in teachers' descriptions of their most preferred platforms, accounting for 18.3% of all comments. Within those comments, Instagram was mentioned 24 times (55.8%). For example, one teacher described how Instagram was their favorite because "I'm inspired by upbeat educators [who] share their experiences!" Another teacher contrasted their preferences as situational: "It depends…Instagram can give you inspiration, but Facebook allows for the connections and conversations." This comment further demonstrates the previous findings that elementary teachers are multi-platform users who select platforms based on their purposes. One day, a teacher may be seeking inspiration for a new lesson idea or classroom organization strategy, and another day, they may be looking for advice and feedback. But when seeking inspiration, Instagram was the most heralded platform, followed by Facebook (n=15; 34.9%) and Pinterest (n=11; 25.6%). Twitter (n=4; 9.3%) and YouTube (n=2; 4.7%) were also mentioned as providing inspiration.

Resource Sharing Is Valued Across Several Social Media Platforms

While previous categories of affordances were primarily linked to one or two platforms, the ability to share and access resources was a commonly touted feature of several platforms. Resource sharing was mentioned by 37 teachers as an important feature of their most preferred resources, and within those comments, teachers mentioned Facebook (n=18; 48.6%), Instagram (n=14; 37.8%), Pinterest (n=8; 21.6%), and Twitter

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(n=7; 18.9%). Once again, some teachers linked more than one of these platforms to resource sharing potential, so the total number of platforms mentioned does not equal 37.

The types of resources shared and valued by teachers varied. One teacher relied on her Facebook network to deliver "vetted articles based on research to read in the morning while getting ready." Other teachers described accessing shared documents or completed lesson plans through social media. One teacher also mentioned learning about more traditional professional learning opportunities through social media: "It is also through both Facebook and Instagram that…I found a teacher conference that I attended which absolutely inspired and impacted my way of teaching in the classroom in the best way possible." For teachers looking for these types of resources to further their learning, stay on top of the latest research, or simply deliver a more engaging and effective lesson, social media provides many opportunities for sharing resources.

Instagram and YouTube Appeal Most to Those Who Value Visuals

Although all the platforms support inclusion of images or short videos, the photo and video-based platform, Instagram, and video-driven YouTube were most preferred among teachers who cited the importance of visuals in identifying their favorite platforms for informal learning. Some comments in this category highlighted the value of Insta-stories—short video clips of teachers explaining a concept with visuals, similar to relative social media newcomer TikTok. One teacher said she most preferred Instagram "only because individuals use the story option and post videos rather than just words." Another teacher indicated that such visual affordances were valuable enough to overcome challenges with the platform, describing that she preferred "Instagram for visuals, ideas,

and short videos (stories) [even though it's] more difficult to search [than Facebook] because of hashtags."

The video features were also described as a major affordance of YouTube. One teacher explained that they preferred YouTube "because it has videos to watch that can demonstrate teaching techniques." Such demonstrations can be an important part of continuous professional learning. Another selected YouTube due to personal learning preferences: "YouTube because I tend to like things like Ted Talks and other video modes for professional learning and development. I also prefer them for video tutorials, etc." Having the ability to self-select and customize professional learning toward an individual's learning preferences is a major benefit of using social media for informal learning.

While several comments highlighted the benefit of video, others described the value of still pictures without any accompanying audio. Such pictures can help teachers better visualize what is being described in a post than text alone. One teacher shared that "I prefer Instagram because there are so many teachers out there, posting classroom ideas with pictures. The picture captures my attention first, and then I read about it. It's something that I might not think to research, but it's a great idea!" In this way, the picture can be an entry point into deeper learning about unfamiliar topics—an important quality for inspiring development of new skills and expertise.

Factors Deterring Use

As previously shown in Table 4.3, 189 elementary teachers identified their least preferred platform(s) for informal learning. Teachers were also asked to explain why they disliked their identified platform. These open-ended responses were coded inductively for

themes (see Table 4.6). Once again, because the question was open-ended, multiple

platforms and reasons could be provided. This resulted in some comments being coded in

multiple categories.

Table 4.6

Factors Cited for Least Preferred Platforms (N = 189)

Factor	Example Quote	Frequency, *n* (%)
Purpose	"Snapchat…[because] this platform is mostly for social purposes and a small amount of news."	46 (24.3)
Familiarity	"LinkedIn is not helpful to me, but I also haven't put a whole lot of time into learning it."	28 (14.8)
	"I really only use Facebook and Pinterest. I'm not familiar with the other platforms."	
None Given	Respondent identified a platform without explaining their choice	26 (13.8)
Platform Features	"I don't think Twitter is helpful, mostly due to the small amount of characters that can be used and the photos are not as effective as Instagram."	25 (13.2)
Quality	"Pinterest [because] the links go nowhere [and] the pictures don't show enough."	23 (12.2)
	"Facebook [because] I've never found anything very informational."	
Time	"I used to love Facebook when it first began, but now it's annoying to have to scroll through so much just to get to something helpful."	19 (10.1)
	"Pinterest [is] a rabbit hole that almost always leads back to TeachersPayTeachers. I like TeachersPayTeachers, but if I want resources from there, I start my search there."	
Communication	"Instagram and Snapchat…do not really support peer discussion and feedback or allow for in-depth conversations."	9 (4.8)

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Table 4.6 (continued).

Separation	"I like to keep my professional life very separate from my personal one, which rules out having two Facebook or Instagram pages for me (too much work in my opinion)."	8 (4.2)
Pressure	"I…find Instagram to make me feel inadequate, so it can be very upsetting to see posts after a tough day or week."	7 (3.7)
	"Twitter feels like there's too much going on and feels overwhelming for me."	
Monetization	"Facebook because I find that the educator accounts on Facebook are often companies started by people who used to teach but don't anymore, and [they] have made a brand off of their work instead of teaching every day."	4 (2.1)
Negativity	"Facebook. Many teacher pages I follow are often a space where people come to complain or 'vent.' While fellow followers often leave helpful advice (which I can learn from as well), I find it an overall more negative space than other social media."	3 (1.6)

Once the codes were established and refined, the researcher created code co-occurrence tables within ATLAS.ti to look for connections between each limitation and the platform(s) with which it was associated (see Table 4.7). This section will examine those findings and synthesize some of the relevant themes of the open-ended comments.

Maintaining Purpose

The most cited reason for not preferring a platform for informal learning was the perspective that the platform didn't serve that purpose or couldn't function in that capacity (n=46; 24.3%). Over three-quarters of those comments came up in the contexts of Snapchat (52.2%) and LinkedIn (28.3%). Facebook, Google+, Instagram and Twitter were also mentioned by a small number of respondents (3 or 4 per platform).

Table 4.7

Code Co-Occurrence Between Least Preferred Platforms and Their Limitations

Limitation	Frequency of Code Co-Occurrence by Platform, *n* (%)								
	Facebook	Google+	Instagram	LinkedIn	Pinterest	Snapchat	Twitter	YouTube	Other
Purpose (n=46)	4 (8.7)	3 (6.5)	3 (6.5)	13 (28.3)	0	24 (52.2)	4 (8.7)	0	0
Familiarity (n=27)	0	3 (11.1)	3 (11.1)	8 (29.6)	0	10 (37.0)	8 (29.6)	0	1 (3.6)
Platform Features (n=26)	0	2 (7.7)	4 (15.4)	2 (7.7)	1 (3.8)	6 (23.1)	12 (46.2)	1 (3.8)	0
Quality (n=23)	4 (17.4)	0	4 (17.4)	4 (17.4)	2 (8.7)	6 (26.1)	4 (17.4)	1 (4.4)	0
Time (n=19)	5 (26.3)	2 (10.5)	0	3 (15.8)	5 (26.3)	5 (26.3)	4 (21.1)	3 (15.8)	1 (5.2)
Communication (n=9)	0	1 (11.1)	3 (33.3)	2 (22.2)	1 (11.1)	2 (22.2)	3 (33.3)	0	0
Separation (n=8)	6 (75.0)	0	3 (37.5)	0	0	1 (12.5)	1 (12.5)	0	0
Pressure (n=7)	0	1 (14.3)	2 (28.6)	0	1 (14.3)	0	2 (28.6)	0	1 (14.3)
Monetization (n=4)	2 (50.0)	0	0	0	2 (50.0)	0	0	0	0
Negativity (n=3)	3 (100)	0	0	0	0	0	0	0	0

The most frequently mentioned platform for each category is highlighted.

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Snapchat, with its ephemeral photo sharing capabilities, was largely viewed by the teachers in this study as being more of a personal platform for socializing and fun. Several teachers remarked that they had not seen "any professional benefit from it" and one teacher said, "based on how I use it personally, I can't understand how this would be a helpful professional tool."

While dismissive attitudes were the most common, some teachers expressed curiosity about exploring the platform a bit more. One teacher, for example, identified Snapchat as her least preferred platform, but followed up with the caveat that they may not have "found the right thing. There's so much with Snapchat that is deemed inappropriate for use, it's difficult to use it confidently professionally." Another teacher saw potential for the app with BookSnaps—an annotated picture of what a student or teacher is currently reading—but explained that "Snapchat still seems to be taboo in the educational setting where I live." Based on such comments, Snapchat does not seem to be a popular source for informal learning among elementary teachers.

LinkedIn was also mentioned as the least preferred platform, and many of those comments emphasized that the corporate networking aspect of the platform is less helpful for learning. For example, one teacher identified LinkedIn because "to me, it is for those looking for business connections, not a professional learning network for educators." Another commented that "I rarely see anyone post or use it other than for networking or job hunting." One teacher even explained that they "basically created [a profile] to have an online resume that districts could see when they Googled [their] name." As a result, teachers may be using LinkedIn for professional purposes, but not for learning.

Platform Familiarity

Teachers' familiarity with the different platforms also shaped their preferences. Comments about not knowing how to use a particular platform came up in 14.8% of the responses (n=28). Such comments showed up most frequently in the contexts of Snapchat (n=10), Twitter (n=8), and LinkedIn (n=8). While some comments indicated that the teacher didn't know enough about a particular platform to use it (e.g., "LinkedIn because I'm not as familiar with it"), comments about Twitter expressed more of an underlying current of frustration. For example, one teacher identified Twitter, explaining that "people love it, but I just can't figure it out." Others also cited a learning curve for Twitter as a deterrent to its use: "Twitter can be confusing for people that have just started" and "I just haven't taken the time to figure out how it really works." Such factors may limit elementary teachers from accessing informal learning opportunities that exist on those platforms.

Platform Features

Elementary teachers also choose between platforms based on the various features they have. Such comments came up in the context of all platforms except for Facebook, with Twitter being mentioned twice as much (46.2%) as the second-place leader in this category, Snapchat (23.1%).

While Twitter's character limit has increased from 140 characters to 280 in recent years, elementary teachers still cited this as a limitation of the platform: "with limited characters, it is hard to get [a] full message across" and "you don't have enough characters to complete your thoughts." If teachers did find ideas they liked on the platform, some complained about their inability to curate that information with comments

such as it's "hard to organize ideas" and "it's not very user-friendly in terms of being able to pin and post resources." While Twitter may be a popular tool in some learning networks, these factors deter some elementary teachers from embracing the platform for informal learning.

Comments about Instagram's feature limitations were also informative. Unlike some of the other platforms, Instagram does not (as of this writing) allow embedded hyperlinks within posts. Users may include a single link through their profile page, and some users take advantage of third-party link sharing tools to post multiple linked resources under the single hyperlink. One elementary teacher commented, "I find Instagram the least helpful because people usually post a preview, and then you have to navigate to an external link." Another commented that it's "hard to find things if you don't save them at the moment you see them" and a third teacher shared that "it's hard to remember who posted what." As a result, these platform limitations make it more difficult for some elementary teachers to locate and curate resources that could help them in the classroom and may deter them from using Instagram if curation is something they value.

Resource Quality and Time Constraints

Several elementary teachers (n=23) made comments about the quality of resources on different social media platforms and cited this as a reason to dislike particular platforms. While some teachers used negative descriptors of platforms (e.g., Snapchat is "silly" and Instagram is "annoying"), others went into more detail about their perceived limitations of the sites. For example, one teacher described that they belong to

Facebook groups, but "the scope of the information on them is very limited." Another criticized Twitter because they "haven't had much luck finding useful resources."

These criticisms also align with complaints about the time investment needed to locate useful information. One teacher identified YouTube, for example, because it "feels like it takes too long to find what I need, and the quality of videos aren't always professional, so I feel like time has been wasted. If there were credible/quality webinar type of videos, those are what I would be interested in, but it's too hard to find currently." Similar complaints were levied against Facebook: "There are many distractions when using Facebook. I don't like the ads, and there is too much to sift through to actually find something I might need. The other platforms are easier to use for searching." These comments underscore this study's earlier findings that accessibility and ease of use matter greatly to elementary teachers. Even if high quality resources exist on platforms, teachers may be deterred from finding them if they must spend time inefficiently digging through less relevant resources.

Other Factors

The remaining comments reflecting disdain toward particular platforms covered a range of topics. Some elementary teachers disliked Instagram or Twitter most for informal learning because they believed those platforms limited interactivity and communication between teachers (n=9). While this criticism was also mentioned in the context of other platforms (Google+, LinkedIn, Pinterest, and Snapchat), it is worth noting that no one cited this concern in the context of Facebook. Facebook did, however, receive nearly all the comments (6 out of 8) about separating work social media from personal social media consumption.

Digital privacy stood out as an important concern among elementary teachers through comments such as "[My Facebook settings are] on private, but it's still too public to share all that professional and personal information" and "too many people share personal information on there." Privacy also came up in one of the non-Facebook centered comments when a teacher chose "Twitter and Instagram because I don't trust their privacy practices." While these teachers were a minority among the respondents, the comments reflect an awareness that privacy concerns are relevant to elementary teachers.

Teachers also expressed concern with feeling pressured or overwhelmed by social media. Comments about there being "too much to navigate" or "too much information" were made in the contexts of Google+, Twitter, and Pinterest, while Instagram was considered overwhelming because of the unrealistic images of classrooms and teaching that were sometimes presented. One teacher criticized Instagram "because it's more about putting your best foot forward and less about being realistic." Another described that they "find Instagram to make me feel inadequate." This suggests that for some teachers, at least, some platforms may create rather than relieve stress.

The issues of marketing and monetization were mentioned by four elementary teachers in the contexts of Facebook and Pinterest. These teachers expressed concerns that "too many links [went] to paid products instead of lesson ideas" or "resources you click on…lead[] to someone selling something." While some teachers saw this as a disincentive to use Facebook or Pinterest, other teachers celebrated these features. In response to a different open-ended question asking teachers to describe any other professional activities they engage in through social media, five teachers volunteered that they promote their small business or other education-related goods and services through

social media. Such differing perspectives on the monetization of social media as both a valuable activity and a drawback highlight a tension that may exist among elementary teachers.

A final theme mentioned by three elementary teachers centered on the negativity on Facebook. Criticisms here suggested that "Facebook is too full of judgmental opinions," and that "heated emotions come through." According to one teacher, this results in "an overall more negative space than other social media." These three comments suggest that while Facebook may be valued by some for its ability to facilitate discussions about various topics, that affordance comes with a downside for some of its users in the form of negativity and disagreements.

Summary of Questionnaire Findings

The questionnaire responses confirmed that most elementary teachers use multiple social media platforms, but they don't always use the same platforms for personal and professional purposes. When deciding which social media platform(s) to use, elementary teachers are purpose-driven with specific preferences aligned to different informal learning tasks. When identifying their most preferred platforms, a variety of factors are important. Elementary teachers value accessibility and ease of use most. They also appreciate connecting with groups of teachers with common interests, sharing resources, and looking at visuals. Similarly, negative personal perceptions of a platform may deter elementary teachers from initially trying or remaining on specific platforms. These factors may include lack of familiarity with a platform, time constraints, poor resource quality, and the absence of specific features on a platform.

The next chapter examines findings from the interview portion of the study.

CHAPTER 5

INTERVIEW FINDINGS

The purpose of this netnography was to explore how elementary teachers participate in informal professional learning across multiple social media platforms. The researcher believed that examining holistic social media practices could provide a deeper understanding of teachers' tendencies and create opportunities for more effective informal learning.

This chapter provides key findings analyzed from six semi-structured interviews designed to address the research question: How do elementary teachers use social media for informal professional learning?

In working toward addressing that question, this chapter examines the findings from the interview phase of the research process. The researcher identified several teachers from the questionnaire phase of research to invite to participate in an online interview. These teachers were selected based on their agreement to the questionnaire item requesting consent to participate in a follow up interview. These teachers also identified themselves as active social media users across multiple platforms. Of those 13 invited, six teachers participated in the interviews. The researcher then used inductive analysis of the participants' responses to interview questions to identify and organize findings relevant to the research question.

This chapter begins with a description of the qualitative data analysis software used to analyze responses. It then describes the interview participants based on the

demographic information they provided through both the interview and questionnaire. The remainder of the chapter examines how these teachers describe their formal professional learning opportunities and how those compare to their informal learning opportunities through social media. Finally, the chapter recounts the elementary teachers' overall assessment of social media as a tool for informal learning.

Use of Qualitative Data Analysis Software

Throughout all stages of the research, the researcher used the qualitative data analysis software (QDAS) ATLAS.ti for Mac version 9.1.0-9.1.2. Questionnaires, social media screenshots, and interview transcripts were imported into the software as PDF documents with optical character recognition (OCR). This allowed individual lines of text to be coded and compared across documents. It also allowed the researcher to develop, track, and refine codes to match her thinking across the data sources.

Interview Participants

A total of six elementary teachers were interviewed using synchronous or asynchronous online platforms depending on each teacher's availability and preference. These teachers were recruited based on three criteria: 1) the teacher opted into further contact for interview purposes on the online questionnaire and provided a working email address; 2) the teacher had one or more publicly visible social media accounts that included content related to teaching practices; and 3) the teacher could commit to a 30-45 minute synchronous or asynchronous online interview. Of the six interviews, one was conducted via Skype, one was conducted via Google Meet, and the remaining four were conducted asynchronously using the online video recording software Flipgrid.

All six participants were white women who taught in publicly funded elementary schools and who represented teaching experiences among different grade levels in different public-school environments. Each participant was assigned a pseudonym to ensure anonymity. A summary of their demographic characteristics is provided in Table 5.1.

Table 5.1

Demographic Characteristics of Interview Participants

Pseudonym	Location	Role (grade)	Years Teaching Experience (n)	Social Media Platforms
Courtney	Georgia (suburban)	Media specialist (3-5)	23	Facebook, Google+, Pinterest, Twitter
Emma	Minnesota (urban)	Reading (5) & Social Studies (6)	2	Facebook, Instagram, Twitter, Snapchat
Hailey	California (Suburban)	Math & Science (4)	6	Facebook, Instagram, Pinterest
Karla	Georgia (rural)	Teacher (5)	26	Facebook, Instagram, Twitter
Lydia	Georgia (suburban)	Teacher (1)	18	Facebook, Instagram, Twitter
Melissa	Maryland (urban)	Math specialist (K-5)	5	Facebook, Instagram, Twitter

All interviews were transcribed and analyzed inductively for themes using ATLAS.ti software. After multiple readings of each interview, codes were connected, merged, and refined to capture the major themes communicated across the interviews.

Limited School-Based Learning Opportunities

When asked about the professional learning opportunities available within their schools, five of the six participants described single-day workshops or sessions provided by the school or the district or multi-day conferences that teachers could apply to attend.

Roles of Outside Entities

For the most part, school-based professional learning opportunities are decentralized. Melissa, for example, explained that "professional development isn't typically offered through the school itself. It's usually offered through the county." Karla echoed this sentiment, describing how "some send us to our local [Regional Education Service Agency]. Some are done by the county and are for a select group of educators or administrators—that type of thing." Courtney mentioned that "The district offers PL on PL days here and there, [and] there are opportunities to go to conferences," while Lydia highlighted single-day workshops by presenters like math-guru Greg Tang and Columbia's Teacher's College who would "come to our school and train the entire staff." None of the participants volunteered descriptions of any school-based follow-up experiences based on these workshops or conferences.

Focus on Logistics

The conferences and single-day workshops stood in sharp contrast to Emma's experiences. She recounted that:

Last year, at my school, we did not have any professional learning opportunities. We had a few things at the beginning of the year. We had a five-day period before students came. Three of those [days] had professional development, [and] there was a little bit of special ed training, but that was it. So most of it was like

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information from our authorizer or how to clock in and out and where to park and basics like that, but nothing that contributed to my knowledge of teaching or classroom management or anything like that.

While she went on to describe implementation of some new professional learning initiatives in her school, her comments revealed that professional learning was inconsistent and limited.

Karla described similar professional development experiences that focused on reviewing procedural knowledge. Her examples included a professional development opportunity targeted toward those who were serving as a Local Educational Agency (LEA) representative to facilitate special education-related meetings and a whole-school session focused on the logistics of using a specific app to monitor and track behavior intervention data.

Focus on Math and Literacy

The teachers also shared that the focus of these professional development opportunities tended to be on math or literacy topics that don't necessarily apply to teachers with more specialized positions. Courtney, who currently serves as an elementary media specialist, described how "they're more geared towards teachers, most of the time. Which is the way it should be. It's a school system; teachers are the front line." But as a result, the professional development only "sometimes" met her needs.

Melissa shared a similar experience. While she described a variety of subjects covered by the school district's offerings, she clarified that "there tends to be more offered for math and reading throughout the year than science or social studies."

Furthermore, Lydia, who had over 18 years of teaching experience in the early grades, only mentioned school-based professional development opportunities related to math and literacy. She described sessions related to implementing a Writer's Workshop instructional model and presentations by an author who writes children's books and designs learning activities that bridge math and literacy for elementary audiences. Such examples suggested that math and literacy were at the forefront of formal professional development experiences.

Learning for Teacher Leaders

Finally, half of the teachers who participated in interviews reported leading some of the professional development opportunities in their school or district. These were targeted toward a particular subject (Hailey and Melissa led math workshops) or a school initiative (Karla led professional development sessions on Positive Behavior Intervention Systems, also known as PBIS). As a result, these teachers felt some responsibility for expanding their expertise beyond their local colleagues.

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Factors Driving Social Media Use

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Interview participants were asked to share how they got started using social media to enhance their teaching practices and connect professionally with other teachers. Their origins fell into three main categories: college coursework, evolutions of personal use, and early adopter experimentation.

College Coursework

For Melissa and Courtney, their professional use of social media for learning originated in college coursework. Melissa described that "there was an emphasis within my classes to use social media. I literally had assignments as part of my senior year and

internship of getting on Twitter and creating a professional portfolio, connecting with other educators through that." Courtney experienced a similar phenomenon when she sought out a media specialist degree: "I don't know if I [used social media professionally] before grad school. When I did my media specialist degree is when I started doing it more." Both teachers had personal social media accounts prior to their coursework so they were familiar with the platforms, but they cited college classes as being the impetus for using the platforms for professional learning purposes.

Evolution of Personal Uses

The other interview participants were also social media users who evolved to use the platforms professionally. Hailey described how "my grade level colleague…has her [own] blog. So, I think that is how I kind of got tuned into that whole world." Karla, meanwhile, recounted that "I would have different thoughts—different needs, and I would sort of search those out. I started with Facebook…[and then] branched out to Twitter and Instagram." Emma mentioned using her Instagram account's recommendations feature to identify teachers to follow.

Experimentation and Early Adoption

Lydia recounts being an early adopter of online groups through discussion boards "a really long time ago." She continued, "Then I was introduced to Twitter, and that's kind of where it really took off for me….I connected with lots of teachers through Twitter." She described how she then branched off into Facebook groups and Instagram, but credits those early online groups with introducing her to Twitter.

Social Media Pervasive for Elementary Teachers

These six experiences demonstrate that there are multiple ways that teachers begin using social media for informal professional learning. Some, like early-adopter Lydia, and social media users Karla and Emma, found it organically through the platforms they were already using and the recommendations of other users or internal platform algorithms. Others, like Melissa and Courtney, were pushed to use platforms through coursework. Meanwhile, Hailey found encouragement through mentor teachers in her district. This demonstrates the pervasiveness of social media in elementary teachers' lives.

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Role of Privacy Concerns

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All six participants used at least three social media platforms, with Facebook being the only platform used by all six. Within these platforms, five of the teachers acknowledged having multiple accounts for a single platform. For example, they might have multiple usernames for Twitter (Melissa and Lydia) or multiple Instagram accounts (Melissa, Karla, Hailey, and Emma). It is important to note that Facebook limits this feature unless teachers create a business or fan page for themselves, so the opportunity for multiple accounts is not accomplished as easily on that platform compared to others. Table 5.2 provides a breakdown of which interview participants were on each platform.

Table 5.2

Platforms Used by Interview Participants

Platform	Courtney	Emma	Hailey	Karla	Lydia	Melissa	Total Users
Facebook	X	X	X	X	X	X	6
Google+	X						1
Instagram		X	X	X	X	X	5
Pinterest	X		X				2
Snapchat		X					1
Twitter	X	X		X	X	X	5
Total Platforms	4	4	3	3	3	3	

Separating Personal and Professional Identities

When expressing their preference for multiple accounts, teachers talked about separating their personal identities from their professional teaching identities. Karla, for example, explained "I follow a lot of educators and educator accounts on Instagram—probably more than anywhere else, and I created my own account there simply for that, separate from my personal account." This was similar to Hailey's experience. Hailey said, "I have a separate teacher Instagram and a personal Instagram. But I still go on both probably the same amount…several times a day."

Lydia's explanation for multiple accounts was a bit different in how she conceptualized her professional accounts versus her personal ones. She reported having a Twitter account oriented towards the families of the students in her class (professional) and another for her personal interests. As she described:

> I have a class Twitter page where I share things that are happening in our
>
> classroom with no names or anything, and I also have my personal account where
>
> I ask questions, share things from conferences I attend, and books I'm reading as

well as just the books that I'm reading for fun. I check Twitter a few times each

day for both accounts.

In that way, she associated her "personal" account with the one that she used for informal

learning and "professional" account for interacting with her school's stakeholders.

Controlling Content for Different Audiences

Multiple Twitter accounts allowed Lydia to communicate differently between

students and their families and other teachers and colleagues who shared her interests.

She later described her target audiences for both accounts to help explain their functions:

I think the audience for my main [personal] Twitter account is teachers, authors

and illustrators, publishers, and really teachers from all over the world, not just

locally. The audience for my teacher [Twitter account] is families at my school,

people in our community, and then other schools in our county, as well as

administrators and then, kind of, our partners in [education]. I'm pretty particular

about who I let follow our teacher class account, but as far as my personal

account, I'm pretty open because I want to get to know as many people and as

many opinions as possible.

By creating multiple accounts, Lydia was able to fragment aspects of her teaching

identity. This allowed her to engage with the platform in different ways that fulfilled her

personal and professional goals.

Protecting Student Identities

Consideration for protecting student identity was a significant factor in separating

accounts. Lydia's attention to who she allowed to follow her class Twitter showed that

she was concerned about privacy and confidentiality issues. Furthermore, even though

Hailey has multiple accounts to divorce her personal interests from her professional ones, she revealed significant concerns about maintaining student privacy in her teaching-related posts:

> I'm always wanting to post student work because I feel like analyzing what students have done in their exploration portion of our lesson is so valuable for me as an educator, but also, I would think, for others…. However, it's hard to do that because of confidentiality issues. You know, even handwriting can be a personal identifier, so unless you have express permission from the parents, you really shouldn't be posting.

She went on to say, "I don't post as much as I want to because I always have that feeling of, 'Oh, wait. Is this okay legally?' and for privacy concerns."

Emma believed that some of these privacy concerns were remedied by a release signed by parents at the beginning of the school year authorizing the use of student images on websites such as her school webpage. While she did not feel as restricted as Hailey in posting student images or student work on her private social media accounts, she described a strict process for attempting to maintain her accounts' privacy:

> I'm regularly very paranoid and going through my followers because since [my account] is private and I keep it strict, I don't have anybody that I don't know in real life or that I'm not like a very close friend with. And I make sure every time someone adds me, even if I do know them, I think about them specifically and what I know about them. Does this person need to know about my children and who they are and what they look like and where they go to school? And if the answer is no, I will not add them—even if it's my uncle or my friend's friend or

something like that. I keep that lens on my followers every day, and even once a

week or so, I'll go through all of my [Twitter followers] and…make sure I am

actively acknowledging that they will have access to seeing what my students

look like and whether or not they should remain a friend of mine.

This level of scrutiny revealed significant concern with protecting students.

Maintaining an Appropriate Identity

A final privacy concern stemmed from worry over what parents or students might

discover online. This seemed particularly relevant for Emma, the youngest teacher among

those who were interviewed. Given that she grew up with social media, she expressed

great concern with students finding older posts. She said:

I had to make a whole new Facebook because the Facebook settings would not let

me go back far enough to like 2008 and delete some of the things that I said when

I was in 8th grade that I didn't want my students to find. I couldn't find a way to

control that, so I had to delete my Facebook and then make a new one for fear of

them, you know, finding something that's not okay.

As a thirteen-year-old, Emma probably never considered any future employment-related

repercussions to her social media use. Her later need to delete entire accounts reflects a

growing concern that younger teachers may face in relation to social media.

Emma's problems were not limited to Facebook. Snapchat, which was invented

when Emma was in high school, was also an issue. She went on to describe:

I had to change my Snapchat handle because it was inappropriate….you never

know when something's going to sneak up and bite you—especially when you're

a teacher and you've got 85 kids who are actively searching your name on the

internet every single day.

In this way, multiple accounts, for Emma, acted as a form of image management.

Benefits of Using Multiple Platforms

All six interview participants described several benefits they personally

experience from the different social media platforms they use. Their experiences

highlighted social media's ability to help teachers expand their learning networks,

collaborate on specialized topics, interact with authors and vendors, see examples from

others' experiences, and gain inspiration from thought leaders. Experiences vary among

the platforms, but Facebook's integration was most seamless.

Expanded Depth of Learning Network

The ability to expand one's learning network beyond the walls of the school was a

common benefit identified by the teachers interviewed. Hailey stated that "the benefits of

social media would just be that you're able to connect with other teachers, and of course,

all of that collaboration means more ideas—possibly better ideas—and hopefully the

spread of best practices."

Courtney agreed. According to her, expanding learning opportunities beyond the

school base makes teachers stronger. She explained, "You cannot exist in a vacuum as a

teacher, and if you think you can ... you're missing out. [Social media] gives you a

broader, wider network of people to learn from and share with. It will make you

stronger."

In some cases, the benefits of these connections may be stronger than what some

teachers experience in their workplace. When Karla elaborated on why she uses social

media to connect with other teachers, she commented, "I will say that I probably get more ideas through searching things on Instagram or Facebook than I do from people that are nearest to me at the actual school."

Lydia had a concrete example of this when she described how social media helped her gain access to topics that weren't being considered or discussed in her own schools. She shared:

> The hot topic of Thanksgiving and culturally responsive ways to teach
> Thanksgiving [is something] we definitely aren't embracing ... at our school.
> Social media has allowed me to dig deeper into things that I can help to teach my
> own family and then my kids as well. I think if not, without reaching out to social
> media and getting these other resources, we kind of stay stuck in where we are
> and either avoid the topic or just go with the flow, which isn't good for anybody.

In this way, social media allowed Lydia to engage in a conversation that was meaningful to her but wasn't likely to happen within her own school.

The access to a larger social network made possible by these multi-platform social media users meant that they had more people to connect with when they had questions or wanted diverse takes on a topic.

Collaborating on Specialized Topics through Facebook

Many of the teachers interviewed shared examples of how they use Facebook groups to target specific short-term learning needs. These groups may be public or private and teachers are able to join as many as they would like based on their interests. Group posts show up on their Facebook feed just like posts from friends and family, or users can go directly to the group's Facebook page (similar to a profile) to read the latest content.

The elementary teachers in this study mentioned belonging to grade level groups for they grade they taught as well as special interest groups for topics like math instruction or PBIS.

Groups Provide Just-In-Time Informal Learning

Facebook groups were credited with providing just-in-time informal learning opportunities for their members. Melissa shared that within the Facebook groups she participates in,

> People are constantly posting things like, 'Hey, how did you handle when you had a student like this?' or 'Do you have any suggestions for particular books for read alouds or for particular math topics?' People will share resources and provide feedback in terms of, 'Oh, well this worked for me. This didn't work for me.'

Lydia agreed, as she explained how she likes to use Facebook because "I can find some great specific first grade materials and teachers to connect with and ask questions." This ability to find a specific niche on Facebook was important to these teachers.

Groups Provide Camaraderie and Combat Isolation

Facebook groups were also seen as filling a void that may be present within schools. Hailey attributed these groups with promoting a sense of belonging. She said they give teachers:

> that camaraderie that teachers don't always have because it can feel a bit like working in silos in your own classroom, especially if your school doesn't have a supportive structure for collaboration. I think a lot of teachers are looking for support from other people in the profession.

Hailey expressed gratitude that these opportunities were available through Facebook.

For teachers who feel isolated due to their position, Facebook groups were also valuable. Melissa, who teaches math in a departmentalized grade level, explained:

> For me, social media became a great place for [collaboration] because it's also different being a specialized teacher, collaborating with someone who's also specialized versus some who's self-contained and teaches everything, because in terms of experience and terminology and stuff, things tend to flow faster.

Teachers who have specialized knowledge due to their position or circumstances are able to connect and support one another through Facebook groups.

Groups Facilitate Better Discussion Than Other Platforms

The format of Facebook groups allows for threaded discussions where one person can post a question or topic, and people can reply on the comments. While that is also possible on Twitter and Instagram, people seemed less likely to engage in the discussions on those platforms. Melissa shared that she saw this as a unique benefit of Facebook versus Instagram. "If you post something or somebody asks a question, there tends to be a discussion in the comment section .... That doesn't really happen so much on Instagram."

Twitter Was Viewed as the Best Platform for Interacting with Authors

Elementary teachers often incorporate children's literature, whether picture books or longer texts, into their lessons. As a result, some teachers like to connect with authors to see their current projects or show how the author's texts are being used in the classroom. Lydia extolled this as one of the primary benefits of Twitter. She said, "Twitter is kind of the place where I can go and ask questions, connect with authors and illustrators, get prepared to meet people at conferences, and also [connect] with vendors

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too." She then contrasted those experiences with her interactions on Facebook and Instagram, which fulfilled other needs.

Twitter also allowed Courtney, a classroom teacher turned media specialist, to describe a related experience she found professionally exciting:

> Kids randomly created a book trailer for a Judy Blume book. I threw it up on Twitter because I thought it was cute. I tagged her in it, not even thinking, and she wrote back and favored it. I was like, 'It's Judy Blume!' ... And then kids get super excited about that real author just liked what I did and saw what I did.

She saw these interactions as a way to humanize authors and illustrators for young people, and she felt validated that they were able to share the joy in her students' work.

Instagram's Visuals Facilitate Easy Interest-Based Learning

Melissa, who uses both Twitter and Instagram, sees the visual aspect as a significant relative advantage of Instagram. She explained:

> I [shifted from Twitter towards Instagram] because of the changes that Instagram and Facebook have made in terms of ways to collaborate .... [With] Twitter, if you're trying to follow along with a discussion or whatever, it's a lot of reading. It's not that people don't want to read comments or get information, but it's a lot easier to access it when it's visual or it's being orally presented to you.

Melissa then described a relatively new feature of Instagram called InstaStories, which allow short video posts in addition to photos. She described, "When you follow people on Instagram, if they have InstaStories, people will present and do like mini PDs through their InstaStory. It's easier to access, and it's easier to kind of keep up with." Melissa

viewed this as an easy form of informal learning because she could drop in on anything that seemed interesting or move on if she felt like it didn't apply or interest her.

Hailey also expressed a preference for Instagram. "I just like scrolling through pictures and seeing things that look interesting and then through that, maybe visiting their blog to read. But mostly, a picture-based social media platform is my preference." Such visuals allowed the teachers to be more selective in what they read, scanning first to see if the visual grabbed their attention before deciding whether to read. This contrasted with other platforms that frontloaded the reading to determine relevance.

Accessing Inspirational Thought Leaders

For elementary teachers experiencing difficulties, social media can provide critical daily doses of encouragement. Emma, who was experiencing several challenges as a beginning teacher, found inspiration by following social justice leaders who were working in schools. She explained, "I don't think I would have access to that as much without social media because I'm definitely not the type of person to sign up for a newsletter from them or a blog." She appreciated the ability to sign onto a platform to get quick snippets of information and encouragement whenever she needed that.

Lydia also viewed social media as an opportunity to find inspiration and motivation as a teacher. She shared:

> I think it's good to see ... positive things happening in schools, because sometimes all we see is negative. So, I get to see the good stuff that's happening and the changemakers and the hot new books for my young readers, but then also, for myself, to make myself a better teacher.

In this way, Lydia felt like her interactions on social media were helping her to become more effective as a teacher.

While Emma and Lydia found inspiration from seeing what other people posted, Hailey described how teachers can sometimes find inspiration in small gestures. She shared that some of her most well-received posts were ones that showed "teachers as real people and not teachers as perfect workaholics." She added that "when you're scrolling through, and you're seeing only the cutest classrooms and the cutest posts, it's just overwhelming." She identified herself as a person who derived inspiration and rejuvenation from sharing and seeing the imperfect sides of teaching.

Platform Choices Affecting Outcomes

Some teachers who are multi-platform users may choose to post the same content across multiple platforms. Lydia shared an example of this, describing a post about the importance of independent reading that she shared to both Twitter and Facebook. The initial content was identical across both platforms, but the types of responses varied. She explained:

> I received several retweets on Twitter along with people agreeing about the importance of it. And then I also shared it on my Facebook page where people completely agreed, but then a few asked questions about, you know, what do you do with the kids who don't read independently when they're supposed to, which I thought was a valid question. And so, we were able to have a good conversation about it.

While Lydia received positive feedback on both platforms, she credited Facebook and not Twitter with facilitating deeper discussion.

In addition, teachers may calculate that a certain type of response is more likely from one platform over another. Although Melissa prefers Facebook and Instagram, she sometimes posts to Twitter when she wants to connect with specific users. For example, she highlighted a Twitter post with specific student work, and explained:

> I was trying to create a collaboration or connection with other teachers in the county because I tagged my county's math department. My goal was if the county had retweeted it or liked it, then I would create an opportunity for me to collaborate or connect with other teachers in the county.

But Melissa added, "It wasn't necessarily super successful in doing that." Regardless of whether it was successful, Melissa knew that she was more likely to connect with those specific users on Twitter than the other platforms, and that guided her platform selection process.

Building Consistent Learning Interactions

All six interview participants were Facebook users, and they all claimed to check Facebook at least once a day. Melissa illustrated this best when she described how she used Facebook the most consistently of all the platforms. She explained:

> I think a lot of that just has to do with the fact that I'm using it for interacting with ... friends and family ... because I'm using my personal accounts. On Instagram and Twitter, I have my professional accounts. Then I have to purposely choose to switch over to that platform.

Since Melissa was already scrolling on Facebook to check on friends and family, she often stopped to read or participate in a discussion whenever a group post in one of her

teacher groups caught her attention. Participation on the other platforms, while still a regular occurrence, had to be a more conscious decision.

Downsides to Social Media Use

When asked whether there were any downsides to using social media, responses organized around three main themes: time, comparing oneself to others, and spreading misinformation. None of these criticisms were uniquely targeted toward a particular platform.

Time Constraints vs. Overwhelming Volume

Multiple teachers shared that time constraints could be a significant downside to engaging with social media. Karla described it as getting "pulled into a rabbit hole [where] you spend way more time on it than you thought you were going to originally." Similarly, Courtney described the feeling of being "inundated with stuff" and how the "volume can get a little overwhelming." She wished that she had more time to engage with social media, but she proactively tried to dedicate a set time each week to read as much as possible within that time window.

Lydia also shared a sense of guilt over not being able to keep up with everything that was happening on her social media channels. She explained that "Using [social media] is a big time sucker, which is hard because you do want to check it and be on top of it, but there are other things that we need to be doing." In a career that places so many demands on teachers' time, social media use often fell to a lower level of priority and experienced less participation than these teachers had hoped.

Distorting Reality and Disturbing Comparisons

A common criticism across all social media, but especially Facebook and Instagram, was the idea that the platforms promoted unrealistic images of teaching and schools. From picture-perfect classrooms to posts overselling the benefits of practices due to commercial interests, the teachers interviewed expressed concern that social media can have negative effects on some teachers' mental health and self-efficacy.

Generating Feelings of Inadequacy

For inexperienced teachers who are new to the profession or teachers who are struggling with specific elements of teaching, seeing images of teachers showing what Hailey described as "only their best or cutest" can be detrimental. Melissa explained this phenomenon:

> There are a few very prominent Instagrammers or Facebook group users that are very picturesque. And I've seen the negative side of things that people feel like if they're not doing everything or anything as great as what they're seeing on Instagram or on Facebook, that it can negatively affect self-esteem in terms of professional practice.

Lydia described this as an example of "keeping up with the Joneses," acknowledging that some images create pressure to compare oneself to other teachers and what they're able to accomplish.

Hailey was particularly concerned about the role such images play in shaping expectations for beginning teachers. She shared, "Especially I see a lot of first year teachers commenting on ... the cutest posts and saying, 'How do you have the time to do this? I wish I could do this!'" She worried that bombarding new teachers with such

images could hasten "disillusion" with teaching among those who don't immediately recognize that classrooms rarely stay so picturesque.

Hidden Commercial Agendas

With the rise of teachers selling lessons on sites like TeachersPayTeachers.com, Hailey was skeptical about the motives of some of the posts she had seen on social media. She shared that there is an "'everybody is an expert' type of idea, which is empowering for educators because we *are* professionals, and many times, we're not treated as such within our school. But…it can lend itself to the spread of misinformation." She was especially sensitive to this when teachers promoted brands or products. Hailey shared that "you always wonder if it's in good faith—if it really is a product that would be beneficial to teachers, or if they're simply using that platform to benefit themselves."

Lydia echoed that skepticism: "Some of it's just like phony baloney. You know, like the edu-superstars or the teachers who are posting stuff that you know isn't really impacting the way they say it is." As a result, Lydia was careful not to give too much credibility to some of the posts she saw from other teachers.

Privileging Resource-Rich Schools

While it is incredibly important to be aware of the tremendous inequities that exist among schools and communities in the United States, social media can highlight resource disparities in a way that some teachers may find demoralizing. Emma, who was a beginning teacher in an impoverished Minnesota charter school, didn't fully recognize how resource-deprived her school was until she started comparing her school to ones she saw on Instagram. She recounted:

I would see these schools where they have a resource room where you can go in

and get nice fancy pens, or tape, or Expo markers or printer paper whenever you

need them. And my school doesn't have that. And so, it just became really

disheartening to see these beautiful classrooms .... It really started to make me

think about why are [my students] deserving of less—so little that their teachers

are not provided post-it notes or chart paper or Expo markers?

As a result, Emma began to recognize external funding barriers beyond her control that

created an extraordinarily unlevel playing field.

Emma's experiences witnessing resource disparities on social media were not

limited to the beautiful, well-stocked classrooms she saw on Instagram. She also shared

examples of what she called "shit-posting" in Facebook groups where teachers would

complain about students or circumstances. In one example, she described a post of a

teacher complaining about students' behavior, and she recounted:

the behavior at my school, because of the lack of resources, is like exponentially

worse. And so that comparison is like, 'Wow, it must be nice to be in a school

where throwing a pencil will get you a call home' because we have at least eight

to 10 fistfights throughout the day in sixth grade or kids stomping on textbooks

and swearing at teachers, and they don't get any consequences .... I don't want to

say [that type of post] creates resentment, but it is a little bit of jealousy.

As a result, Emma has taken a different approach to her social media use, and she often

posts images or content "to make people aware of the disparity in the education system."

But she laments that the reaction is often that people "think I'm just being dramatic."

The Role of Keyboard Warriors

While none of the interview participants shared examples where they felt personally attacked on social media, many acknowledged this potential downside. Karla, recalled seeing it happen to others. She shared that "it's very easy to get pulled into random drama .... I've seen educators that pounce on another educator because of something they say." Karla expressed empathy for this teacher, sharing that as a teacher, "you already feel alone in a lot of things, and then people are making you feel worse than you already did." These negative interactions were seen as a unique drawback to social media where discussions often happened between people who did not know each other offline and where they were text-based and therefore subject to more misinterpretation.

Perceptions Overall Positive Despite Downsides

Despite the drawbacks described above, half of the interview participants volunteered an overall assessment that leaned in favor of social media use, and two others spent more interview time discussing their perceived benefits than the drawbacks. Karla ended her discussion of the downsides of social media with a comment that "there are more benefits than downsides," and Hailey shared that "the benefit outweighs the bad." She went on to say that "it's nice to be able to connect with other teachers, and [that connection is] something that's been missing from education for a long time." Lydia also described social media as a "world of opportunity [to] connect with other people and learn and get better." Therefore, elementary teachers are likely to continue using social media to connect with each other despite its downsides.

Valuing Sharing and Authenticity

All six of the interview participants reported consuming far more teaching-related social media content across the various platforms than what they produced themselves. For some teachers, this was a source of frustration as they aspired to give back more to other teachers. But they also wanted to be sure that any contribution they made was authentic and helpful to others.

Aspiring to Share More

Half of the teachers interviewed expressed aspirations to share more to the social media platforms they participated in. Courtney, for example, seemed to feel a bit guilty about taking more than she was giving. She described her goals, and explained, "I'm trying to work towards being more active myself and sharing more myself instead of just passively watching other people and grabbing what they're doing." She wanted to return the favor to other teachers with similar interests.

Melissa and Karla, both veteran teachers with several years of experience, acknowledged that much was happening in their classrooms that could be shared on social media, but they didn't always post. As Melissa expressed:

> I've done really great activities and things, and I've had the like, 'Oh, I should've taken a picture of that while I was at school' thing, or, 'Oh, I should've posted a picture of the anchor chart to share with people.' It's a second thought. It's not always in the forefront of my mind to take pictures and to share them or to tweet about it, so I end up just saving lots of things from other people versus doing as much of the sharing of my own things.

Karla echoed a similar sentiment. She explained, "There's probably a lot of times that I could have shared something that I was doing in the room… and maybe I should have, but it's just not something that's at the forefront of my mind." Karla went on to say that if she were a younger teacher, she would probably do more to document and share more of her teaching, but at this stage of her career, it was more of an afterthought. Still, these teachers saw significant value in sharing ideas with others, and they wanted to contribute.

Altruistic, Not Approval-Seeking

While some of the teachers interviewed aspired to share more on social media, they seemed altruistic in their reasons for doing so. They contrasted themselves with teachers who were considered "Influencers." Lydia explained:

> I'm not [posting to social media] for post likes or to try to gain a bigger audience.
> I really try to keep it authentic and keep my audience engaged because they want
> to be there and not because they're trying to get my attention.

In that way, Lydia felt like she was being respectful of the needs of the teachers who were following her.

This authenticity was also important to Karla, who identified herself as "more of the person who goes [to social media] seeking answers. Sometimes I will have an answer that I can help out with…. But I'm not somebody that does things for an audience most of the time." She also explained that she felt purposeful about her social media use. Karla said, "I'm not one that feels like I have to be connected to social media all the time. I don't feel like I need others to validate what I'm doing." She wanted her contributions to be helpful, but she didn't worry about how others might receive them.

This desire to do what would be most helpful to other teachers came up in Melissa's interview as well. She explained:

> The more we do to share, and the more we do to collaborate across the country, improves the education and the impact on students outside of the kids you see day to day. For me, social media is a big way of doing that. I have people across the country [who] are able to help me, which in turn helps my students, and I want to be able to do the same for other teachers.

In this way, sharing through social media was seen as a way of bettering education everywhere, extending the individual impact of teachers.

Summary of Interview Findings

The interview responses confirmed that elementary teachers use multiple social media platforms to supplement the professional learning they experience or lead within their schools. When deciding which platforms to use, the elementary teachers were motivated by convenience, privacy protections, and the purposes guiding their interactions. All the teachers were able to identify benefits and drawbacks to using social media for informal learning, but their overall perception of social media was positive. The teachers interviewed saw significant value to teachers sharing with each other through social media when done for authentic and altruistic reasons.

The next chapter identifies common themes presented through both the questionnaire and interview portions of the study.

CHAPTER 6

BUILDING THEMES

The purpose of this netnography was to explore how elementary teachers

participate in informal professional learning across multiple social media platforms. The

researcher believed that examining holistic social media practices could provide a deeper

understanding of teachers' tendencies and create opportunities for more effective

informal learning.

This chapter builds themes from the findings of the questionnaire data and semi-

structured interviews to work toward a deeper understanding of the research question:

How do elementary teachers describe their use of social media for informal professional

learning?

Until this study, limited research has looked holistically at elementary teachers as

social media users. As elementary teachers use more social media platforms to interact

with and learn from other teachers online, it is important to look at the big picture of their

overall practices rather than focusing on a single social media platform like Facebook,

Twitter, or Instagram.

Chapter 4 presented findings from 287 online questionnaires completed by

elementary teachers in November 2018. These questionnaires included both open-ended

and closed-ended questions, resulting in analysis through descriptive statistics and

inductive coding of qualitative responses for themes. Table 6.1 provides a summary of

the major and related findings from the questionnaire portion of the study.

Table 6.1

Major and Related Findings from Questionnaire Data

Major Findings	Related Findings
Elementary teachers on social media are multi-platform users.	• Use of a single platform personally may not predict professional platform choice. • Use of a single platform professionally often overlaps with personal uses.
Elementary teachers may differ in their platform choices for personal vs. professional social media use.	• Facebook, Instagram, and Pinterest are popular in both use contexts. • Only three platform categories experienced more professional than personal use. • Snapchat is not widely used for professional purposes.
Elementary teachers are purpose-driven when selecting platforms.	• Facebook is the overwhelmingly preferred platform for advice seeking. • Pinterest is the preferred app for collecting and organizing resources. • Elementary teachers find classroom inspiration on Pinterest. • Pinterest is the preferred platform for finding lesson ideas. • Facebook is overwhelmingly chosen for giving or receiving emotional support. • Several platforms may be useful for uncovering new ideas in education. • Reflecting on personal teaching practices most likely happens on Facebook.
Many factors drive teacher preferences regarding particular platforms.	• Accessibility and ease of use matter most to elementary teachers. • Social media is valued for connecting groups of teachers with common interests. • Elementary teachers value Instagram most as a source of inspiration. • Resource sharing is valued across several social media platforms. • Instagram and YouTube appeal most to those who value visuals.
Personal experiences deter elementary teachers from using platforms.	• Some platforms are viewed as lacking purpose for elementary teachers. • Lack of familiarity informed platform preferences. • Platform features affect elementary teachers' preferences. • Perspectives on resource quality and time constraints influence teacher preferences. • Other factors can influence negative feelings toward platforms.

The study's questionnaire findings provided a more holistic look at the social media

practices of elementary teachers.

Chapter 5 presented findings from six semi-structured interviews with elementary

teachers conducted throughout the summer and fall of 2019. One interview was

conducted face-to-face, and the remaining interviews were conducted online through

Skype, Google Hangouts, and Flipgrid. Those interviews were transcribed and analyzed

for major themes. Table 6.2 provides a summary of the major and related findings

uncovered through the interview process.

Table 6.2

Major and Related Findings from Interview Data

Major Findings	Related Findings
Professional learning opportunities are often limited in duration and scope.	• Professional learning is often provided by outside entities. • Some sessions focused more on logistics than professional knowledge. • Professional learning for elementary teachers focuses heavily on math and literacy topics. • Some interview participants were responsible for leading professional learning at their school.
Multiple factors drive teachers to use social media for professional purposes.	• College coursework pushes some elementary teachers to adopt social media. • Some professional uses evolve from personal uses. • Some teachers experiment with emerging social media platforms as early adopters. • Multiple adoption routes make social media pervasive for elementary teachers.
Elementary teachers perceive several benefits to social media use on different platforms.	• Social media expands the depth of elementary teachers' learning networks. • Facebook groups allow collaboration on specialized topics. • Twitter is the best platform for interacting with authors. • Instagram's visuals allow easy interest-based learning. • Social media generally allows more access to inspirational thought-leaders. • Choice of platform can affect the types of responses received. • The personal draw of Facebook facilitates more consistent interactions with other teacher groups.

Table 6.2 (continued).

Elementary teachers acknowledge several downsides to social media.	• The volume of social media posts can be overwhelming and time-consuming. • Social media posts may distort reality and create upsetting comparisons between teachers and schools. • Teacher influencers may promote misinformation. • Despite these drawbacks, the perception of informal learning through social media is overall positive.
Elementary teachers value sharing and authenticity on social media.	• Many teachers aspired to share more on social media. • Sharing was generally seen as an altruistic practice rather than an approval seeking one.

The study's interview findings provided a deeper and more nuanced layer of understanding than the questionnaire data alone.

This chapter provides the major themes derived from the findings of the 287 online questionnaires presented in Chapter 4 and the 6 interviews with elementary teachers presented in Chapter 5. Five major themes emerged from this study:

1. Elementary teachers use a variety of social media to fill gaps in their school-based professional learning opportunities and perceive significant benefits from these interactions.

2. Elementary teachers on social media are not only multi-platform social media users, but they often have multiple accounts on a single platform.

3. Platform preferences vary between personal and professional uses and may be heavily influenced by privacy concerns.

4. Elementary teachers are purpose-driven when selecting social media platforms, discriminating between platforms based on individual needs and platform-specific expectations.

5. Elementary teachers are concerned with several aspects of social media use, but they still perceive these learning opportunities as net beneficial.

The remainder of this chapter will examine each theme and the connections between the questionnaire and interview data that support each theme.

<p align="center">**Themes**</p>

Theme 1: Elementary Teachers Use a Variety of Social Media to Fill Gaps in Their School-Based Professional Learning Opportunities and Perceive Significant Benefits from These Interactions

The teachers who were interviewed identified several limitations with their existing school-based professional learning opportunities. One such limitation was that the professional development was provided by outside entities who did not work in the school or through conferences, which meant the learning opportunity was limited in duration. This limitation also made it more challenging to get follow-up information when new practices were being implemented in the classroom.

Both the interview participants and the questionnaire respondents reported turning to platforms such as Facebook to seek advice and ask follow-up questions when teachers needed additional support that wasn't provided in the formal professional development session. The responsiveness of these platforms and diversity of experiences among their participants allowed teachers to get the just-in-time support they needed to determine next steps in the classroom.

The emphasis on math and literacy was identified as another limitation of existing professional learning opportunities at the elementary level. While these subjects are the instructional core of any elementary school, they aren't necessarily relevant to every

teacher—especially when teachers have unique positions such as the music or physical education teacher or when teachers are departmentalized within their grade level. Moreover, implementation of some of these math and literacy practices may look very different across grade levels as teachers implement standards requiring varying depths of student knowledge.

As a result, social media platforms such as Facebook, Instagram, and Pinterest allowed elementary teachers to access huge job-alike communities where they could share their specialized knowledge with other similarly situated teachers. Participants in both the questionnaire and the interview described how this helped them combat the isolation that comes with having a specialized position within a school.

Finally, the interviews demonstrated that some teachers have a very specific need for access to outside experts on different topics. Several of the teachers interviewed reported being responsible for leading professional learning sessions at their own schools. This meant that they were considered the local expert on their topics. Given such expertise, these teachers had to look beyond their school to deepen their knowledge. Whether it was finding answers to specific questions or uncovering new resources or ideas, these teachers benefitted from developing their network with similarly motivated interest groups through several social media channels.

Theme 2: Elementary Teachers on Social Media Are Not Only Multi-Platform Social Media Users, But They Often Have Multiple Accounts on a Single Platform

The vast majority of participants in this study identified themselves as multi-platform social media users, having accounts on at least Facebook and Instagram, and many expanded to Pinterest and Twitter as well. The median number of platforms used

for professional purposes among the elementary teachers in this study was 3 while the median number for personal use was 4. Even when teachers limited their social media use for personal purposes like keeping in touch with family and friends, they were still likely to use multiple platforms to connect with other teachers for informal learning. As a result, it is likely that one could find a significant teacher presence on most of the major social media platforms such as Facebook, Instagram, Pinterest, and Twitter.

The interviews deepened our understanding of how teachers not only use multiple social media platforms, but also may have multiple accounts within a single platform. Instagram and Twitter were uniquely suited for this, allowing teachers to adjust their privacy settings and content to cater toward specific purposes or audiences. For example, Lydia shared how she used one Twitter account to communicate with parents, students, and other school district stakeholders, and she had a separate account to communicate with other teachers and pursue teaching-related interests.

Similarly, Hailey mentioned having one Instagram account for sharing photos with her close family and friends, and another account for interacting with other teachers. This allowed these elementary teachers to fragment their identity in ways that they believed would satisfy their professional needs while maintaining an appropriate level of privacy for their students and their personal lives.

Theme 3: Platform Preferences Vary Between Personal and Professional Uses and May Be Heavily Influenced by Privacy Concerns

Facebook was by far the most ubiquitous platform for both personal and professional use across both data types. It was frequently heralded for its special interest groups such as grade-alike groups that facilitated discussion and resource sharing among

similarly situated teachers. On the other end of the spectrum, teachers from both the questionnaire and interview respondents reported using Snapchat personally, but they did not see it as a useful tool for informal learning because connections were typically with people the user already knew in real life and posts disappeared within 24 hours. These examples demonstrate that personal use of a platform may not predict its use professionally. Instead, other factors like the features within the platform help teachers evaluate whether the platform is potentially beneficial for learning purposes.

Privacy considerations were a factor that frequently came up in both interviews and the open-ended questionnaire comments. Emma went into great depth about the lengths she went through to protect her privacy and maintain her authority as a teacher once she decided to become a teacher. Hailey and Lydia also scrutinized their own social media posts to make sure they were protecting student privacy and representing themselves well professionally. Questionnaire comments also highlighted the importance of relative anonymity. One teacher, for example, shared that "[Instagram] is a platform where I can be the most vulnerable and personal. My other social media is more public, and I am much more conscious about what and how I post." Because teachers don't have to use their real name or other identifiable features on Instagram, the platform may facilitate more authentic sharing.

Meanwhile, others mentioned private Facebook groups that were not accessible to non-members as being a source of "open and honest" conversation about the realities of teaching. They valued that they could be surrounded by like-minded peers, and they felt that they could share more vulnerability to a sympathetic audience in these groups as parents and other stakeholders were unlikely to see the posts. These examples all

demonstrate that elementary teachers are uniquely concerned with many elements of privacy when sharing online, and these concerns inform their decision-making.

Theme 4: Elementary Teachers Are Purpose-Driven When Selecting Social Media Platforms, Discriminating Between Platforms Based on Individual Needs and Platform-Specific Expectations

This study clearly demonstrated that there is no one-size-fits-all social media platform for elementary teachers. While Facebook was the preferred platform across questionnaire and interview respondents for advice seeking, giving or receiving emotional support, reflecting, and discussing teaching-related topics, it still had several limitations. Instagram, for example, was more preferred by several participants for gazing into classrooms and seeing practices that were aligned to the individual teacher's interests. The ability to scroll through pictures rather than text appealed to several teachers who considered themselves more visual, and it was one of the platforms considered most useful for uncovering new ideas in education.

Pinterest, meanwhile, was the preferred platform among the questionnaire respondents for curating and organizing resources and finding specific lesson ideas or classroom inspiration. The ability to organize findings easily for future retrieval was a feature that was perceived as missing from the other platforms. As a result, the learning gleaned from Pinterest was more accessible over the long-term while other platforms facilitated learning that tended to be more incidental.

Both interview and questionnaire respondents viewed Twitter as fulfilling a unique niche in sharing articles, new research, and connecting with people outside of education such as authors and vendors. While other studies have examined the use of

Twitter chats for teacher discussion and informal learning, that did not seem to be a prevalent interest among the elementary teachers involved in this study. Instead, their use of Twitter seemed to be more targeted toward a particular audience and need (e.g., Hailey reaching out to district leaders and teachers she knew to be active on Twitter) rather than an ongoing practice.

The responses in this study also demonstrated that teachers had different expectations for interactions based on the platforms chosen. Lydia's example of posting the same content on multiple platforms was illustrative. The success of the post on Twitter was measured in retweets and likes with minimal replies. On Facebook, on the other hand, the same content generated deeper discussion and questions. Similarly, teachers expect to scroll through pictures on Instagram and Pinterest, occasionally liking or saving content, but rarely discussing it.

All these platforms may benefit teacher learning, but their mechanisms operate in different ways, and teachers consider those features when selecting which platform will best meet their needs for a given problem of practice. This helps explain why teachers tend to be multi-platform social media users when finding materials beneficial to them professionally.

Theme 5: Elementary Teachers Are Concerned with Several Aspects of Social Media Use, But They Still Perceive These Learning Opportunities as Net Beneficial

Questionnaire and interview respondents identified several downsides to social media use for informal learning. Common themes across both data sources included time, pressure, misinformation, and negativity.

Information overload was a real concern among the participants in this study. Several described the "rabbit hole" that social media creates, and the time spent scrolling through tons of content to find something useful. That likely connects to the finding that teachers prefer the platforms that are most accessible and easiest for them to use as individuals. Given time constraints, many elementary teachers felt that they had to be mindful of how they spent their time online and often perceived that they were missing out on some of the advantages these learning platforms could provide. This was especially evident in Courtney's interview where she described how she always learned new ideas from her social media channels but didn't visit them nearly as much as she wanted to.

Pressure to keep up and maintain a picture-perfect classroom was another concern shared through both the questionnaires and interviews. Because images on social media may be staged to highlight elementary classrooms at their "cutest" or to shine the best possible light on the efficacy of teaching practices, participants shared that constantly seeing this content could generate feelings of inadequacy as a teacher or promote upsetting comparisons between classes, schools, and districts and their available resources.

Teachers shared a level of skepticism over whether they could believe all that they saw on social media, and Hailey, in particular, emphasized the importance of being firmly rooted in one's individual teaching pedagogy before seeking information or resources from others online.

Hailey's concern with the promotion of misinformation or ineffective teaching practices was also connected to concerns with monetization. Participants in both the

questionnaire and the interviews mentioned the rise of "teacher influencers" who were using social media channels to market their own teaching materials. Pinterest links often drove users to paid materials on the site TeachersPayTeachers, and both Hailey and Lydia expressed concerns about whether teachers were sharing ideas that were genuinely beneficial to students or if they were just seeking to supplement their personal incomes. There was a concern among several participants about the rise of "teacherpreneurs" attempting to market themselves and influence educational trends.

Finally, some teachers in both the interviews and questionnaires expressed concern with the unbridled negativity that could infiltrate social media groups, especially on Facebook. Teacher pages were often used for venting and complaining about students or work conditions, and some users found that negativity demoralizing. Karla also described how teachers sometimes "pounced" on posts and "piled on" teachers who may already be struggling. In this way, the relative anonymity provided by social media could be perceived as a downside because it heightens the spread of negativity among teachers.

Despite the downsides of social media, participants in both the interviews and the questionnaires suggested that the benefits of social media use among elementary teachers outweighed the downsides. Half of the interview participants stated this explicitly, revealing a high level of optimism for the ability of social media to improve the quality of teaching practices across the country. It is also worth noting that the open-ended questions about the most preferred social media platforms and their features received 46 more responses than the questions about the least preferred platforms. This suggests that the teachers in this study were more focused on the benefits than the downsides of social media use.

Chapter Summary

This chapter described the major themes that emerged from the elementary teachers' responses to questions describing how they use social media for informal learning. The five major themes explored in this chapter were:

1. Elementary teachers use a variety of social media to fill gaps in their school-based professional learning opportunities and perceive significant benefits from these interactions.

2. Elementary teachers on social media are not only multi-platform social media users, but they often have multiple accounts on a single platform.

3. Platform preferences vary between personal and professional uses and may be heavily influenced by privacy concerns.

4. Elementary teachers are purpose-driven when selecting social media platforms, discriminating between platforms based on individual needs and platform-specific expectations.

5. Elementary teachers are concerned with several aspects of social media use, but they still perceive these learning opportunities as net beneficial.

The findings that led to each of these themes were discussed.

The study's data analysis developed a better understanding of how elementary teachers describe their experiences using social media for informal professional learning. Rather than focusing on individual platforms, the study took a holistic view of social media to uncover larger patterns and preferences in teacher activity.

The final chapter discusses these findings in relation to the current literature about teachers' informal learning through social media. It also explains how this study makes valuable contributions to the field and outlines opportunities for further research.

CHAPTER 7

DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

The purpose of this netnography was to explore how elementary teachers participate in informal professional learning across multiple social media platforms. It sought to answer the research question: How do elementary teachers describe their use of social media for informal professional learning? The researcher believed that examining holistic social media practices could provide a deeper understanding of teachers' tendencies and create opportunities for more effective informal learning.

A substantial body of literature has documented the shortcomings of formal teacher professional learning opportunities. Problems with formal professional development include being too brief, poorly timed, lacking in follow-up, and considered not useful to addressing the challenges teachers actually face (Darling-Hammond et al., 2009; Opfer & Pedder, 2011; Tour, 2017). As a result, more teachers are taking ownership of their own learning and engaging in self-directed learning online (Prestridge, 2019; Trust, 2017). This may be especially true in contexts where teachers feel isolated due to a specialized role or limited relationships with colleagues (Goodyear et al., 2019). Such self-directed learning can be considered "informal learning" because it tends to be more spontaneous and unconscious than more traditionally designed learning endeavors (Kyndt et al., 2014).

Informal learning endeavors through social media create the potential for development of online PLNs (Kelly & Antonio, 2016; Krutka et al., 2016; Visser et al.,

2014). Swanson (2013) found that teachers perform three major activities in online spaces: curation of resources, reflection on practices, and contribution of ideas to others. In addition, Hur and Brush (2009) identified five reasons for teacher participation in online communities: (1) sharing emotions, (2) harnessing the advantages of online environments such as anonymity, asynchronous conversations, and outside ideas, (3) combating isolation, (4) exploring new ideas, and (5) experiencing a supportive community (pp. 290–291).

Subsequent studies have further explored how these characteristics play out on different platforms such as Twitter (Greenhow & Galvin, 2021; Nochumson, 2021), Instagram (Billen, 2015), Pinterest (Carpenter et al., 2016; Lundgren et al., 2021), and Facebook (Nelimarkka et al., 2021; Ranieri et al., 2012). Looking across that literature, Greenhow et al. (2018) found two major themes in how teachers use social media in their professional learning. First, social media provides an important source of needed emotional support and identity development. Second, teachers value autonomy in their professional learning efforts, hence the drive toward self-selected online spaces.

Despite those common themes, existing research has not given much consideration to what is being said across different social media platforms by individual users (Carpenter & Green, 2018). Most of this research has engaged in categorical thinking to group the content of posts while taking for granted the idea that the posts make positive contributions to informal learning.

Given that the average adult social media user regularly engages with at least three platforms (Smith & Anderson, 2018), this inattention to the habits of individual users presents a significant gap in the literature. After all, if elementary teachers were

able to achieve emotional support, identity development, and autonomy from their interactions on a single platform, then participation on multiple platforms would seem unnecessary. Single-platform studies are therefore missing elements of how teachers are integrating these opportunities to further their learning.

This study was important because it addressed a gap in the literature relating to the ways that elementary teachers use a variety of social media platforms synergistically to meet different teaching-related needs. The combination of questionnaire data and semi-structured interviews provided a more holistic view of the factors shaping elementary teachers' decisions to use specific platforms.

This chapter summarizes the research design and discusses the major themes from Chapter 6 in relation to current research and the theoretical frameworks identified in Chapters 2 and 3. The chapter then identifies implications for research, policy, and practice before presenting concluding thoughts.

Summary of Research Design

This study used a qualitative netnographic approach to examine elementary teachers' practices and perspectives in using multiple social media platforms for informal learning. The purpose of this netnography was to seek "to understand the cultural experiences that encompass and are reflected within the traces, practices, networks and system of social media" (Kozinets, 2020, p. 14). The study used an in-depth questionnaire comprised of both open and closed-ended questions relating to social media use practices among the 287 elementary teachers who participated. The study then followed up that research through semi-structured interviews with six of the respondents

to gain a deeper understanding of the factors driving elementary teachers to use different social media platforms.

The conceptual framework for this study was based on the concepts of networked individualism (Rainie & Wellman, 2014) and affinity spaces (Gee, 2004; Gee & Hayes, 2011). These frameworks helped to explain how teachers can leverage online spaces for informal learning.

Networked individualism proposes that all actors have social capital made up of "the resources embedded in social relations and social structure which can be mobilized when an actor wishes to increase the likelihood of success in purposive action" (Lin, 2001, p. 24). Those relationships and structures affect the means available to bring about change, either constraining actors or providing additional opportunities that would otherwise not exist (Borgatti & Ofem, 2010). When people participate with social media, they make choices about which parts of their network to access (Rainie & Wellman, 2012), shaping their opportunities and likely outcomes for learning.

Gee (2004) described these different spaces for leveraging specific networks as "affinity spaces" because participants are brought together based on shared experiences or interests. These may be organized around a hashtag or another computer-mediated grouping. They may not know each other personally, nor may they all communicate in reciprocal ways (Trust, 2017). But their shared practices, common interests, and problem-solving orientations offer valuable opportunities to potential learners (Gee, 2017).

Given that the purpose of this qualitative netnographic study was to understand how elementary teachers describe their use of social media for informal professional learning, the researcher used questionnaire data, social media posts, and interviews as

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data sources. Kozinets (2020) outlines five criteria for data selection: relevance, activity, interactivity, diversity, and richness (p. 227). These data sources fulfilled those criteria.

Questionnaire responses from 287 elementary teachers built a deeper understanding of patterns, activities, and preferences in teachers' social media use across several available platforms. The responses also demonstrated how professional use patterns may differ from personal uses. The 287 participants represented a diverse range of locations, years of teaching experience, and job titles. The questionnaire also invited participants to extend their participation to include analysis of their social media posts and involvement in semi-structured follow-up interviews. Thirty-four teachers agreed to participate in these opportunities.

Immersion in participants' social media posts informed interview questions and triangulated use patterns from the questionnaire data. Immersion also helped the researcher identify 13 teachers to invite to participate in interviews. These teachers were active on multiple social media platforms, and their posts tended to be mostly related to their experiences and interests as elementary teachers.

Interviews, both synchronous and asynchronous, developed a more complete understanding of how elementary teachers choose which platforms to use for informal learning. Six teachers participated in these interviews, with two participating in a synchronous online interview with the researcher and four others participating in asynchronous video interviews. Despite these different interview types, the data showed overlap in teachers' descriptions of how they integrate different platforms for informal learning.

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Data analysis occurred throughout the data collection process to inform later data collection processes. Once all data were collected, the researcher began netnographic integration: "an ongoing process of decoding, translating, cross-translating, and code-switching between parts and wholes, between data fragments and cultural understandings" (Kozinets, 2020, p. 142). The researcher used an inductive approach toward thematic analysis (Maxwell, 2013; Paulus & Wise, 2019). Through this process, data fragments were coded, categorized, and sorted through an iterative process that allowed revision and refinement of categories. This led to the development of themes for both the questionnaire data and the interview data. Once relevant themes from each data set were uncovered, the data sets were compared to look for overarching themes. Throughout this process, efforts were made to ensure the quality and trustworthiness of the data (Paulus & Wise, 2019; Tracy, 2010) while attending to ethical practices in online research (Markham & Buchanan, 2012).

This qualitative study was designed to understand how elementary teachers describe their use of social media for informal professional learning. The study led to several valuable findings that enhance our understanding of these practices.

Discussion of Major Themes in Relation to Current Research

The findings of this study align with much of the existing research presented in the literature review about teachers' uses of social media for informal professional learning. For example, the teachers in this study shared examples of how social media gave them the autonomy needed to find the information or support as needed (Greenhow et al., 2018; Prestridge et al., 2021). They didn't feel obligated to spend a fixed amount of time learning online but could instead follow their passions and leverage the constantly

available groups whenever needed (Kelly & Antonio, 2016; Krutka & Carpenter, 2016; Prestridge, 2019). Building on existing research, however, the study added more nuance to the particular habits of elementary school teachers. As generalists who may teach multiple subjects or spend their days with a single group of children, this study highlighted some of the ways their needs differ from other teaching populations.

This discussion section explores how the study's major themes relate to previous research on teacher social media use for informal professional learning.

Theme 1: Filling Gaps in Professional Learning

This study found that elementary teachers use a variety of social media to fill gaps in their school-based professional development opportunities and perceive significant benefits from these online interactions. This finding was consistent with previous research that suggested that school-based professional development does not always meet the needs of the teachers (Borko, 2004; Darling-Hammond et al., 2009; Kennedy, 2014a).

The teachers in this study identified a few specific challenges they were facing with professional development. First, many of their school-based opportunities were limited to single-event workshops, conferences, or staff development days. This format leaves many gaps in providing the ongoing, job-embedded learning opportunities that teachers need (Zepeda, 2018a). Prestridge (2019) describes how many schools still conceptualize professional development as a compliance-oriented representation of the school's agenda, leaving little space for self-directed learning.

Social media presents an opportunity for teachers to fill that gap to pursue on-going collaboration and inquiry with other like-minded teachers (Dabbagh & Kitsantas,

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2012; Prestridge, 2019). The teachers in this study reported doing this on a variety of topics specific to their classroom and the needs of their role.

The professional development emphasis on math and literacy presented a second challenge for some of the teachers in this study. In situations where teachers were assigned specific roles or responsibilities such as acting as a media specialist or coordinating a specific behavior intervention, the teachers couldn't rely on school-based professional development to fulfill their learning needs. This finding is consistent with previous research that teachers connect with subject and interest-specific communities through social media (Goodyear et al., 2019; Le et al., 2021; Trust, 2015).

Le et al. (2021) found that these communities were especially beneficial for teachers in more rural areas or under-resourced schools that may not have the same opportunity for collaboration as a larger school district. Given the diverse needs of elementary learners and classrooms, social media offered several avenues for support that went beyond what teachers were experiencing locally.

This study also highlighted the problems with one-size-fits-all approaches to professional development. Many of the elementary teachers in this study were considered local experts in a particular area of their practice. As a result, they were sometimes asked to lead professional development for their colleagues. While the teachers' expertise was valuable in those circumstances, their own professional learning needs were not being met within the schools. This finding aligns with Hoekstra et al.'s (2009) research about the diverse learning needs of more experienced teachers.

The examples of teacher leaders spearheading professional development sessions also aligns with Kennedy's (2014a) cascade model of learning where one teacher

acquires expertise that is expected to trickle down to other teachers through subsequent redelivery of the session. The problem with this model, evidenced by this study, is that there is not an internal source for teachers at the top of the cascade to deepen their understandings or to have their questions answered. As a result, social media plays an important role in fulfilling that need.

Theme 2: Multi-Platform Users

This study found that elementary teachers on social media are not only multi-platform social media users, but also they often have multiple accounts on a single platform. This finding expands Carpenter and Green's (2018) research that showed complementary social media uses between two different social media platforms, Twitter and Voxer. While prior research showed that many Americans identify as multi-platform social media users (Greenwood et al., 2016), this study expanded that finding to show that many elementary teachers identify as Facebook, Instagram, and Pinterest users. While some elementary teachers may also favor Twitter, as evidenced by Nochumson's (2021) study, that was a much smaller subgroup of this study's sample. This adds to the argument, however, that teachers' use of social media is highly idiosyncratic (Aguilar et al., 2021).

The understanding that elementary teachers often have multiple accounts on a single platform is an important contribution of this study. Recognizing the possibility of multiple accounts on a single platform deepens our understanding of teachers as multi-platform users, and it shows the lengths which elementary teachers are willing to go to create fragmented identities online, separating their professional identities from their personal ones. The idea of separate identities builds on Cho and Jimerson's (2017)

research about school administrators who try to enact roles online in accordance with who others think they should be. The elementary teachers in this study were similarly managing their identities. Emma, for example, eliminated some of her older social media accounts and created significant restrictions on the new ones she created. Likewise, Lydia shared different content through a parent-oriented Twitter account than she did in her teacher-oriented one.

This study also demonstrated the lengths that elementary teachers will take to manage their online identities—creating multiple accounts on a single platform to fulfill Kimmons and Veletsianos's (2014) concept of acceptable identity fragments. The term "acceptable identity fragment" reflects the recognition that teachers express themselves in a way they believe will be acceptable to their online audience, but through this process, they may censor aspects of their lives that don't necessarily align with their intended image (Kimmons & Veletsianos, 2014). Robson (2018) argued that these online identities could be seen as performances with teachers trying to enact an idealized self. The ability to create multiple accounts on a single platform further adds to teachers' abilities to manage those identities and maintain those performances.

Theme 3: Privacy Concerns

This study found that platform preferences vary between personal and professional uses and may be heavily influenced by privacy concerns. That teachers felt the need to protect their privacy comes as no surprise. Existing literature demonstrates how educators face added scrutiny in online spaces compared to other vocations (Kimmons & Veletsianos, 2014; Williamson, 2013). The teachers in this study were very concerned with protecting the identities of their students and monitoring themselves in

online spaces. Features like private Facebook groups and the relative anonymity of participation in some online spaces were valuable to elementary teachers as learners.

Privacy concerns may explain why so many teachers exhibit lurking behaviors. Trust (2017) classified professional learning network (PLN) engagement within four categories: *contemplators* who like reading and thinking about posts, *curators* who like collecting and organizing ideas and information, *crowdsourcers* who ask for specific information from an online community, and *contributors* who write or respond to posts. Trust and Prestridge (2021) built on this research to explain that participation in PLNs does not follow a linear pattern and that people may still be learning within a PLN even when they're not crowdsourcing or contributing. Lurking within these online spaces enables elementary teachers to access the professional learning they seek while maintaining privacy. These teachers could scroll through images on Instagram, search hashtags on Twitter, and read discussions in private groups on Facebook without anyone else ever knowing they had been there.

In addition to the four types of engagement proposed by Trust (2017), this study supports Prestridge's (2019) model of how teachers self-generate professional learning through social media. Prestridge (2019) classified teachers along axes of interactivity and social reasoning, explaining that some teachers are oriented toward themselves in building knowledge or seeking feedback and validation while other teachers are oriented toward others in trying to support colleagues or improve the profession. The interview participants in this study embodied elements of this. Lydia, for example, was what Prestridge (2019) would have classified as a vocationalist: someone who shared her expertise about reading with others on social media as a way to enhance the depth of

knowledge of other teachers. While she received feedback and validation from other teachers, this was not her primary motivation for sharing.

Hailey followed a similar path as she shared specific math resources and lesson plans. Karla, on the other hand, tended to waffle between being an info-consumer, a passive participant looking to fulfill her own learning needs, and a self-seeking contributor who would lurk until a specific question or need arose. The shifting patterns of online behavior confirmed Prestridge's (2019) finding that there may be lots of variation in how teachers use social media, but all orientations see the resulting learning as valuable with the potential to impact classroom practices.

Theme 4: Purpose-Driven Choices

This study found that elementary teachers are purpose-driven when selecting social media platforms, discriminating between platforms based on their individual needs and their expectations for results from specific platforms. This study confirmed previous findings that teachers are motivated to use social media in pursuit of individual professional goals (Carpenter & Krutka, 2014; Hur & Brush, 2009; Tour, 2019). The study added to that literature by describing the decisions that elementary teachers are likely to make in choosing among online platforms. For example, Kelly and Antonio (2016) described how social networking sites can serve as a source of peer support for teachers. Greenhalgh et al. (2021) added to that by describing specific hashtags that teachers may rally around in times of political turmoil within the profession. This study, however, showed that in the context of elementary teachers, Facebook is the most likely place where elementary teachers will turn for emotional support and advice seeking.

Furthermore, while other platforms may offer lesson ideas and resource sharing, elementary teachers often start and curate their searches for lesson inspiration on Pinterest. This differed from Carpenter and Krutka's (2015) finding that teachers were using Twitter as a curation tool. While that may be true in some circumstances, this study suggested that Twitter isn't the preferred platform for elementary teachers engaging in curation practices.

This study added to the existing literature that PLNs through social media enable teachers to self-initiate and self-select their learning opportunities (Prestridge, 2019; Tour, 2017). While teacher preparation programs may encourage teachers to use specific platforms like Twitter (Benko et al., 2016) or Instagram (Billen, 2015), no single platform seems to meet the multitude of learning needs experienced by elementary teachers. As a result, the teachers in this study demonstrated that they have formed their own opinions about the range of options available, and they have specific expectations for what they can gain from the platforms they engage with.

Theme 5: Net Beneficial

This study found that while elementary teachers are concerned with several aspects of social media use, they still perceive these learning opportunities as net beneficial. Teachers in the study expressed concerns with the time it takes to engage with online resources, the pressure they feel to keep up with other teachers, and the spread of misinformation and negativity. These findings are consistent with several other studies about social media use in general and teachers' social media use more specifically.

Trust and Prestridge (2021) explained that self-directed learning requires extra time to explore available spaces, and teachers are particularly mindful of how much time

they can dedicate to a task given the endless possibilities available to them. Bright et al. (2015) also warned against social media fatigue, a phenomenon where users may feel overwhelmed by the vast quantity of information available to them. This study confirmed those constraints as many elementary teachers in both the questionnaire responses and interviews lamented the potential for going down "rabbit holes" when using social media. They shared that they sometimes found the amount of information available on their topics of interest to be overwhelming. This clearly did not deter elementary teachers from using these platforms, however. Instead, teachers developed their own strategies for selecting which platforms to use and how to work access into their daily or weekly routines when appropriate.

This study also reinforced concerns with the internalized pressure teachers feel to maintain picture-perfect classrooms. These comparisons mirror the sources of depression and anxiety explored in other studies about more general social media use (Abbasi & Drouin, 2019; Primack et al., 2017). Pittard (2017) explored how sites like Pinterest and TeachersPayTeachers create a constantly moving target of what it means to be "good enough" as a teacher.

Shelton et al. (2020) also described how teacher influencers sometimes oversell the quality of their ideas and resources because doing so increases the likelihood that they can profit from other teachers who want to emulate them. Such practices may be creating a culture of competition between teachers (Prestridge, 2019) and result in a proliferation of sharing resources that don't align with best practices (Carpenter, Shelton, et al., 2021; Shelton et al., 2021). This study reaffirmed those concerns with the spread of misinformation and profit-motivated teacherpreneurs. Hailey and Lydia both expressed

concerns with the reliability of some of the information they encountered online, and questionnaire responses mentioned this as well. Still, the teachers participating in this study did not see these concerns as significant enough to justify avoiding social media platforms entirely. While aware of these problems, they tended to agree that the potential for positive learning outcomes outweighed the downsides.

Relationship of Themes to Conceptual Framework

This study applied the concepts of networked individualism (Rainie & Wellman, 2014) and affinity spaces (Gee, 2004; Gee & Hayes, 2011) to the descriptions of social media practices among elementary teachers. Networked individualism contends that people take on and sustain different networks and levels of relationships based on their needs and interests at a given time (Rainie & Wellman, 2014). This pattern played out in the activities of the elementary teachers who participated in this study. Elementary teachers leverage different social media platforms for their individual needs and manage platform-specific expectations for the types of information encountered. Some teachers even develop multiple profile identities on a single platform to facilitate the development of relevant networks and relationships connected to teaching.

Teachers described taking on different levels of engagement depending on circumstances and needs. As networked individuals, they were able to rely on external ties through social media to maintain a sense of community and connectedness even if they weren't actively contributing to the platform (Arnold & Paulus, 2010). Trust and Prestridge (2021) contend that five factors shape teacher participation in online spaces: personal and professional goals, subject-related confidence, time available for

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engagement, interpersonal dynamics of the space, and the relationships with those already involved in the activity.

This study's findings confirmed the idiosyncratic nature of engagement in online spaces as elementary teachers performed as networked individuals. Teachers shared examples of asking questions in Facebook discussion groups, scrolling through images of classroom activities on Instagram, and interacting with authors or thought leaders on Twitter.

While some interview participants aspired to "give back" by sharing their own ideas more frequently, the six teachers reported that they were still able to learn vicariously by observing the posts and interactions of other teachers (Parsons et al., 2019). They had cultivated a social network across the different platforms that suited their individual learning needs. They were willing to adjust—as Emma did by leaving Facebook groups—when content no longer served their purposes. This ability to choose between platforms and organize around experts or topics reified the complex and ever-shifting puzzle that underpins networked individualism (Ávila de Lima, 2010).

The tenets of affinity spaces were also reflected in this study. Gee (2004) explains that affinity spaces exist when "people are brought together through a shared affinity for a common goal, endeavor, or interest, not first and foremost because they are 'bonded' to each other personally" (p. 98). The elementary teachers in this study shared how they were able to find individuals, spaces, groups, and hashtags that aligned to their individual interests. Whether the focus was connecting with children's book authors or learning about Positive Behavior Intervention Systems, elementary teachers knew that they were

likely to find other people who shared their interests or had insights into their experiences through social media channels.

The ability to locate affinity spaces through social media was especially relevant to some of the interview participants who had already established themselves as local experts on a topic within their school. These teachers were often expected to lead professional development sessions for their school-based colleagues, so they needed to look beyond their school environment to gain new knowledge. In this way, the shared practices and common interests accessible through online affinity spaces allowed teachers to feel a sense of connection and belonging while meeting their individual learning needs.

Implications

Social media use is pervasive among elementary teachers, and teachers are inevitably turning to social media to gain access to information relevant to their teaching practices. The findings of this study are relevant to further research, policy, and practice relating to professional development and learning for elementary school educators. This section discusses the major implications for each area.

Implications for Research

While this study showed that more teachers are turning to several online spaces for informal learning and emotional support, further research is needed to explore the types of messages shared across the different platforms and the effects of those messages. Teachers' concerns with feeling pressure to keep up with the images they see online should not go unnoticed.

Even before the COVID-19 pandemic, the nation was facing a critical shortage of teachers with more teachers leaving the profession than previously realized (Garcia &

Weiss, 2019). Systemic problems heightened by the pandemic may further accelerate these trends (Diliberti & Schwartz, 2021). Previous studies have already linked general social media use to feelings of anxiety and inadequacy (Primack et al., 2017) and feelings of social overload, jealousy, and envy (Abbasi & Drouin, 2019). A critical examination of the messages being communicated to teachers could uncover other possible sources for feelings of demoralization (Santoro, 2018).

Teacher platform preferences may also differ based on specific job content even within the population of elementary school teachers. Prestridge (2019), for example, found that a group of Information and Communication Technology teachers considered Twitter to be their "go to" platform for learning, but that was not the preference of most teachers in this study. Further research may be needed to drill down into the platform preferences of various subgroups within the elementary teaching community to better understand the factors driving such decision-making.

Finally, this study highlighted the rapid changes that can happen with technology and the challenges that may present for researchers. Within the last three years, Google deactivated its Google+ social network due to lower than anticipated use and Twitter doubled its character limits from 140 characters to 280. Meanwhile, the short video-based platform, TikTok, has surged in popularity, and Facebook rebranded its corporation as "Meta" to reflect its growing interest in virtual reality. These changes amplify the need to continue research that is user-focused rather than platform-focused. Platforms will continue to rise, fall, and evolve, so it is incumbent on future researchers to understand how individuals interact with the variety of spaces available to them, knowing that the landscape is ever-changing.

Implications for Policy

This study highlighted the need to reverse the trend of discouraging social media use among teachers. Nochumson (2021) described how some school districts seek to discourage social media by using web filters that block social media sites and other more general messages that social media is not a credible source of learning. Prestridge (2019) explains that this approach is rooted in compliancy rather than teacher interests because of "'tick the box' requirements" and perspectives that view "professional development as being 'done' to teachers who act as receivers of outside experts' knowledge" (p. 150).

Such approaches run counter to best practices in teacher professional development (Kennedy, 2014a, 2014b; Zepeda, 2012, 2018a). This study confirmed that elementary teachers will leverage social media for informal learning regardless of district policies. Discouraging teachers from self-initiated learning around the core functions of their jobs may only add to school-based perceptions of deprofessionalization and demoralization (Wronowski & Urick, 2021).

Schools should begin giving teachers formal professional development credit for the professional learning activities they undertake through social media. Nochumson (2021) proposes doing this by requiring teachers to submit a reflection on what they have learned through their social media networks. Not only would this empower teachers to become self-directed learners, but it would also validate the work they're already doing independently. Such a move could swing the needle closer to more effective job-embedded learning than current policies.

Implications for Practice

This study presented several implications for practice. First, the questionnaire responses revealed that many teachers are unfamiliar with some of the social media platforms that are available to them or have misconceptions about platforms' capabilities. While the younger study participants shared accounts of being introduced to social media in their teacher preparation programs, many other teachers have been left on their own to explore learning opportunities through social media.

In addition, the platforms continue to evolve and add new features, which may mean that teachers are no longer using the platforms as efficiently or effectively as they could be. As a result, instructional leaders should normalize multi-platform social media use and be prepared to coach teachers on best practices for finding and evaluating results.

This study also highlighted the importance of teaching elementary teachers how to be critical consumers of the content they find online. Results from previous studies suggest that teachers are being inundated with information that may not be properly vetted or align with best practices (Carpenter, Shelton, et al., 2021; Shelton et al., 2021).

This study supported Lundgren et al.'s (2021) conclusion that sharing activities and resources found online with school-based colleagues could facilitate opportunities for dialogue that could minimize the use of problematic materials. Trust and Prestridge (2021) recommend that "current and future educators are given the opportunity to explore, analyze, and reflect" on how their social networks affect their learning and practice (p. 9). Schools should facilitate that process by acknowledging teachers' social media activities and creating space for safe discussion among colleagues.

Finally, this study suggested that school-based administrators should encourage teachers to take advantage of social media for informal learning. The teachers in this study reported finding great value in connecting with other groups of teachers who shared their interests and inspired their work. Nochumson (2021) suggests that even just asking teachers if they have found any interesting new ideas for their classroom on social media lately can feel validating and encouraging. An even better option is if administrators model social media use by liking and resharing the resources and activities posted by the teachers they work with (Nochumson, 2021). Such efforts, though small, could make a big difference in teacher morale by acknowledging the work that teachers are constantly doing in these online spaces.

Concluding Thoughts

Social media has become a central and highly influential part of the lives of teachers. During times of crisis, such as the terrorist attacks in France that generated a unifying hashtag for teacher discussion (Greenhalgh & Koehler, 2016) or the unprecedented COVID-19 pandemic that forced teachers online to teach their students virtually, social media enabled access to timely information that no other resource could provide so effectively. Social media holds tremendous potential to facilitate access to ideas and information that may otherwise be unavailable to teachers through their school environments or their formal professional development experiences. The ability to access diverse perspectives and experiences can offer tremendous value to teachers who may otherwise feel isolated.

At the same time, we have already seen shifts in the political landscape and increased divisiveness brought on, at least in part, by social media. Despite the fact that

most Americans have a negative view of social media's influence on power and politics (Anderson, 2020), it is now the most common pathway to access news, overtaking print news sources for the first time in history (Schaeffer, 2019). The popularity of social media as a news source suggests that people are engaging with social media even though they know it may not always be beneficial.

We are beginning to see similar patterns emerge with education-related content shared through social media. Carpenter, Shelton, et al. (2021) expressed concerns that teachers were not properly vetting resources they discovered online when they were pushed into remote teaching due to the COVID-19 pandemic. Similarly, Shelton et al. (2021) expressed concerns with the pedagogical quality of materials created and promoted by teachers from TeachersPayTeachers. As teachers use social media to develop a market for the materials they create, they may, by design or accident, be fueling the proliferation of harmful content (Prestridge, 2019; Shelton et al., 2021). This makes the stakes higher than ever to understand how elementary teachers are using social media platforms for informal learning.

This study began the process of recognizing that elementary school teachers use multiple social media platforms as part of their informal learning processes. They are purposeful in their choices, and they value the information they can access while remaining mindful of the privacy of themselves and their students. These practices happen whether teachers are encouraged by their districts or not. Policies and practices that ignore or discourage these behaviors are divorced from the reality of our digitally connected lifestyles.

Schools need to begin incorporating social media practices as part of their job-embedded professional learning efforts. Rather than pushing teachers toward a specific platform like Twitter or Facebook, or a specific hashtag like #Edchat, leaders should recognize that behaviors will be shaped by personal interests and preferences. Professional development should never be one-size-fits-all; the same concept applies to social media practices.

Schools cannot afford to overlook this important source of professional learning among elementary teachers. Instead, school leaders should acknowledge and encourage social media to facilitate better conversations about the quality of the content accessed and shared through social media. Such dialogue could greatly expand opportunities for teacher professional learning by improving resource evaluation and developing best practices to ensure that the lessons learned through social media align with the best interests of the students the teachers are working to serve.

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APPENDIX A: QUESTIONNAIRE

Section 1: Informed Consent

Researcher's Statement
We are asking you to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. This section is designed to give you information about the study so you can decide whether to be in the study or not. Please take the time to read the following information carefully. Please contact the researcher if there is anything that is not clear or if you need more information. When all your questions have been answered, you can decide if you want to participate in the study or not. This process is called "informed consent." You may print a copy of this page of the survey before moving onto other questions.

Principal Investigator: Sally J. Zepeda
                                Department of Lifelong Education, Administration, &
Policy
                                szepeda@uga.edu

Purpose of the Study
The purpose of this study is to explore elementary teachers' attitudes toward different social media platforms when used for professional learning purposes. The study will examine what platforms elementary teachers are using, what types of content they access or share through these platforms, and whether these choices influence their perceptions of personalized professional learning.

Study Procedures
If you agree to participate by clicking the "next" button below, you will be asked to complete a survey. The survey is expected to take 20 to 30 minutes to complete. Survey questions will ask about your basic demographic information, your use of social media, and your perceptions of social media for professional learning.

At the end of the survey, you will be invited to participate in additional interview research and data collection regarding your social media practices as an educator. Participation is voluntary and all questions are optional.

Risks and Discomforts
There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

Benefits
The findings from this study may provide information that could impact future professional learning initiatives for elementary teachers. No promise or guarantee of benefits has been made to encourage you to participate.

Privacy/Confidentiality
Your survey answers will be sent to a link at Google Forms where data will be stored in a password-protected electronic format. The Google Form will not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether you participated in the study.

At the end of the survey, you will be asked if you are interested in participating in an additional online interview and/or additional social media data collection. If you choose to provide contact information such as your email address or social media usernames, your survey responses may no longer be anonymous to the researcher. However, no names or identifying information will be included in any publications or presentations based on these data, and your responses to this survey will remain confidential.

Participation is Voluntary
Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. You are free to decline to answer any question you do not wish to answer for any reason.

If you have questions
The main researcher conducting this study is Dr. Sally Zepeda, a professor, and Alison Eber, a doctoral student at the University of Georgia. If you have any questions now or in the future, you may contact Dr. Zepeda at szepeda@uga.edu or at 706-542-0408. If you have any questions or concerns regarding your rights as a research participant in this study, you may contact the Institutional Review Board (IRB) Chairperson at 706-542-3199 or irb@uga.edu.

Electronic Consent
Please select your choice below. You may print a copy of this page of the survey for your records. Clicking on the "Agree" button indicates that
- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

    Agree
    Disagree

<u>Section 2: Demographic Information</u>
What is your current age? (multiple choice)
    [20-24][25-29][30-34][35-39][40-44][45-49][50-54][55-59][60-64][65+]

How do you identify your gender? (multiple choice)
       Male   Female   Other   Prefer not to answer

How many years have you completed as a teacher? (multiple choice)
       [0-2]   [3-5]   [6-9]   [10-14]   [15-19]   [20-24]   [25-29]   [30+]

What grade level(s) do you currently teach? (check all that apply)
       Pre-K K 1 2 3 4 5 6 other (specify)

Would you describe your school as public or private? (multiple choice)
       Public   Private

How would you describe the location of your school? (multiple choice)
       Rural   Suburban   Urban

Where is your school located? (drop down menu of 50 states/US territories)

What is your job title? (short answer)

Section 3: Social Media Use
Which of the following social media platforms do you use for personal purposes (e.g., to interact with friends or family members)? (check all that apply)
       Facebook
       Google+
       Instagram
       LinkedIn
       Pinterest
       Snapchat
       Twitter
       YouTube
       Other: _____

Which of the following social media platforms do you use for professional purposes (e.g., to learn from or interact with other teachers/educators)? (check all that apply)
       Facebook
       Google+
       Instagram
       LinkedIn
       Pinterest
       Snapchat
       Twitter
       YouTube
       Other: _____

Estimate how frequently you use the following platforms *for personal purposes*:

Facebook
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Google+
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Instagram
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

LinkedIn
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Pinterest
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Snapchat
    Several times a day
    About once a day

A few times a week
Every few weeks
Less often
Never

Twitter
Several times a day
About once a day
A few times a week
Every few weeks
Less often
Never

YouTube
Several times a day
About once a day
A few times a week
Every few weeks
Less often
Never

Other
Several times a day
About once a day
A few times a week
Every few weeks
Less often
Never

Estimate how frequently you use the following platforms *for professional purposes*:
Facebook
Several times a day
About once a day
A few times a week
Every few weeks
Less often
Never

Google+
Several times a day
About once a day
A few times a week
Every few weeks
Less often

Never

Instagram
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

LinkedIn
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Pinterest
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Snapchat
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

Twitter
    Several times a day
    About once a day
    A few times a week
    Every few weeks
    Less often
    Never

YouTube
    Several times a day

About once a day
A few times a week
Every few weeks
Less often
Never

Other
Several times a day
About once a day
A few times a week
Every few weeks
Less often
Never

Section 4: Perceptions of Professional Learning
Which platforms would you use for the following activities (check all that apply):

Advice seeking
Facebook
Google+
Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Collecting & Organizing Resources
Facebook
Google+
Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Finding Classroom Inspiration
Facebook
Google+

Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Finding Lesson Ideas
Facebook
Google+
Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Giving or Receiving Emotional Support
Facebook
Google+
Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Learning about New Ideas in Education
Facebook
Google+
Instagram
LinkedIn
Pinterest
Snapchat
Twitter
YouTube
Other: _____
None of the above

Reflecting on Personal Teaching Practices
- Facebook
- Google+
- Instagram
- LinkedIn
- Pinterest
- Snapchat
- Twitter
- YouTube
- Other: _____
- None of the above

Describe any other professional activities that you engage in through social media.

Which social media platform do you most prefer for professional learning and why?

Which social media platform do you find least helpful for professional learning and why?

Section 5: Invitation to Participate in Further Research
As part of this study, we would like to collect publicly available social media posts and conduct follow up interviews with elementary teachers regarding their use of social media for informal professional learning. If you are willing to participate in further aspects of this research, please include your contact information below. The researcher will contact you with further information about the study. Participation is purely voluntary, and you may opt-out at any time.

Email address

Please include your username(s) for any platforms that you are willing to discuss for possible inclusion in this research project:
- Facebook
- Google+
- Instagram
- LinkedIn
- Pinterest
- Snapchat
- Twitter
- YouTube
- Other (please specify)

APPENDIX B: INTERVIEW GUIDE

Hello. My name is Alison Eber, and I am a doctoral student in the Educational Administration and Policy program at the University of Georgia. I am conducting a research project on the experiences and perceptions of elementary teachers who use social media for reasons related to their teaching. I come to this project as an elementary teacher who has had a teaching-related blog and who has used social media extensively to connect with other teachers. As another teacher who uses social media, you offer an important perspective on my topic, and I appreciate you taking the time to speak with me today.

Before we begin the interview, I would like to remind you that the information that you share throughout the interview will be kept confidential as explained in the consent form. I will be recording the interview for later transcription, but when I transcribe, I will not use your name or any other identifying information about you that could be used to determine your identity. You are free to skip any questions that you do not want to answer, and you may end the interview at any time. I expect that the interview will take approximately an hour. Do you have any questions before we begin?

Section 1: Background

I would like to start our conversation by learning a little about your teaching experience.

1. Tell me about your teaching experience.
   - Years taught
   - Grade levels/subject areas
   - Type of school (public/private) and demographics

2. Describe the professional learning opportunities available within your school.

3. Tell me about how you got started connecting with other educators through social media.
   Possible probing questions: What platform(s) did you start using? Tell me about how you started connecting with teachers online.

Section 2: Experiences
Transition: Next I would like to learn more about your experiences as it relates to using social media for teaching-related purposes.

4. Tell me about how you use social media.
   Possible probing questions: What platforms do you use? How often do you use them? Do you have different expectations between the platforms?

5. What do you see as the benefits of connecting with teachers through social media?
   Possible probes could include: Has social media use impacted your classroom practices? Have you learned anything from other teachers? How are these benefits (or drawbacks) unique to social media?

6. What do you see as the downsides?
   Possible probes could include: Any negative experiences? Time consuming? Addictive? Learning things you'd rather not know about colleagues?

Section 3: Recent Posts
Transition: My next few questions are about some of your recent activity using social media. I'd like to learn more about how you use social media.

7. Tell me about your audience.
   Possible probing questions: What do you know about them? What kind of feedback do you receive? How does this affect your use of social media.

8. Thinking about your recent social media activity, are there any posts that you would like to discuss?

[Interviewer will pre-select 3-4 examples of recent social media posts that the participant has shared publicly and use video-conferencing technology to draw the participant's attention to each post when cycling through this section of questions]

9. Tell me about this post on [name of platform].
   Probing questions: Why did you decide to use this particular platform? What made this platform a better choice than [alternative]? Would there have been a better platform for this?

10. Describe the response you experienced when you posted this.
    Probing questions: How did you feel about this post? What reactions did you receive from others?

[Repeat these questions for each selected social media post.]

11. Are the any other pictures that you wish you had taken or posts you wish you had made?

12. Is there anything else you'd like to share about your social media experiences?

Wrap-Up: I want to thank you for taking the time to speak with me about your experiences using social media as an elementary teacher. You shared several important insights about your experiences, and I really value your contribution to this project. Would you like to receive a copy of the transcript to read over once I have finished transcribing this interview?

APPENDIX C: CODEBOOK FOR DATA ANALYSIS

Drawbacks of Particular Platforms

Code	Occurrence	Definition	Example
Communication	8	Comments about difficulties to communicate with others through the platform or the experience of limited interaction opportunities.	"Pinterest [is] an awkward platform to communicate on."
Familiarity	28	Comments about limited knowledge of or experience with a particular platform to know how to use it for professional learning purposes	"Snapchat…never found any professional information on it, but [I] haven't played around with it much."
Monetization	4	Comments about the quantity of paid products, commercialization, and advertisements.	"Pinterest. Too many links to paid products instead of lesson ideas."
Negativity	3	Comments about negative or judgmental opinions or venting on a particular platform.	"Facebook is too full of judgmental opinions."
None Given	26	Respondent identified a least preferred platform but did not identify why they chose that platform.	
Platform	26	Comments about the presence or lack of specific features on a particular platform that limited its utility.	"Twitter…you don't have enough characters to complete your thoughts."
Pressure	7	Comments that speak to a feeling of overwhelm or a need to compete or keep up with unrealistic expectations.	"Instagram because it's more about putting your best foot forward and less about being realistic."
Purpose	46	Comments that suggest alternate purposes or audiences for a particular platform that would not be compatible with professional learning.	"Snapchat because it's just for playing."
Quality	23	Comments about poor quality and/or quantity of resources or disparaging comments about a platform.	"Pinterest: The links go nowhere; the pictures don't show enough."
Separation	8	Comments that emphasize a break between work and personal uses or platform-specific concerns with privacy when participating in teaching-related activities on a particular site.	"I also like to keep my professional life very separate from my personal one, which rules out having two Facebook or Instagram pages for me (too much work in my opinion)."

Benefits of Particular Platforms

Code	Occurrence	Definition	Example
Accessibility	79	Comments referring to ease of use, familiarity, or platform features that facilitated accessing information quickly	"Facebook because it is easier to use and has more capabilities than other social media platforms."
Connected Groups	48	Comments about finding similarly situated teachers (e.g., grade levels, subjects) and/or making personal connections with those teachers	"Facebook because I like the groups I am part of. I can choose which groups match my grade level and interests."
Curation	11	Comments that mention searching for and/or organizing resources for future retrieval	"Pinterest – easy to search specifically what I am looking for and save for later dates."
Discussions	26	Comments that emphasize interaction, collaboration, and discussion of ideas	"Twitter because you can post questions and interact with people and just gain knowledge by participating in weekly chats."
Inspiration	43	Comments that mention finding new ideas or feeling inspired by other educators	"Instagram (I'm inspired by upbeat educators that share their experiences!)"
None Given	30	Respondent identified a most preferred platform but did not identify why they chose that platform.	
Parent Communication	2	Comments that mention utility of a platform for communicating with parents	"ClassDojo for communication with parents."
Privacy	10	Comments that emphasize elements of privacy (e.g., private groups) and/or being out of the public gaze on a platform	"Facebook because there are many private groups where I feel I can be more open and honest."
Resource sharing	37	Comments that refer to link sharing or specific resources being distributed	"I love when people share links to things that worked for them."
Responsiveness	25	Comments about the immediacy of replies or feedback or the diversity of experiences within the audience	"On Facebook there are hundreds of teachers who connect from all over the country. You can learn from so many."
Support	18	Comments that mention emotional support, advice, and/or encouragement	"The professional groups that I belong to allow me to ask questions and there are supportive people to give advice and encouragement."
Visuals	34	Comments about visual elements such as pictures or video	"I prefer Instagram because there are so many teachers out there, posting classroom ideas with pictures. The picture captures my attention first and then I read about it."