



# Social media diaries and fasts: Educating for digital mindfulness with pre-service teachers<sup>☆, ☆ ☆</sup>

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## HIGHLIGHTS

- Participants reported using social media intentionally and due to unconscious habits.
- Participants were able to identify what was gained and lost with social media.
- Participants rated social media experiences above neutral, but Facebook rated lowest.
- Preservice teachers planned to conduct similar lessons in future.
- Pedagogical guidelines for social media mindfulness should allow for complexity.

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## ABSTRACT

With social media access nearly ubiquitous, teachers and students must explore how to mitigate distractions and unhealthy uses. In this mixed methods study, the authors invited 60 pre-service teachers across two universities to cultivate mindfulness around social media beliefs, habits, and behaviors by completing a social media survey, diary, and fast. Participants identified reasons for regular social media use, including unconscious impulses, and made new realizations about what is gained and lost in social media engagements. Participants were optimistic about teaching similar lessons. The authors recommend pedagogical guidelines for social media mindfulness that allow for complexity, variance, and idiosyncrasy.

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## 1. Introduction

For better and worse, we live in a fast-paced world. Smartphones, tablets, and laptops can help people stay connected in meaningful ways and afford collaboration with others that transcend traditional geographic, temporal, or logistic constraints. However, the blessing of perpetual connectivity to notifications, tweets, or snaps can also morph into a burden that can actually leave users feeling more distanced and distracted. One recent study

indicated that adults check their smartphones an average of 85 times a day (Andrews, Ellis, Shaw, & Piwek, 2015). This pull of participatory media can paradoxically pull the attention of individuals away from the very tasks, thoughts, or people with which they wish to connect. For example, social media companies profit from designing platforms and algorithms that draw on the neurological and psychological impulses that capture users' attention (Harris, 2017), and changing online habits of consumers might even be rewiring their brains to prioritize immediate and efficient information (Carr, 2010). One recent study suggested that frequent social media users have lower levels of mindfulness and experience more emotional exhaustion (Sriwilai & Charoensukmongkol, 2016) and another indicated that digital technologies can even diminish the scholarly endeavors of university students (Selwyn, 2016). Moreover, reflexive and unreflective social media use can lead to depression, suicide, and other mental-health maladies (Twenge, 2017). Unfortunately, some educators have labeled the current

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generation of students as “digital natives” who already possess online knowhow and this assumption implies that students do not require the development of digital skills (Kirschner & De Bruyckere, 2017) (see Fig. 1).

Howard Rheingold (2012) argued that while we must investigate “whether or not Google is making us stupid, Facebook is commoditizing our privacy, or Twitter is chopping our attention to microslices,” we must simultaneously explore “how to use social media intelligently, humanely, and above all mindfully” (p. 1). In a time when there is nearly unlimited access to information, knowing how and where to focus attention becomes a salient social media literacy, and there is ample evidence that social media experiences offer benefits in personal, professional, and educational spaces. However, if the media habits of students and teachers have shifted, teacher educators should respond accordingly to prepare pre-service teachers (PSTs) to use social media and other technologies mindfully in their personal and professional lives.

Unfortunately, there is little research or practice that suggests teacher educators have answered the call to prepare pre-service teachers for this new media ecology. In this study, we will present our research with 60 participants across two universities to better understand how pre-service teachers might develop personal and professional mindfulness. We will introduce mindfulness concepts and then review literature related to social media in education. We describe our contexts and methods for this study and share findings from our social media assignment. Finally, we will discuss the implications of this research for teacher educators, teachers, and researchers who hope to bring attention to mindful social media practices in their contexts.

## 2. Theoretical lens

Professionals in many fields (e.g., business, health, education) have begun to adopt and apply the Eastern philosophical practice of mindfulness. According to Jon Kabat-Zinn (2003, p. 145) mindfulness is “the awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience.” Citizens of the 21st century have access to unprecedented opportunities for connectivity through nearly ubiquitous digital technologies. Paradoxically, this extraordinary access means people must also make an unprecedented number of decisions about where, when, and how to direct their attention. As David Levy (2016a) suggests,

We are all continually making moment-to-moment micro-decisions..., both online and offline, about what to pay attention to, what to ignore, and how to manage the thoughts and feelings, the bodily movements, postures, and breathing that inevitably accompany these decisions. And it is from the accumulation of such microdecisions that the fabric of our days is woven. (pp. 21–22).

Mindfulness advocates argue that by increasing awareness in any present moment, people become more satisfied, engaged, and reflective (Greeson, 2009; Langer, 1989; Shapiro & Carlson, 2017). As such, mindfulness is not limited to the awareness of one’s current state, but also includes how they might adapt that awareness to change their current state for the better. For example, while social media platforms provide portals for connecting with people, information, and interests, many people report their uses of social media as being unsatisfying, unproductive, and mindless (Carr, 2010; Gordhamer, 2009; Turkle, 2011; Twenge, 2017). It is not uncommon for Facebook users to deactivate their accounts due to frustrations or Twitter users to see hours slip away unintentionally. Increasing mindfulness around social media uses can help people

make both micro- and macro-decisions about which platforms and practices are beneficial and which are not. By employing mindfulness, taking stock of current practices, and making informed changes, people can become more attentive users of digital technologies.

Mindfulness is not easily defined and it can often be understood as several interrelated constructs. For example, Shapiro and Carlson (2017) contend that three interconnected components of mindfulness are attention, intention, and attitude. Individuals can increase attention to *what* they are doing by purposefully observing internal emotions or thoughts and external surroundings. When people are intentional they aim to understand *why* they are engaging in certain practices. By identifying which activities are mindful and which are mindless, a user can make intentional decisions about, for example, whether periodic social media smart-phone breaks are revitalizing or depleting. As individuals bring a mindful attitude to the present moment they can better identify *how* to move towards beneficial shifts in practices and habits. Even in being intentional and attentive, people must still be open to actually shifting their practices and habits.

Specific to higher and adult education settings, David Levy has practiced, developed, and researched how to encourage mindful uses of technologies. Levy (2016b) has identified the following pedagogical principles concerning mindful uses of technologies:

- Mindful attention to present experience
- Priority to students’ own discoveries (not general rules or principles)
- Group sharing and reflections on these discoveries
- Recognition and room for complexity, even contradictions
- Creating a safe and trusting environment

In this paper, we apply mindfulness as a theoretical lens and focus on the pedagogical strategies that teacher educators and teachers can utilize to actively engage in deliberate uses of social media. Through this, we situate mindfulness as an approach for educators and students to use to leverage social media platform affordances rather than falling prey to the phenomenon of mindless autopilot. Educators can benefit by not only improving their own social media practices but also by developing the habits of mind to make age appropriate decisions about how they can support their students to use social media and other technologies in healthy, mindful, and beneficial ways.

## 3. Literature review

### 3.1. Mindfulness in education

Research studies suggest that contemplative approaches like mindfulness can help individuals increase attention on activities so as to combat distracted thoughts, mindless habits, and unconscious behaviors (Jain et al., 2007; Lutz, Slagter, Dunne, & Davidson, 2008). It is not surprising that researchers have identified similar benefits for teachers and students in educational settings, citing elements like improved student-teacher relationships (Jennings & Greenberg, 2009; Jennings, Snowberg, Coccia, & Greenberg, 2011), decreased teacher burnout (Roeser, Skinner, Beers, & Jennings, 2012; Roeser et al., 2013), increased opportunities for intrapersonal expression through discussion and writing (Damico & Whitney, 2017), and more balanced approaches to classroom routines and community building (Soloway, Poulin, & Mackenzie, 2011; Zenner, Herrnlleben-Kurz, & Walach, 2014). Some in higher education have even embraced the mindfulness movement by investigating how it can bolster undergraduate education through reflection and introspection (Holland, 2006; Tremmel, 1993).

### 3.2. Social media in education

Scholars have begun to investigate how educators will use and teach about social media in educational settings. Many educators have shared how they use social media in K-12 (e.g., Kurtz, 2009; Marich, 2016) and higher education (Emre & Isbulan, 2012; Smith, 2017; Wright, 2010). K-12 teachers and higher education faculty often report using social media for professional development, but they often do not do use it for educational activities associated with classes (Carpenter & Krutka, 2014; Seaman & Tinti-Kane, 2013; Visser, Evering, & Barrett, 2014). Carpenter (2014), among others, has utilized Twitter with pre-service teachers, and his results suggest that pre-service teachers saw value in resource sharing, communication, and connection with educators within and beyond the classroom. In addition, there has been an increased effort to understand students' social media practices (Madge, Meek, Wellens & Hookey, 2009; Selwyn, 2016). After conducting a mixed methods study where she interviewed high school students, Mao (2014) argued that for "social media to be used as effective learning tools and to adjust students' prior affordances with these tools, complicated efforts in designing, scaffolding, and interacting with students during the process are necessary" (p. 221). However, researchers have also identified limitations to social media uses. For example, Cook and Bissonnette (2016) found that pre-service teachers confronted numerous impediments to utilizing Twitter for engaging in authentic social justice conversations.

Krutka, Nowell, and Whitlock (2017) investigated the successes and shortcomings of using Twitter with pre-service teachers (N = 71) and tried to identify quality pedagogical practices around educational social media uses. Drawing on John Dewey's theory of experience (1938), they recommended approaches that encouraged a continuity of students' experiences in addition to a recognition of internal and external factors. In asking their pre-service teachers to supplement and augment class conversations via class hashtags on Twitter, the teacher educator-researchers found that their students struggled with the technological learning curve, mismatched expectations, and generally narrow visions for using social media in their careers. They argued that many of these shortcomings could have been overcome if they had learned more about the experiences, concerns, and feelings PSTs brought into and carried throughout the assignment. While they also saw successes around improved class communication and some intriguing visions for social media use, their recommendation to focused on an increased focus on understanding and navigating the internal feelings, habits, and abilities of PSTs against external factors like social norms or platform limitations. Yet, there have been few studies that explicitly focus on identifying helpful strategies for students to address issues of attention and distraction in personal and professional uses of social media in education, particularly that center around the habits and practices that students and teachers bring to formal educational settings (Carpenter & Krutka, 2015b).

### 3.3. Social media and mindfulness

While there has been substantive research on both educational uses of mindfulness and social media separately, there are few researchers who have brought these two areas of study together. Despite this lack of scholarship surrounding mindfulness and technology in education, there are a number of studies that explore the influence of increasing awareness of our most ingrained online and technological behaviors. Scholars have isolated problems like information overload (Calvo & Peters, 2014; Levy, 2016a), distractedness (Leroy, 2009; Pang, 2013), and decreased focus and attention (Gordhamer, 2009; Newport, 2016).

Educational stakeholders have supported efforts to help

individuals take control over a constantly connected life, including implementing institution-wide social media blackouts (Troop, 2010) and arguing for other large scale technology fasts and unplugging (Mason, 2018). For example, Rheingold (2012) identified *attention* as a foremost social media literacy necessary for 21st century digital citizenship – in addition to participation, collaboration, critical consumption of information, and network smarts. He argued that in an online world filled with a glut of information, distractions, and choices that people must cultivate attention to make informed decisions and engage in democratic on- and off-line practices.

Levy (2016a) further emphasized the importance for people to attend to their attention in the face of the nearly constant opportunities for distraction with smartphones and personal computers. His teaching and research, primarily in higher education, have focused on helping students identify their feelings, habits, and behaviors with the aim of developing healthy uses of technologies. Levy has designed a number of activities (e.g., record and study online sessions, practice using email as a craft) where his students study, discuss, and reflect up their own online activities as a way to develop personal guidelines for their lives.

With this review of literature in mind, our research question for this study was, *what can we learn about pre-service teachers' beliefs, habits, and practices when completing a social media assignment aimed at cultivating mindfulness?* We aimed to also consider a supplementary question, *how might this assignment help pre-service teachers grow in the knowledge, skills, and dispositions needed to use and teach social media mindfully as professionals?*

## 4. Methods

We drew from both qualitative and quantitative methods in this study, but we approached study design and data analysis from an interpretivist perspective that honors the complex and context-specific nature of educational research. Moreover, we do not aim to make generalizable claims from our sample of pre-service teachers. Instead, research on teaching can help to bridge gaps between theory and practice by investigating problems of practice (Cochran-Smith, 1991), and we engaged in systematic inquiry into data from our classes so as to provide insights for other educators with similar aims. In this case, we sought to better understand an under-researched, -theorized, and -practiced research topic for the field.

### 4.1. Contexts and participants

This study was conducted at two public universities in the southeast and southwest United States, respectively. Sixty participants consented to participate in this study, but numbers vary slightly for specific data sets due to students opting out or failing to turn in specific assignments. Our study participants were closely aligned with demographic norms for practicing teachers (82% female, 18% male; 62% white, 15% African American, 12% Hispanic; 7% two or more races, 5% Asian), but our sample included more African-American and Asian-American pre-service teachers than the national average (National Center for Education Statistics, 2013). Our sixty participants were drawn from five classes that included undergraduate and graduate sections of a general foundations of education class and an English Language Arts class, in addition to a disciplinary literacy graduate section. Most pre-service teachers were 30 years old or younger (68%) and there was an almost even distribution of undergraduate (47%) and graduate (53%) students, with majors ranging from early childhood education to secondary education across subject areas.

## 4.2. Social media assignments

To initiate our social media assignment, we began with “the mindful self” assignment by encouraging pre-service teachers to reflect on their past and current social media practices while completing an initial survey and social media diary. We intended for these initial assignments to be educational for both the pre-service teachers and us as we offered feedback, support, or made instructional decisions for individual students and the class (see [Table 1](#) for social media assignment).

After completing “the mindful self” activities, we asked pre-service teachers to set up professional Twitter accounts, follow and study educational professionals and organization tweeting patterns, and tweet on educational and course topics throughout the semester. These “mindful exploration” activities yielded much data, including 399 tweets over a four week period toward the end of our classes. These activities moved students from their personal and past uses of social media into networked public spheres of tweeting educators ([Carpenter & Krutka, 2015a](#)). Because we collected so much data concerning pre-service teachers’ development of professional learning networks (PLNs; [Forbes, 2017](#); [Trust, 2012](#); [Trust, Krutka, & Carpenter, 2016](#)), we are writing about this data set at the time of publication of this manuscript. We believe these papers can be read together to provide a full view of our social media assignment.

The final section of our semester-long social media assignment asked PSTs to engage in “mindful reflection” through a social media fast and a final survey that required reflection on all sections of the assignment, a social media plan for their future classrooms, and answering questions regarding the effects of the assignment activities for their educational careers.

## 4.3. Data analysis

Qualitative data from surveys, social media diaries and reflections, and social media fast reflections were analyzed through several rounds of coding, memo writing, and by condensing and broadening of thematic categories ([Charmaz, 2014](#)). Instead of utilizing an interrater reliability metric, we developed collaborative agreement around our emerging coding structure through iterative conversations and analysis ([Saldaña, 2016](#)). These flexible methods allowed us to analyze the distinct responses which emerged from a social media landscape that challenges researchers with a constantly “moving target” ([Hogan & Quan-Haase, 2010](#), p. 309). For example, codes for the social media diary reflection were so scattered that we sought to utilize both frequent and distinct sentiments as a means to understand assorted perspectives and experiences. Therefore, we organized this section around the quantitative diary data where we ran multiple bivariate correlations and utilized qualitative data to help explain these statistics. On the other hand, we were able to identify more salient themes in the social media fast reflections and thus included codebook (see [Appendix A](#)). Quantitative data from surveys and the diaries were entered into SPSS Version 23 and run to identify trends, statistically significant differences among data categories, and chi-square cross tabulations helped us investigate relationships.

## 5. Results

To offer educators a better understanding of our pedagogical approach and the instructional moves we made in implementing our social media assignment, we will present findings in the order that the assignment unfolded in our classes. Drawing on [Krutka et al. \(2017\)](#) findings, the “mindful self” assignments emerged from our recognition of the importance of understanding our pre-

service teachers’ current practices and beliefs before moving forward. We identified pre-service teachers’ perceptions and experiences through the initial survey and social media diary.

### 5.1. Initial survey

#### 5.1.1. Social media practices

In our initial survey, most of the participants conveyed that they actively viewed content from a variety of social media platforms as important parts of their personal lives ( $n = 36$ ; 60%), but less so for professional purposes ( $n = 16$ ; 27%). In their daily uses, 80% of pre-service teachers ( $n = 48$ ) utilized Facebook with 48% using Instagram ( $n = 29$ ), 42% checking Snapchat ( $n = 25$ ), 25% utilizing Pinterest ( $n = 15$ ), and 17% checking Twitter ( $n = 10$ ). While most participants indicated that they primarily read content and rarely posted ( $n = 35$ ; 58%), some PSTs shared that they actively post on social media sites ( $n = 24$ ; 40%) and only 8 (13%) indicated that they tried not to use social media very often. Pre-service teachers utilized social media to keep up with family and friends ( $n = 56$ ; 93%); local, national, and world news ( $n = 44$ ; 73%); popular culture ( $n = 28$ ; 47%); and interests or hobbies ( $n = 25$ ; 42%).

#### 5.1.2. Prior experiences and assignment expectations

While some pre-service teachers communicated anxiety ( $n = 18$ ) about the social media assignment, specifically citing concerns about the additional workload ( $n = 5$ ), they were mostly enthusiastic about the assignment. Specifically, a non-traditional pre-service teacher felt “anxious” because she had given up social media and had since “been so much happier and healthier.” She even stated that, “I now sleep better, live in the moment and am a much better human being.” This revelation impelled the instructor (author 2) to reach out to her to ensure she felt comfortable with the assignment. Our participants’ concerns became part of our social media assignment as we opened spaces in our classes to discuss and address these issues.

### 5.2. Social media diary

#### 5.2.1. Quality of experiences

In the social media assignment, we asked our pre-service teachers to take stock of their typical social media practices over a one to two day period that included at least 6–8 entries. Participants generated 516 entries that recorded the platform used, device, time, and quality of the experience. Thirteen entries concerning time of day were removed because they were unclear. Overall, participants’ ratings for the quality of their social media diary entries were slightly above neutral ( $M = 1.77$ ,  $SD = 0.70$ ). There were no significant differences for participants in the quality of social media experiences with relation to time of day,  $\chi^2(6, N = 503) = 5.11$ ,  $p < .05$ . Moreover, our comparison of undergraduate and graduate participants’ platform uses,  $\chi^2(5, N = 516) = 3.09$ ,  $p < .05$ , and the quality of their entries,  $\chi^2(2, N = 516) = 4.06$ ,  $p < .05$ , did not result in significant differences. However, in the following sections we will discuss participants’ significant differences concerning quality across platforms and devices used by undergraduate and graduate students, in addition to common, varied, and unique responses to our assignments.

#### 5.2.2. Idiosyncratic responses

While we asked pre-service teachers to “unpack trends, observations, and practices” in their reflections on their diaries, participants’ reflection responses widely ranged to address the how, what, when, where, why, and who of their social media experiences. One participant identified how Twitter demanded more “active” participation than Facebook, which “allows you to interact at



different times of the day without feeling like you've really missed out on a discussion." PSTs explained how their interactions on Facebook could range from positive when learning about family and friends to more negative in political discussions. Completing her reflection shortly after the 2017 presidential inauguration, a graduate participant shared that "all of the divisiveness and negativity that fills my Facebook newsfeed every day is taking its toll." On the other hand, one pre-service teacher mentioned searching out like-minded political quotes as another discussed Facebook political discussions positively as she explained that the medium was her "primary way to keep up with my community and the news" and it was important for her to respond "to common questions in event pages and pay attention to the comments section for subsequent questions or points of interest." While responses were unique to individuals, chi square analysis indicated that our participants' rated the quality of Facebook entries lower than expected and Pinterest and Twitter experiences garnered more beneficial ratings,  $\chi^2(10, N = 516) = 23.75, p < .01$ .

### 5.2.3. Reasons for using social media

Pre-service teachers also focused on why they turned to social media and cited reasons including boredom and habits, breaks and waiting, procrastination and curiosity, or just responding to the visual cues of social media app notifications. An undergraduate English Language Arts major said she used her social media apps to "fill the boredom, but rarely does it work. I find myself dissatisfied or even more bored, wishing I was doing something else. It never seems like a good 'waste of time'; but rather a complete waste of time." A graduate pre-service teacher working on her English for Speakers of Other Languages (ESOL) endorsement said, "there are also some days that I will be on social media for hours and not even realize it, but yet I never did anything productive with it," and she even stated that reviewing her log has encouraged her to change habits. As PSTs identified what filled their time, we identified a *guilty user theme* as exemplified by a pre-service teacher who had "come to the realization that I am addicted to social media. I could be spending my time reading or enjoying the world around me but I would rather pick up my phone." A number of participants also mentioned better understanding their habits, including an undergraduate PST who said, "I've noticed that when I do take a break from homework and I get on my phone, two minutes easily turns into thirty without me realizing it until it's too late."

### 5.2.4. Devices and habits

Participants also identified where they accessed social media, when they did so, and how they engaged. As our data showed, pre-service teachers overwhelmingly utilized their smartphones to access social media (Table 2), as exemplified by a graduate candidate who used her "iPhone all day to connect with my friends and family." However, undergraduates were significantly more likely to use phones and graduate students more likely to use computers when compared against each other,  $\chi^2(3, N = 516) = 16.78, p < .001$ . Many participants cited convenience in using their mobile phones, but one pre-service teacher also noticed that "while I'm at my desktop computer working I occasionally get distracted by or use Facebook to take a break from working." A number of pre-service teachers were able to identify their habits and uses in relation to specific devices, but they also began to parse out when they used them. For example, several candidates mentioned checking social media when they "wake up" or as part of a morning routine. One participant mentioned using "Facebook as my newspaper in the morning while I drink coffee. I use it while I am waiting on my son to get out of school and before I go to bed." Finally, several pre-service teachers mentioned preferring "lurking" to posting as one PST exemplified in saying she "noticed how much my friends and I

lurk on social media." By asking pre-service teachers to identify social media practices early in the semester, we hoped it would encourage them to use social media more mindfully. We followed up on these efforts regularly in our classes, but we did so specifically with our social media fast assignment.

## 5.3. Social media fast

As our courses wound down during the semester, we asked pre-service teachers to choose a one-to-two day block of time to 'social media fast' by giving up social media and/or a device (e.g., cell phone, laptop, tablet) and then write a reflection on their experiences. In addition to explaining what they gave up and why, we asked PSTs to consider questions like, *what do you think was gained or lost during your social media fast? How did you feel about the experience? Would you have your future students social media- or techno-fast in some form? Why or why not?* In analyzing social media fast reflections, most participants shared positive perceptions of the fast, and used descriptors particularly related to their emotional states, social interactions, and productivity.

### 5.3.1. Platforms and duration

Our participants chose to fast from one or more of Facebook (n = 32), Instagram (n = 14), Twitter (n = 8), Snapchat (n = 7), Pinterest (n = 6), YouTube (n = 1), and Facebook Messenger (n = 1), and 12 PSTs chose to fast from all social media. In addition, some pre-service teachers also specified devices to include their fast, specifically their cell phones (n = 9), laptop (n = 5), and tablets (n = 2). While most participants (n = 39) chose to complete their social media fasts over 24 h, PSTs also chose to fast for 48 h (n = 14) or even longer (n = 9).

### 5.3.2. Approaches

Our students approached the assignment in different ways with some identifying the easiest path forward and others challenging themselves in unique ways. Nine PSTs specifically mentioned choosing to fast during times when they were already busy so as to lessen of the impact on their experiences. For example, a graduate pre-service teacher decided to give up her phone because her new job did not allow her to use it during the day. Another PST completed a week-long fast over spring break while on a cruise. This unforeseen approach led us to modify the assignment to specify that the fast should be conducted in typical or high use social media times so as to ensure the assignment encourages opportunity for meaningful reflection. On the other hand, some participants chose to fast specifically to learn about areas in which they struggled with social media uses. One participant mentioned specifically fasting on the social media platforms (i.e., Twitter, Facebook) in which he was most active so as to deepen the impact of the assignment experience. Two participants asked their families to fast with them. Six PSTs shared that they had given up or fasted from various platforms previously. In anticipation of the assignment, one graduate student even mentioned "that night as I fell asleep, I spent so much time looking through all my accounts, I felt like I was binge eating before a required fasting for surgery the next day."

### 5.3.3. Positive perceptions

Participants' reflections about the overall quality of their fast experiences were largely positive and included descriptors like "invigorating" and "eye opening," among others, but they identified positive outcomes related to their social interactions (n = 16), emotional state (n = 19), productivity (n = 11), uses of time (n = 4), and social media practices (n = 2). Concerning social interactions, eight PSTs appreciated the experience of having more time with

family and others in face to face settings that included lengthier conversations, more attentive listening, and improved relationships without a phone as a distracting point of contention. Moreover, eight participants stated that their fast provided a break from social comparisons. A graduate student said she, “felt a weight lifted off my chest because I wasn’t sitting on my phone or computer comparing my life to other people, instead I was focused on my priorities, and that was a fantastic feeling,” and an undergraduate said, “I definitely notice being bit happier when I am not comparing my at home behind-the-scenes footage to someone else’s social media highlight reel.”

#### 5.3.4. Replacement activities

Candidates also focused on how social media fasting opened time in their lives for other activities and led to new realizations. Seven participants mentioned utilizing their time previously dedicated to social media to read and four mentioned completing domestic activities like cooking, cleaning, or chores. An undergraduate shared, “I decided that in this time, I was going to read a book that I borrowed from a friend a few months ago and just never got to reading.” PSTs ( $n = 5$ ) also were able to spend more time thinking in deep, personal, or visionary ways. A graduate student said,

I also had time to reflect about several aspects of my life in a bigger context, making

plans about the future. This is something I don’t usually do, but, since I had some spare time, I thought would be beneficial to take the chance to do some deeper reflections.

Eleven PSTs mentioned spending more time with pets, partners, families, or friends and even walked with their children to school. PSTs also mentioned spending more time on homework ( $n = 5$ ) and work activities ( $n = 2$ ). Interestingly, 10 participants utilized their extra time for other media like television ( $n = 3$ ), podcasts ( $n = 1$ ), and even social media not included in their fast plan ( $n = 7$ ). Four participants spent time outside in nature, walking campus, or hiking. Pre-service teachers’ also considered the role of social media within their families as a graduate student shared:

I think I gained more time to spend with my family, especially my sons. I paid more attention to their activities, played with them and went more frequently to open spaces (parks and playgrounds). I realized the older one (5 years old) is already “addicted” to electronic devices (games and youtube clips on ipads and smartphones). I didn’t make my family technofast together with me, but as a result they had less time with their devices as well.

Disconnecting from social media not only opened up time and space for different activities, but also led participants to new realizations.

#### 5.3.5. New realizations

In addition to social media fasting yielding more time for other activities, participants also shared new realizations exposed by completing the assignment. Eleven PSTs mentioned how social media had too often become a distracting and mindless time filler that served as a “horrible waste of time.” Eleven candidates mentioned being dependent or addicted to social media in ways of which they were not fully aware before. A graduate English Language Arts student said that the assignment provided “a huge wake up call” and reflected on her dependency in saying, “I have become too addicted to social media” and that “a disconnection

from it would help be become more motivated and active in my life.” On the other hand, other candidates conversely identified how they used social media for relief or to reduce stress, the difficulty they had in changing habits, or even the safety issues associated with geolocation tags.

#### 5.3.6. Unconscious habits

Either before or during the fast, numerous participants identified how devices, apps, and notifications were disruptive and their uses of them habitual to the point of unconscious checking. Seven PSTs deleted apps or hid devices because they realized they could not stop themselves from checking social media otherwise. An undergraduate shared:

I found myself wanting to use Snapchat frequently, but in short spur of the moment intervals. I kept hovering over the icon wanting to send a witty picture or a quick joke but couldn’t. I ended up removing the app altogether because muscle memory kept making me open the application.

Five participants had to delete social media apps from their devices because their habits led to unconscious checking. Overall, 29 participants mentioned either checking social media without realizing it ( $n = 18$ ) or feeling a compulsion to do so ( $n = 11$ ). A graduate students echoed a common theme in saying:

As I started my day, I sat at my computer with a cup of coffee and diverted from my main task by instantly typing Facebook in the web browser—my behavior was unconscious. My goal that morning was to find a ceiling fan. As the morning continued, I caught myself multiple times unconsciously opening the Facebook application on my phone as I waited for everyone to wake up.

Pre-service teachers were able to clearly identify and reflect on their own habits and practices in more intentional ways than most had done prior to the assignment.

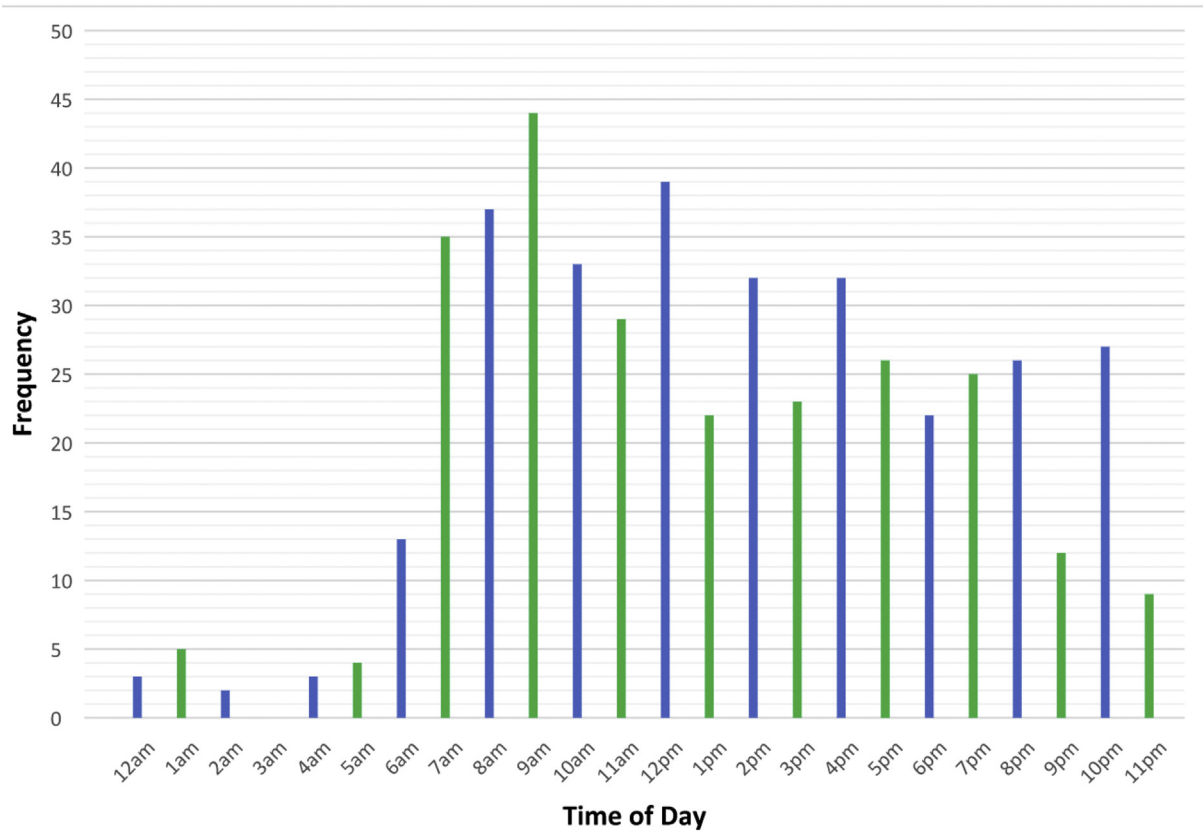
#### 5.3.7. Incorporating social media fast in future teaching

Because many PSTs identified practices and changes for themselves, it is not surprising that an overwhelming number of pre-service teachers ( $n = 49$ ) indicated that they would conduct a similar social media or technofast assignment with their future students. An undergraduate student reflected:

I would have my future students do a technofast or do that in combination with a log about how often they are on social media. I think it is an eye-opening experience to see how much time you spend on random things that have no real benefit other than curbing random idleness. I do not think many students understand how much time they spend on social media. It is honestly one of the most addicting things in the world.

An English Language Arts graduate student shared how she could utilize such ideas as part of her subject area in saying:

I definitely think this would be a fun, introspective activity for my future high school students and could be tied in with a novel that speaks on the influences of technology. Often times, students don’t always feel they relate to novels written in the past about futuristic societies because they simply feel “that isn’t realistic.” Taking a day to evaluate themselves may allow for more connections to be made on how influential things are on the perception of society, the norm, and their happiness.



**Fig. 1.** Social media diary entries by time of day and frequency (<sup>a</sup>N = 503).  
<sup>a</sup>N = Number of entries, not number of participants.

Five PSTs suggested that they would not utilize a similar assignment in their classrooms as they had concerns about parental hassles, the age of students, or not wanting to lose the technologies for learning.

## 6. Analysis and discussion

Our study reports the results of our social media assignment and offers teacher educators and teachers insights into how they might design and implement similar assignments and conduct related studies in their own contexts. We believe the results of our study support and expand upon previous research on the topic. Teacher educators and other educators have begun to use social media in and around their instruction, and, based on their study, Krutka et al. (2017) recommended that such experiences required a continuity of experiences from past to present and an interaction of internal emotions and habits and external factors. Furthermore, our assignment was informed by Levy's work (2016a, 2016b), and, after analysis of findings, we identified his pedagogical principles for teaching technology mindfulness as offering a lens through which to investigate our results.

### 6.1. Continuity and interactions

Our assignment was designed with recommendations by Krutka et al. (2017) in mind that uses of social media include a continuity of students' experiences and a consider both internal and external factors. We believed it important to ensure we understood, and responded to, our pre-service teachers' practices and beliefs about social media. Our initial survey helped us understand our students'

practices and preferences (e.g., preference of many students for lurking), concerns (e.g., 18 students with anxiety over the assignment, 5 students concerned with workload) for class discussions, assignment tweaks, and helpful examples. Moreover, it helped us identify and support students who did not use social media often. While myths about "digital natives" and "digital immigrants" might suggest our younger pre-service teachers might report a higher quality of social media experiences (Kirschner & De Bruyckere, 2017), this was not the case and we identified participants who needed support individually. For example, it allowed author 2 to check in with a student who had given up social media and ensure she was comfortable with assignment requirements. We made sure to check in with our students throughout the semester, particularly those with concerns.

We sought to increase the likelihood our assignments offered continuity into their teaching by asking pre-service teachers to envision uses for their anticipated contexts. Whether our assignment is replicated, modified, or possibly informs future lessons is left up to our participants who must make age-appropriate, contextual, and wise pedagogical decisions. However, it is encouraging that an overwhelming majority of pre-service teachers (n = 49) explicitly planned to complete our lesson or some variation in their future classes.

### 6.2. A pedagogy of social media mindfulness

We also believe our study supports Levy's (2016b) pedagogical principles from his work around teaching students to cultivate mindfulness around their social media practices. Because these principles are interconnected, many of the examples from our data could help explain more than one principle. We do not believe that

**Table 1**  
Mindful social media assignments.

Assignment	Brief Description	Data and Analysis
<i>The Mindful Self</i> Initial Survey	We queried PSTs about the quantity, quality, and reasons for using various social media platforms and how their practices influenced their personal and professional experiences. PSTs were asked open-ended questions about their expectations for using social media in our course and their professional careers	Data included 60 PST survey responses that included demographic information, major, five quantitative questions about social media usage, and three open-ended questions about expectations for assignment and career.
Social Media Diary	We asked PSTs to “keep a diary that is a typical representation of your social media uses within a 24–48 h period and include a minimum of 6–8 entries.” In this assignment, we sought for students to identify and then reflect upon their social media practices.	Data contained 516 PST entries that recorded the platform used, device, time, and quality of the experience. Thirteen entries concerning time of day were removed because they were unclear. We analyzed quantitative data in SPSS Version 23 to identify trends, statistically significant differences among data categories, and chi-square cross tabulations. We also qualitatively coded reflections.
<i>The Mindful Exploration</i> Joining the Conversation*	We asked class participants to set up, or modify as appropriate, Twitter accounts to be used professionally, follow a variety of fifteen accounts of educators and educational organizations, and post at least three “substantive” tweets per week that contributed to our class dialogue by using the class hashtag week (one must be response to a classmate’s tweet).	Data from this assignment was not included in this paper.
Twitter PLN Exploration*	We assigned PSTs to analyze tweets for 15 min from the educational accounts in their emerging PLNs and delve into questions like: <i>What purposes in general do the accounts you follow seem to have for tweeting? Are they using their accounts strictly with other educators or do they engage with communities or students? Do they use hashtags to connect with others? With whom are they interacting? What sort of grade level or content-based patterns are evident among accounts your follow?</i> PSTs talked in groups and submitted their analyses.	Data from this assignment was not included in this paper.
<i>The Mindful Reflection</i> Social Media Fast	We instructed PSTs to choose at least “one 24–48 h block of time to “social media fast” or give up social media and/or a device (e.g., cell phone, laptop, tablet).” Guiding questions for the fast included, <i>which social media platform or device did you decide to give up? For how long? What do you think was gained or lost? How did you feel about the experience? Would you have your future students social media- or techno-fast in some form? Why or why not?</i> PSTs wrote reflection on their experiences.	Data included fast reflections for 60 PSTs. We coded reflections.
Reflection and Social Media Plan*	We assigned a final survey on the effects of the assignment activities during the class. Within the survey, we asked PSTs to reflect on their professional social media practices on Twitter during the semester and develop a social media plan for their future classrooms.	Much of this data pertains to “the mindful exploration” and was not included in the paper, but pertinent diary and fast responses were included.

**Table 2**  
Social media diary entries (<sup>a</sup>N = 516).

Characteristics	Frequency (%) of entries
<b>Medium</b>	
Facebook	207 (40.1%)
Instagram	74 (14.3%)
Snapchat	69 (13.4%)
Twitter	58 (11.2%)
Pinterest	34 (6.6%)
Facebook Messenger	14 (2.7%)
Reddit	11 (2.1%)
Tumblr	7 (1.4%)
WhatsApp	6 (1.2%)
<b>Device</b>	
Phone	415 (80.6%)
Computer	93 (18.0%)
Tablet	7 (1.4%)
Miscellaneous	1 (0.2%)
<b>Social media entry quality</b>	
Neutral	234 (45.3%)
Beneficial	200 (38.8%)
Detrimental	82 (15.9%)

Note. Medium entries must be >1% to be included in table.

<sup>a</sup> N = Number of entries, not number of participants.

these principles.

### 6.2.1. Mindful attention to present experience

Levy (2016a) contended that in taking stock of their practices online, “[Students] come to see how they’ve allowed their online activities to be governed by unexamined rules and expectations, as well as unconscious habits” (p. 25). Our social media assignment was developed with this aim of focusing pre-service teachers’ attention on their social media habits, ideas, and behaviors. The initial survey required participants to identify their beliefs and practices and then the diary and fast asked them to closely focus on their present social media experiences, including internal feelings or impulses and external distractors or relationships. Our pre-service teachers offered detailed recounts of their personal findings to identify, for example, habits that had become routine and mindless parts of their day. A number of participants shared that the fast helped them realize how strong and subconscious their social media checking had become. Twenty-nine PSTs shared about either checking social media without realizing it (n = 18) or feeling a compulsion to do so (n = 11) and seven participants had to delete apps or hide devices (n = 7) to complete the fast. Giving mindful attention in their present experiences yielded personal discoveries that could help them grow as professionals and design activities for future students.

these principles are the only guidelines educators should use or that they are applied in the same ways across contexts. However, Levy’s long term work in this area and our empirical study support



### 6.2.2. Priority to students' own discoveries (not general rules or principles)

We believed it was important for participants to recognize their own experiences before sharing with groups (see also Damico & Whitney, 2017; Mao, 2014). While we identified some significant similarities among participants' discoveries (e.g., use of Facebook and smartphones, more detrimental experiences on Facebook), we also reviewed unique revelations. This is at least in part because our students analyzed their varying social media practices and chose different devices and durations for their fasts. Some participants shared how checking social media to alleviate boredom left them unfulfilled, led to unexpected losses of larger than anticipated chunks of time or "internet blackouts" (Levy, 2016a, p. 42), and a disconnection from the physical world around them. Several PSTs mentioned their mindless habit of "hovering over the [Snapchat] icon" or realizing that typing into Facebook had become "unconscious" and some participants developed plans for regaining control of such compulsions.

### 6.2.3. Group sharing and reflections on these discoveries

As instructors, we found that sharing experiences provided PSTs support and ideas for developing personal and professional guidelines and encouraged them to consider possible ways to do this assignment, or variations of it, with future students. In their reflections, our pre-service teachers identified numerous areas of concern or promise that would help them develop personal and professional guidelines for using social media. PSTs identified changes they hoped to make and these identifications often led to reflections on how to translate these lessons into future teaching situations. A graduate student reflected that the fast caused him to pay "more attention" to his sons' activities when off social media (Twenge, 2017) and a PST identified her own shortcomings in using social media saying that she did "not think many students understand how much time they spend on social media."

### 6.2.4. Recognition and room for complexity, even contradictions

Researching social media practices is challenging because the platforms and uses vary so widely and this was evident in this study (see also Levy, 2016a). However, uses and experiences with Facebook offers a glimpse of the types of contradictions in individual uses of social media. Paradoxically, Facebook was the most widely used medium ( $n = 50$ ), but PSTs rated their uses of Facebook as the lowest quality of any platform,  $\chi^2(10, N = 516) = 23.75, p < .01$ , thus suggesting that social media platform choice may not be connected to whether experiences on that platform are of a high quality. Instead, choices may be more related to network effect, or the phenomenon that a platform gains value simply because other people in your network use it. These contradictions were also evident in open-ended reflections where some participants complained that reading political posts on Facebook were a source of personal discontent and a fellow classmate explained how Facebook allowed her to engage in meaningful activism and connect with like-minded partners. Moreover, while PSTs rated the quality of their social media check-ins slightly above neutral, some described their experiences as increasing their stress and others viewed their social media check-ins as a relieving and relaxing. Discussions around personal findings often required students to consider their social media experiences within the context of their experiences, habits, and priorities, and this led to complex and contradicting data.

### 6.2.5. Creating a safe and trusting environment

When introducing the social media assignment to our classes, we emphasized that there were no right or wrong answers as long as students engaged thoughtfully with the different activities. We

particularly sought to use the initial survey to identify potential concerns like when author 2 contacted a student who had given up social media to ensure she was comfortable completing the assignment. We also regularly checked in with students and discussed those aspects of the assignment which might cause them anxiety. We offered an alternative assignment if needed, but no PSTs requested it. Our students were at least comfortable enough to share their vulnerabilities or personal shortcomings and, in their fast reflections, eight participants even mentioned being "addicted" to social media in some form or another. We do not believe educators should complete this assignment or similar ones unless a safe, trusting, and responsive environment can be created.

## 7. Implications

### 7.1. Teaching

Smartphones and other technologies are nearly ubiquitous parts of the daily lives of many students and teachers. We believe the findings from our study suggest that pre-service teachers use social media in ways they deem beneficial and detrimental and they often identified ways to shift practices and habits and stated that their future students would benefit from engaging in similar activities (e.g., social media- or techno-fast,  $n = 49$ ). Yet, teacher candidates must wrestle with their uses first if they are to help their students engage in similar activities. Building upon the recommendations of Krutka et al. (2017) and Levy (2016b), we believe that our study moves towards clarifying a pragmatic and responsive social media pedagogy that educators can utilize to guide their lessons and curriculum.

While we do not believe that every teacher educator or teacher must explicitly develop lessons regarding social media and mindfulness, they should be present in students' school experiences (Krutka & Carpenter, 2016). Teacher educators and teachers must create activities that allow individuals an opportunity to cultivate mindfulness around their own practices. For those hoping to use our social media assignment in whole or in part, we recommend discussing different components of the assignment with students along the way. For example, while we and our pre-service teachers expressed satisfaction with the social media assignment overall, several pre-service teachers sought to complete the diary or fast assignments when it might be easier to do so (e.g., day of traveling, camping trip) and we had to clarify that these assignments should be completed within times when they were likely to use social media if they hoped to identify personal and professional changes.

### 7.2. Research

As we have detailed in this paper, social media is a complex topic of study that provides a moving target as platforms and habits change. We believe that more research is needed to further investigate mindfulness and technology in education. Moreover, we hope researchers will study how such practices translate to a variety of educational settings, including K-12 schools. Researchers could investigate the possibilities and challenges of implementing our social media assignment and our recommended guidelines in elementary, middle school, and high school settings across socio-economic, cultural, and geographic locations. For example, research in younger elementary grades may focus on students' ability to develop mindfulness in response to notifications or impulses related to games, tablets, or other technologies. Possible studies will vary depending on participants and contexts. Researchers concerned with K-12 settings should also understand the quality work in youth media studies that can inform such projects (e.g., Boyd, 2014; Vickery, 2017).

## 8. Conclusion

In our initial survey, our pre-service teachers indicated that they used social media for personal ( $n = 37$ ; 60%), not professional ( $n = 16$ ; 26%), purposes. However, because teacher and student uses of use social media contribute to the fabric from which our days are woven, teacher education and K-12 education must consider how we can learn to use social media “intelligently, humanely, and, above all, mindfully” (Rheingold, 2012, p. 1). However, the work of using social media mindfully cannot be conveyed in linear or prescribed ways, but must be addressed by engaging deeply with a subject that can lead to complex and contradictory discoveries from one person to the next. We believe the activities (i.e., survey, diary, fast) and guidelines (Levy, 2016b) that we present in this paper can offer insights for what educators might do to grow as mindful users and educators of social media.

## Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.tate.2018.03.009>.

## References

- Andrews, S., Ellis, D. A., Shaw, H., & Piwek, L. (2015). Beyond self-report: Tools to compare estimated and real-world smartphone use. *PLoS One*, *10*(10), 1–9.
- boyd, d. (2014). *It's complicated: The social lives of networked teens*. New Haven, CT: Yale University Press.
- Calvo, R. A., & Peters, D. (2014). *Positive computing: Technology for wellbeing and human potential*. Cambridge, MA: MIT Press.
- Carpenter, J. P. (2014). Twitter's capacity to support collaborative learning. *International Journal of Social Media and Interactive Learning Environments*, *2*(2), 103–118.
- Carpenter, J. P., & Krutka, D. G. (2014). How and why educators use Twitter: A survey of the field. *Journal of Research on Technology in Education*, *46*(4), 414–434.
- Carpenter, J. P., & Krutka, D. G. (2015a). Engagement through microblogging: Educator professional development via Twitter. *Professional Development in Education*, *41*(4), 707–728.
- Carpenter, J. P., & Krutka, D. G. (2015b). Social media in teacher education. In M. L. Niess, & H. Gillow-Wiles (Eds.), *Handbook of research on teacher education in the digital age* (pp. 28–54). Hershey, PA: IGI Global.
- Carr, N. (2010). *The shallows: What the Internet is doing to our brains*. New York, NY: W. W. Norton & Company.
- Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). London: Sage.
- Cochran-Smith, M. (1991). Learning to teach against the grain. *Harvard Educational Review*, *61*(3), 279–311.
- Cook, M. P., & Bissonnette, J. D. (2016). Developing preservice teachers' positionalities in 140 characters or less: Examining microblogging as dialogic space. *Contemporary Issues in Technology and Teacher Education*, *16*(2), 82–109.
- Damico, N., & Whitney, A. E. (2017). Turning off autopilot: Mindful writing for teachers. *Voices From the Middle*, *25*(2), 37–40.
- Emre, Ç. A. M., & Isbulan, O. (2012). A new addiction for pre-service teachers: Social networks. *TOJET - Turkish Online Journal of Educational Technology*, *11*(3), 14–19.
- Forbes, D. (2017). Professional online presence and learning networks: Educating for ethical use of social media. *International Review of Research in Open and Distance Learning*, *18*(7), 175–190.
- Gordhamer, S. (2009). *Wisdom 2.0: Ancient secrets for the creative and constantly connected*. New York City, New York: Harper Collins.
- Greeson, J. M. (2009). Mindfulness research update: 2008. *Complementary Health Practice Review*, *14*(1), 10–18.
- Harris, T. (2017, July 28). *How a handful of tech companies control billions of minds every day [Video File]*. Retrieved from [https://www.ted.com/talks/tristan\\_harris\\_the\\_manipulative\\_tricks\\_tech\\_companies\\_use\\_to\\_capture\\_your\\_attention](https://www.ted.com/talks/tristan_harris_the_manipulative_tricks_tech_companies_use_to_capture_your_attention).
- Hogan, B., & Quan-Haase, A. (2010). Persistence and change in social media. *Bulletin of Science, Technology & Society*, *30*(5), 309–315.
- Holland, D. (2006). Contemplative education in unexpected places: Teaching mindfulness in Arkansas and Austria. *Teachers College Record*, *108*(9), 1842–1861.
- Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., et al. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine*, *33*(1), 11–21.
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*(1), 491–525.
- Jennings, P. A., Snowberg, K. E., Coccia, M. A., & Greenberg, M. T. (2011). Improving classroom learning environments by cultivating awareness and resilience in education (CARE): Results of two pilot studies. *Journal of Classroom Interaction*, *46*(1), 37–48.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, *10*(2), 144–156.
- Kirschner, P. A., & De Bruyckere, P. (2017). The myths of the digital native and the multitasker. *Teaching and Teacher Education*, *67*, 135–142.
- Krutka, D. G., & Carpenter, J. P. (2016). Why social media must have a place in schools. *Kappa Delta Pi Record*, *52*(1), 6–10.
- Krutka, D. G., Nowell, S., & Whitlock, A. M. (2017). Towards a social media pedagogy: Successes and shortcomings in educative uses of Twitter with teacher candidates. *Journal of Technology and Teacher Education*, *25*(2), 215–240.
- Kurtz, J. (2009). Twittering about learning: Using Twitter in an elementary school classroom. *Hora*, *25*(1), 1–4.
- Langer, E. J. (1989). Minding matters: The consequences of mindlessness—mindfulness. *Advances in Experimental Social Psychology*, *22*, 137–173.
- Leroy, S. (2009). Why is it so hard to do my work? The challenge of attention residue when switching between work tasks. *Organizational Behavior and Human Decision Processes*, *109*(2), 168–181.
- Levy, D. M. (2016a). *Mindful tech: How to bring balance to our digital lives*. New Haven, CT: Yale University Press.
- Levy, D. M. (2016b). *NKUL 2016-mindful tech [video file]*. Retrieved from <https://www.youtube.com/watch?v=TCnH72AQhYE>.
- Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, *12*(4), 163–169.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, media and technology*, *34*(2), 141–155.
- Mao, J. (2014). Social media for learning: A mixed methods study on high school students' technology affordances and perspectives. *Computers in Human Behavior*, *33*, 213–223.
- Marich, H. (2016). Twitter in the elementary classroom: A teacher's journey. *Language Arts*, *94*(1), 67–70.
- Mason, L. E. (2018). Rest of citation redacted due to AUTHOR[details removed for peer review] reference.(in press).
- National Center for Education Statistics. (2013). *Characteristics of public and private elementary and secondary school teachers in the United States: Results from the 2011–2012 schools and staffing survey*. Retrieved from <https://nces.ed.gov/pubst2013/2013314.pdf>.
- Newport, C. (2016). *Deep work: Rules for focused success in a distracted world*. New York, NY: Little Brown.
- Pang, A. S. K. (2013). *The distraction addiction: Getting the information you need and the communication you want, without enraging your family, annoying your colleagues, and destroying your soul*. New York, NY: Hachette.
- Rheingold, H. (2012). *Net smart: How to thrive online*. Cambridge, MA: MIT Press.
- Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., et al. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology*, *105*(3), 787.
- Roeser, R. W., Skinner, E., Beers, J., & Jennings, P. A. (2012). Mindfulness training and teachers' professional development: An emerging area of research and practice. *Child Development Perspectives*, *6*(2), 167–173.
- Saldaña, J. (2016). *The coding manual for qualitative researchers*. London, England: Sage.
- Seaman, J., & Tinti-Kane, H. (2013). *Social media for teaching and learning*. Boston, MA: Pearson Learning Solutions and Babson Survey Research Group.
- Selwyn, N. (2016). Digital downsides: Exploring university students' negative engagements with digital technology. *Teaching in Higher Education*, *21*(8), 1006–1021.
- Shapiro, S. L., & Carlson, L. E. (2017). *The art and science of mindfulness: Integrating mindfulness into psychology and the helping professions* (2nd ed.). Washington, D.C.: American Psychological Association.
- Smith, E. E. (2017). Social media in undergraduate learning: Categories and characteristics. *International Journal of Educational Technology in Higher Education*, *14*(12), 1–24.
- Soloway, G. B., Poulin, P. A., & Mackenzie, C. S. (2011). Preparing new teachers for the full catastrophe of the twenty-first century classroom: Integrating mindfulness training into initial teacher education. In A. Cohan, & A. Honigsfeld (Eds.), *Breaking the mold of pre-service and in-service teacher education* (pp. 219–227). New York, NY: Roman & Littlefield.
- Sriwilai, K., & Charoensukmongkol, P. (2016). Face it, don't Facebook it: Impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion. *Stress and Health*, *32*(4), 427–434.
- Tremmel, R. (1993). Zen and the art of reflective practice in teacher education. *Harvard Educational Review*, *63*(4), 434–459.
- Troop, D. (2010, September 16). *Harrisburg U's social-media blackout is more of a brownout*. The Chronicle of Higher Education. Retrieved from <http://www.chronicle.com/article/Harrisburg-U-Social-Media/124510/>.
- Trust, T. (2012). Professional learning networks designed for teacher learning. *Journal of Digital Learning in Teacher Education*, *28*(4), 133–138.
- Trust, T., Krutka, D. G., & Carpenter, J. P. (2016). "Together we are better": Professional learning networks for teachers. *Computers & education*, *102*, 15–34.
- Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. New York, NY: Basic books.
- Twenge, J. M. (2017). *iGen: Why today's super-connected kids are growing up less*

*rebellious, more tolerant, less happy—and completely unprepared for adulthood—and what that means for the rest of us.* New York, NY: Simon & Schuster.

Vickery, J. R. (2017). *Worried about the wrong things: Youth, risk, and opportunity in the digital world.* Cambridge, MA: MIT Press.

Visser, R. D., Evering, L. C., & Barrett, D. E. (2014). # TwitterforTeachers: The implications of Twitter as a self-directed professional development tool for K–12 teachers. *Journal of Research on Technology in Education*, 46(4), 396–413.

Wright, N. (2010). Twittering in teacher education: Reflecting on practicum experiences. *Open Learning*, 25(3), 259–265.

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. *Frontiers in Psychology*, 5, 1–20.

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