Research in Social Sciences and Technology

https://ressat.org

E-ISSN: 2468-6891

Volume: 8 Issue: 2 2023

pp. 101-115

Social Studies and Social Media: Status among K-12 Tennessee Teachers before COVID

Joshua Kenna*[a] & Matthew Hensley[b]

* Corresponding author
Email: jkenna@utk.edu

a. University of Tennessee, USA

b. East Tennessee State University, USA

Article Info
Received: March 2, 2023
Accepted: April 18, 2023
Published: May 5, 2023

10.46303/ ressat.2023.14

How to cite
Kenna, J. & Hensley, M. (2023). Social Studies and Social Media: Status Among K-12 Tennessee Teachers Before COVID. *Research in Social Sciences and Technology*, 8(2), 101-115
https://doi.org/10.46303/ressat.2023.14

ABSTRACT
Technology integration has received a significant amount of money from the budgets of schools in the United States, even prior to COVID-19. Social media as an instructional tool was also receiving growing attention. However, since COVID-19 it seems that there is an even larger shift in the calls to use social media. The purpose of this survey study was to report K-12 Tennessee social studies teachers' self-reported social media use just prior to the COVID-19. Moreover, we compared teachers' use of social media based on geography, grade level and teaching experience. Findings suggest that teachers rarely used social media in their teaching; however, statistically significant findings were discovered based on teaching experience.

KEYWORDS
Social media; social studies; Tennessee; Web 2.0

INTRODUCTION

The origins of the term “social media” is often thought to occur sometime in the early or mid-1990s, and many who claim to first use the phrase were often part of AOL, or America Online (Bercovici, 2010). The concept of utilizing technology to find and establish social networks; however, has roots dating back to the late 1960s or early 1970s with Bulletin Board Services (Shah, 2016). Still, the explosion of social media and social networks began in the late 1990s with a shift in how the Internet engaged users; that is, it pivoted towards a system that actively encouraged users to provide content rather than simply consume content. In 1999, Darci DiNucci referred to this shift as Web 2.0 in an article titled “Fragmented Future”. To be clear, Web 2.0 does not refer to specific technological upgrades to the Internet; though, technological upgrades such as smartphones enhanced Web 2.0 capabilities. In 2005, The Pew Research Center (2021) began tracking social media adoption, which equated to 5% of the U.S. adult population, or nearly 11 million individuals. Fast forward some two decades and the world of social media and social networks is seemingly inescapable for the average U.S. adult. In fact, according to the Pew Research Center’s most recent data in 2021, 72% of the U.S. adult population, or approximately 186 million adults, utilize at least one social media site.

Researchers in a plethora of fields, including educational researchers began to study and publish works related to social media and social networks. Generally, two camps of publications began to emerge. The first camp focused on sharing practical ways in which to utilize social media as a teaching and learning tool (Chapman, 2019; Gleason & Von Gillern, 2018; Greenhow & Chapman, 2020; Greenhow et al., 2020). The second camp began to study how educators can and do use social media for forms of formal and/or informal professional development (Carpenter & Krutka, 2014; Visser et al., 2014; Trust et al., 2016). More recently, education scholarship has extended investigations of social media use in education by examining the impacts of social media on pre-service teachers in EPP programs (Carpenter et al., 2023). Today, thanks to a host of technological advancements and application developments, what qualifies as social media has expanded beyond the likes of Facebook and Twitter — although they are still wildly popular. In fact, many would argue that cloud services such as Google Drive and SharePoint, have developed into a form of social media. Learning Management Systems such as Canvas and Blackboard have also adapted social media elements. Moreover, as a result of the global pandemic — COVID-19 — many technological and social media brands exploded in 2020 including Zoom and TikTok, respectively.

As with all trends, researchers best understand them when there is a baseline of data, which leads to the purpose of this study. Through a serendipitous event, we collected comprehensive data from 169 Tennessee K-12 social studies teachers for a larger study in the late fall of 2019, just prior to the word COVID-19 joining the worlds’ collective lexicon. A small subset of the data collected relates to teachers' technology and social media instruction. Though the data may seem ancient in technology years, it provides a simple snapshot of what social

media instruction looked like prior to the pandemic thus allowing us to establish a baseline. Among the questions the current study sought to examine were:

- What percentage of K-12 Tennessee social studies teachers utilize social media prior to COVID-19?
- Is there a statistically significant difference in social media instruction based on geography, grade level, or teaching experience.

LITERATURE REVIEW

Digital technology has certainly transformed the field of education, particularly with the advent of mobile devices and widespread availability of broadband internet access. Since its inception, teachers have used the internet to curate materials, find lesson activities, and research content to supplement their teaching (Culp et al., 2005). At the turn of the 21st century, Web 2.0 ushered in a new era of interactive digital technologies that extended teachers' use of the internet beyond merely retrieving information, which was typical for most Web 1.0 technologies (Pan & Franklin, 2011). Web 2.0 technologies emphasize user-generated content and social networking through web-based tools like blogs, wikis, videos, podcasts, collaborative platforms (e.g., Google applications), learning management systems (e.g., Canvas), and social media platforms (Pan & Franklin, 2011). For over two decades, Web 2.0 technologies have continued to emerge and evolve, opening up new possibilities for teachers and students, namely by making both teaching and learning more interactive, collaborative, and globally connected.

In the years prior to the COVID-19 pandemic, technology adoption and integration in public schools across the United States varied; however, there was a general upward trend in access to mobile technology devices (Cuban, 2009; Leachman & Mai, 2014; Rizzo, 2013). Indeed, this trend can be partly attributed to a combination of both 1:1 (one-to-one) technology programs, as well as and bring your own device (BYOD) policies in K-12 schools (Rizzo, 2013; Williams, 2014). Though education scholarship supported the integration of mobile technology to promote 21st century skills and prepare students with salient digital competencies to navigate the increasingly digital world, teachers generally struggled with effective and meaningful technology integration. For instance, Ertmer et al. (2012) highlight several barriers that stymied teachers technology integration including, school infrastructure and professional development, as well as teacher self-efficacy related to technology integration. Further, research from Molebash (2004), Dawley et al. (2010) and Kennedy and Archambault (2012) posit that many Education Preparation Programs (EPP) programs across the United States insufficiently trained pre-service teachers to have integrated knowledge of content, pedagogy, and technology. Furthermore, less than 2% of EPPs offered virtual clinical experiences that required extensive technology application and integration to support students learning (Dawley et al., 2010).

In the state of Tennessee, technology adoption and integration in K-12 schools prior to the COVID-19 pandemic, was thought to largely mirror national trends. Many school districts across the state instituted 1:1 technology initiatives, increasing student access to laptops and

tablets in the classroom (Aldrich, 2018). In 2014, the Tennessee Department of Education launched a Personalized Learning Task Force that aimed to explore and pilot initiatives to support personalized learning for Tennessee students, which included blended and online learning models (TDOE, 2016). However, some school districts faced challenges with effectively integrating technology largely due to a lack of funding and access to broadband internet (TDOE, 2016). In regard to the former, school districts struggled to regularly maintain and update instructional technology hardware and software. As a result, these school districts were likely using outdated technology and/or relied heavily on the teachers and students to provide their own technology for the classroom. In regard to the latter, many school districts, particularly in rural areas suffered from a lack of sufficient internet connectivity. According to a 2019 Pew Research report, approximately 274,000 Tennesseans had no wired internet providers where they lived and approximately 492,000 Tennesseans did not have wired internet access capable of 25mbps download speeds (Pew Research Center, 2019).

Social Media Integration in Schools Prior to COVID-19

Among the bevy of Web 2.0 tools used by educators prior to the COVID-19 pandemic, the uptake of social media is certainly noteworthy. Social media integration in K-12 schools across the United States prior to the COVID-19 pandemic varied significantly, depending largely on policies issued by individual schools and districts (Greenhow & Chapman, 2020; Greenhow et al., 2020). Education scholarship supports that teachers were using social media for a variety of purposes, supplementing professional learning (Carpenter & Krutka, 2014; Visser et al., 2014; Trust et al., 2016) and pedagogical practice (Chapman, 2019; Greenhow & Chapman, 2020; Greenhow et al., 2020). In a quantitative study, Carpenter & Krutka (2014) surveyed 755 K-16 educators in an attempt to better understand the role of Twitter in education. Findings from their study indicated that teachers largely used the social media platform to assuage the feeling of isolation, and also described their experiences using Twitter to be “superior to traditional professional development.” (pg. 414). Findings from a mixed methods study by Visser et al., (2014) concurred with Carpenter & Krutka (2014), indicating that teachers highly valued social media as a form of professional development, namely for its interactive and self-directed nature.

Likewise, teachers also recognized the benefits of integrating social media into their pedagogical repertoires, specifically to promote active learning, community building, and civic participation (Greenhow & Chapman, 2020). For instance, Thibaut (2015) reported findings from a case study of middle schoolers using Edmodo, indicating that the platform enabled students to critically evaluate writing. In another study, Batsila and Tsihouridis (2016) found that using social media for digital storytelling projects had positive impacts on students' reading and writing skills, while also boosting their self-confidence. Scholarship by Chapman (2019) concurs with Gleason and von Gillern (2018) and Kenna and Hensley (2019) that social media has the potential to augment civics education by nurturing student agency to participate in civic life. Specifically, Chapman’s (2019) phenomenological study indicated that students using social

media were able to use social media to find, share, and engage with news media, as well as connect and engage with community members and elected officials.

Current Education Research on Social Media

The COVID-19 pandemic forced schools to abruptly transition to hybrid and fully virtual models of teaching and learning. The shift highlighted the critical role of digital technology and social media in particular. Since the pandemic, education scholarship continues to explore the impact of social media on professional learning, pedagogical practice, as well as teacher education. For instance, Aguilar et al. (2021) report findings from a longitudinal study that indicate notable shifts in teachers' social media use after the pandemic, namely that teachers were more likely to connect and share. In a general review, Greenhow and Chapman (2020) highlighted challenges that teachers should be mindful of when using social media with K-12 students, such as commercialization, privacy, and norms. Further, Carpenter et al. (2023) investigated pre-service teachers' use of social media by examining nearly 49,000 tweets. Findings from this study suggest that the use of social media by pre-service teachers affords several opportunities for pre-service teachers to strengthen their professional learning networks (PLNs) before entering the field. As education scholars continue examining trends in social media use, it is critical to note that "changes in teachers' social media use in response to the [COVID-19] pandemic lends insight into the needs that they were expressing at that time" (Aguilar et al., 2021, p.11). Thus, our study aims to contribute a baseline of data related to teachers' social media use prior to the COVID-19 pandemic, which will hopefully support more sophisticated understandings of the trends examined in the future.

THEORETICAL FRAMEWORK

Technological Pedagogical Content Knowledge (TPACK) served as the theoretical framework for our study (Koehler & Mishra, 2009; Mishra & Koehler, 2006). TPACK extends the work of Shulman (1986) who posited that effective instruction requires the teacher to have a synergistic understanding of their content knowledge and pedagogical knowledge, with technological knowledge also playing a critical role (Koehler & Mishra, 2009; Mishra & Koehler, 2006). TPACK was an appropriate framework to guide our study as it enabled us to purposefully examine K-12 Tennessee social studies teachers' social media instruction, particularly at the intersections of pedagogical content knowledge, technological content knowledge, and technological pedagogical knowledge that emerged from the data.

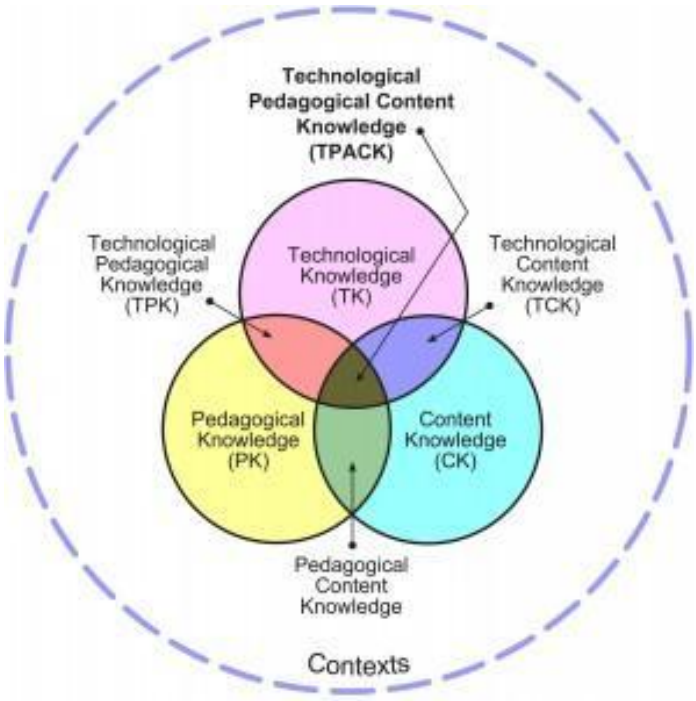

Figure 1. *TPACK Theoretical Framework http://tpack.org*

METHODOLOGY

Population and Sampling

In order to gather the necessary quantitative data to answer the research questions above, we utilized a survey research design. The survey was designed for a larger study that sought to understand the status of social studies in the state. Therefore, the population of this study included all elementary teachers and secondary social studies teachers in the state of Tennessee. According to the National Center for Educational Statistics, Tennessee had approximately 58,000 public school teachers in 2018 (National Center for Educational Statistics, 2018). Although this number includes teachers outside of our criteria, we ascertained a conservative estimation of about 42,000 teachers, which is a large number for statistical surveys. Thus, the sample size needed for this study was calculated to be approximately 150 teachers, given a margin of error of 10% (Conroy, 2018).

Given the parameters around technological infrastructure around the state of Tennessee, we also sought to utilize a multistage clustering sample, which involved first selecting clusters (i.e., schools) and then selecting individuals (i.e. teachers) (Gall et al., 2003). We clustered schools based on their geographic categorization, as identified by the National Center for Educational Statistics — rural, town, suburban, and urban. Then we located teachers within those schools.

Employing the National Center for Educational Statistic's Common Core of Data, a proportional total of schools was randomly selected from each cluster, which equated to a total of 227 schools (rural = 57, town = 39, suburban = 47, and urban = 84). Then we visited each

school's public website to select teachers. In total, 1,443 teachers were invited to participate via email in the fall of 2019, using the Tailored-Design Method (Dillman et al., 2009). There were 169 participants who provided usable responses; although it was roughly a 12% response rate, it surpassed the number needed for the sampling requirements. See Table 1 for a description of the demographics of the population sample.

Table 1. *Demographics of the Population Sample*

Gender	**169**
Female	85
Male	19
Choose not to Disclose	65
Grade Level	**169**
PK-3	71
3-5	37
6-8	31
9-12	30
Geographic Location	**169**
Rural	25
Town	27
Suburban	45
Urban	72

Instrumentation

This study utilized Fitchett and Vanfossen's (2013) *Survey of the Status of Social Studies*, which they reported to have a high internal consistency reliability estimate across the three-grade level-specific domains based as indicated by Cronbach's alpha (α) coefficients: elementary (α = 0.84), middle (α = 0.81), and high school levels (α = 0.93). The online survey was sent to participants in the fall of 2019. Participants were given 8 weeks to complete the survey and received reminders every two weeks. The survey questions are organized into eight sections: 1) School Type and Organization, 2) Instructional Practices, 3) Technology 4) Attitudes, 5) Administration, 6) Professional Development, 7) Students, and 8) Demographics. The instrument utilized logic-sequencing based on responses. That is, if a respondent indicated they were an elementary teacher it would lead them to a different set of follow up questions than if they indicated that they were a middle or high school teacher. However, every teacher was asked the same amount of questions. This particular study only utilized demographic data and self-reported data from the technology portion of the survey. There were Likert-style questions related to technology and Internet access. Plus, questions that asked teachers to estimate the frequency in which they utilized learning management systems and Web 2.0 tools.

Data Analysis

We utilized descriptive as well as inferential statistics. More specifically, we determined that the data was not evenly distributed. Therefore, we ran Kruskal Wallis tests because it is a non-parametric method for testing two or more independent variables (Stevens, 2007). Additionally, we ran a Spearman rank-order correlation test.

FINDINGS

Percentage and Correlation of Social Media Use

Of the 169 participants that responded to the survey, a 100 (59%) self-reported that they utilized learning management systems such as Canvas, Blackboard, or Google Classroom in their teaching. Fifteen percent of the teachers (*n* = 26) noted that they used it with regular frequency (1-2 times per day) and nearly 9% of teachers (*n* = 15) indicated that they used it daily. Conversely, 69 (41%) respondents reported that they did not utilize any learning management systems in their teaching. When it came to Web 2.0 utilization (e.g., Facebook, Twitter, blogs, etc.…), only 38 (22%) teachers indicated that they used it at all. Unlike with learning management systems, no teachers indicated daily use and only 6 teachers (3%) reported that they used it frequently (1-2 times per week). A whopping 131 teachers (76%) reported that they never used social media as a part of their teaching. Figure 2 shows a more detailed report of the findings, and it also reveals that teacher self-reported use of social media was not normally distributed.

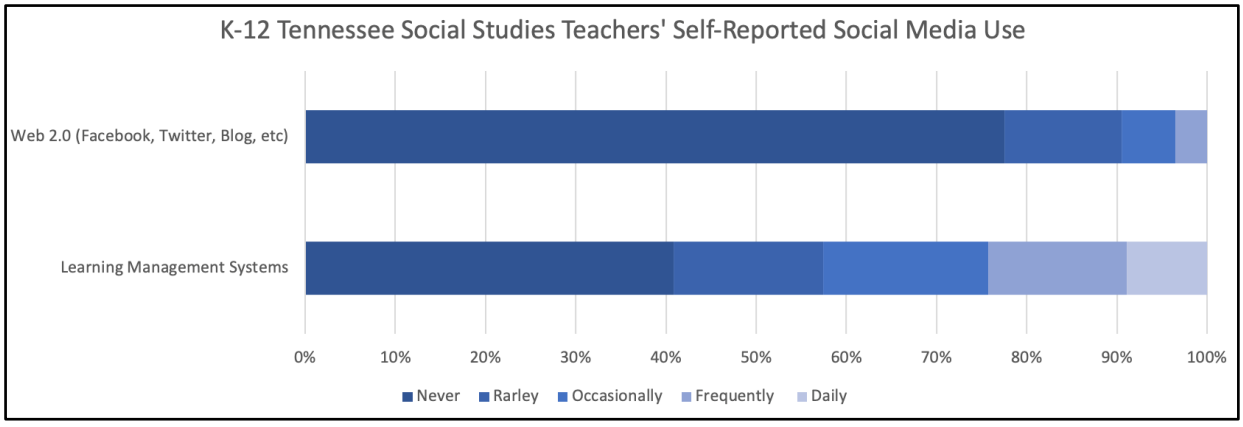

Figure 2. *K-12 Tennessee Social Studies Teachers' Self-Reported Social Media Use*

Given that we are including learning management systems and Web 2.0 technologies as social media use, we also ran a Spearman rank-order correlation test between teachers' self-reported use of learning management systems and Web 2.0 technologies. The test revealed that there was a positive correlation between the two technologies, which was statistically significant (r_s (167) = .301, p = < .001).

Teaching Experience and Social Media Use

The participants' teaching experience ranged from 0 to 40 years. The mode was 19 years (*n* = 8) and 20 years (*n*= 8), respectively. While the mean teaching experience was16 years and the median years of teaching experience was 20 years. The participants' responses were categorized into five groups: (a) 0 – 4 years (*n* = 17), (b) 5 – 10 years (*n* = 24), (c) 11 – 19 years (*n* = 37), (d) 20 – 29 years (*N* = 41), and (e) 30 plus years (*N* = 9). Since teachers' social media use was not normally distributed and we had five independent variables. The Kruskal Wallis test. revealed that there was a statistically significant difference in mean rank based on their years of teaching experience (x^2 = 10.81, df = 4, p = .029). A pairwise comparison showed that the mean rank of teachers with 5-10 years of teaching experience (MR = 77.9) was significantly higher than three groups: 0-4 years (MR = 59), 11-19 years (MR = 60.64) and 20-29 years (MR = 60.17). Surprisingly, there was no statistically significant difference with teachers in the 30 plus years group (MR = 74.78). See Table 2 for an overview.

Table 2. *Overview of Teaching Experience*

Teaching Experience	Number	Mean Rank
0-4 years	17	59.0
5-10 years	24	77.9
11-19 years	37	60.64
20-29 years	41	60.17
30 or more years	9	74.78
Unknown	41	-
Total	**169**	**66.50**

Grade Level and Social Media Use

We asked participants to categorize themselves into four grade level bands: PK-3rd grade (*n* = 71), 3rd – 5thgrade (*n* = 37), 6th – 8th grade (*n* = 31), and 9th -12th grade (*n* = 30). The Kruskal Wallis test indicated that there was no statistically significant difference in mean rank based on the grade level (x^2 = 2.68, df = 3, p > .05). The mean ranks of the four groups were as follows: PK-3rd grade (MR = 86.8), 3rd - 5th grade (MR = 76.77), 6th – 8th grade (MR = 89.5) and 9th – 12th grade (MR = 86.25). See Table 3 for an overview.

Table 3. *Overview of Grade Level*

Grade Level	Number	Mean Rank
PK-3 grade	71	86.8
3-5 grade	37	76.77
6-8 grade	31	89.5
9-12 grade	30	86.25
Total	**169**	**84.83**

Geography and Social Media Use

Participants were categorized into four geographic regions (i.e., rural, town, suburban, and urban) based on the National Center for Educational Statistics. In total, 25 teachers were labeled as working in rural schools, 27 in town schools, 45 in suburban schools and 72 in urban schools. The Kruskal Wallis tests signified that there was no statistically significant difference in mean rank based on teachers' geography ($x^2 = 3.02$, df = 3, $p > .05$). The mean ranks of the four groups were as followed: rural teachers (MR = 90.3), town teachers (MR = 84.48), suburban teachers (MR = 90.41) and urban teachers (MR = 79.97). Additionally, according to teacher's self-reporting there was no statistically significant difference between their access to computers and Internet connectivity based on geography ($x^2 = 2.68$, df = 3, $p > .05$) or grade level ($x^2 = 1.81$, df = 3, $p > .05$). See Table 4 for an overview.

Table 4. *Overview of Grade Level*

Geographic Location	Number	Mean Rank
Rural	25	90.3
Town	27	84.48
Suburban	45	90.41
Urban	72	79.97
Total	**169**	**86.29**

DISCUSSION

Percentage and Correlation of Social Media Use

The data came from a larger study where we set out to explore the status of social studies in Tennessee; however, when combined with the events of 2020, we realized the value this data has in establishing a benchmark of teachers' social media utilization just prior to COVID. The results that 59% of K-12 social studies teachers in Tennessee utilized some learning management services and 22% utilized some Web 2.0 technologies may not come as a surprise to those who have been entrenched in the field. Afterall, learning management systems have been promoted and advertised for years leading up to 2020. Additionally, the literature advocating for the use of social media at that time was often sparse and idealistic (Waters & Hensley, 2020).

Perhaps the most telling finding was to see that there was a statistically significant positive correlation between teachers' self-reported use of learning management systems and Web 2.0 technologies. That is, teachers who utilized learning management systems more frequently also tended to utilize Web 2.0 technologies. Given the increased utilization of online teaching shortly after the onset of COVID, it would be of particular interest to see if this correlation still holds true today after most restrictions have been lifted. If it does not, can we expect it to ever come back? If so, when? Finally, what reasons might there be for this positive correlation? Is it due to teachers' comfort level with technology or could there be other reasons?

Social Media Use Based on Teaching Experience, Grade Level, and Geography

The fact that there was no statistically significant difference in K-12 Tennessee social studies teachers' use of social media based on geography or grade level is a bit surprising. Afterall, most of the literature leading up to the 2019 year indicated that rural teachers had access to fewer technology resources and slower Internet bandwidth. However, the findings are seemingly more indicative to a rather small usage of social media for instructional purposes than it is to teachers' relative technological resources. For what it's worth, we asked teachers to self-report about their technological resources and access to Internet connectivity and there was no statistically significant difference based on geography or grade level.

The one area that we did find statistically significant difference was with teachers' years of experience. We grouped teachers into five groups. It is important to explain the grouping, as this can alter the statistical findings. The first group was organized with teachers who identified as having the 0-4 years of teaching experience. These are beginning teachers. We created it because the first five years are often referred to as the "surviving years". The next grouping was 5-10 years, and these years are often the proofing years. These individuals begin to perfect their craft but are still malleable enough to adopt new pedagogical practices. The next grouping was 11-19 years; these teachers are often set to complete their entire professional lives as teachers, and they can begin to be labeled as veteran educators. The fourth and fifth groups are teachers with 20-29 and 30-plus years of experience, respectively. Both groups are clearly veterans, but they have enough of a difference between them to warrant a separate categorization.

The findings indicated that teachers with 5-10 years of experience utilized social media more frequently as part of their instruction than any other group with the exception of teachers with 30 plus years of experience. However, teachers with 30 plus years of experience had no statistically significant difference with any other group. The findings seem to uphold the idea that beginning teachers are still learning the craft and thus are perhaps not comfortable enough to use social media with their students. Moreover, teachers with 11-19 and 20-29 are clearly veterans who have developed their way of teaching, which has often not included social media. What was most peculiar is that there was no statistically significant difference between teachers with 5-10 and 30-plus years of experience. The only speculative conclusion we could account for was that older teachers may know they are disconnected from youth and must go out of their way to connect. Again, that is merely a speculation, and more research is needed to confirm it. The small sample size may also play a role.

Limitations of Study

There were several limitations within this study, as is the case with any research study. The following list of limitations is offered to readers so that they can have a more complete picture of this research study. The data is reflective of K-12 public school teachers from one state. Therefore, the results of this study may not be generalizable to teachers outside of that state. All the data used in this study is self-reported. For that reason, all the results were limited by the honesty and reliability of the participants who provided information from this study.

Conclusions

According to a TPACK framework, teachers ought to have a synergistic understanding of their content knowledge and pedagogical knowledge, with technological knowledge also playing a critical role. While teachers can develop a TPACK framework without utilizing social media, the COVID-19 pandemic indicated how important social media presence really is within a teachers' technology knowledge (Greenhow & Chapman, 2020; Greenhow et al., 2020). With this in mind, our study indicated that very few K-12 Tennessee social studies teachers had a strong understanding on how to utilize social media within their instruction. However, we did learn that a small subset of relatively young teachers (i.e., 5-10 years) used social media with a higher frequency than their counterparts; albeit, they still had a relatively low mean-rank score (MR = 77.9). Further research is needed to determine if there have been any significant changes in K-12 Tennessee social studies teachers' use of social media as an instructional tool. Moreover, future studies can collect more detailed quantitative and qualitative data about teachers' social media usage with students. While there are certainly many challenges a teacher might face when attempting to integrate social media into their instructional repertoire, one thing is clear, social media will continue to play a significant role in the lives of adults and students alike for many years to come.

REFERENCES

Aguilar, S. J., Rosenberg, J. M., Greenhalgh, S. P., Fütterer, T., Lishinski, A., & Fischer, C. (2021). A different experience in a different moment? Teachers' social media use before and during the COVID-19 pandemic. *AERA Open*, *7*. https://doi.org/10.1177/23328584211063898

Aldrich, M. W. (2018). Tennessee has big gaps in school technology access, but no extra money. Here's Haslam's plan. *Chalk Beat*. https://tn.chalkbeat.org/2018/10/24/21105992/tennessee-has-big-gaps-in-school-technology-access-but-no-extra-money-here-s-haslam-s-plan

Batsila, M. & Tsihouridis, C. (2016). 'Once upon a time there was...' A digital world for junior high school learners, *International Journal of Emerging Technologies in Learning*, *11*(3), 42-50.

Bercovici, J. (2010, December 9). Who coined 'social media'? Web pioneers compete for credit. *Forbes*. https://www.forbes.com/sites/jeffbercovici/2010/12/09/who-coined-social-media-web-pioneers-compete-for-credit/?sh=3355e91a51d5

Carpenter, J., & Krutka, D. (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., Morrison, S. A., Rosenberg, J. M., & Hawthorne, K. A. (2023). Using social media in pre-service teacher education: The case of a program-wide twitter hashtag. *Teaching and Teacher Education*, *124*, https://doi.org/10.1016/j.tate.2023.104036.

Chapman, A. L. (2019), *Meeting them where they are: the use of Twitter in youth civic education* (Publication No. 1085674533) [Doctoral dissertation, Michigan State

University]. ProQuest Dissertations Publishing. https://doi.org/doi:10.25335/8qbp-br96.

Conroy, R. M. (2018). *The RCSI sample size handbook*. https://doi.org/doi:10.13140/RG.2.2.30497.51043.

Cuban, L. (2009). *Oversold and underused: Computers in the classroom.* Harvard University Press

Culp, K. M., Honey, M., & Mandinach, E. (2005). A retrospective on twenty years of education technology policy. *Journal of Educational Computing Research*, *32*(3), 279–307. https://doi.org/10.2190/7W71-QVT2-PAP2-UDX7

Dawley, L., Rice, K., & Hinks, G. (2010). *Going virtual 2010! The status of professional development and unique needs of K-12 online teachers*. International Association for K-12 Online Learning (iNACOL). https://aurora-institute.org/wp-content/uploads/goingvirtual3.pdf

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored-design method.* Wiley & Sons.

DiNucci, D. (1999, April). Fragmented future. *Print Magazine*, 53(4), 221-222. http://darcyd.com/fragmented_future.pdf

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, *59*(2), 423-435. https://doi.org/10.1016/j.compedu.2012.02.001.

Fitchett, P.G. & VanFossen (2013). Survey on the Status of Social Studies: Development and analysis. *Social Studies Research and Practice*, *8*(1), 1-23. https://doi.org/10.1108/SSRP-01-2013-B0001.

Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction*. Allyn & Bacon.

Gleason, B. & Von Gillern, S. (2018), Digital citizenship with social media: participatory practices of teaching and learning in secondary education, *Journal of Educational Technology and Society*, *21*(1), 200-212. http://www.jstor.org/stable/26273880

Greenhow, C., & Chapman, A. (2020). Social distancing meet social media: digital tools for connecting students, teachers, and citizens in an emergency. *Information and Learning Sciences*, *121*(5/6), 341-352. https://doi.org/10.1108/ILS-04-2020-0134.

Greenhow, C., Galvin, S. M., Brandon, D. L., & Askari, E. (2020). A decade of research on K–12 teaching and teacher learning with social media: Insights on the state of the field. *Teachers College Record*, *122*(6), 1-72. https://doi.org/10.1177/016146812012200602.

Kenna, J. L., & Hensley, M. A. (2019). Utilizing social media to promote civic engagement in the social studies classroom. *The Social Studies*, *110*(2), 86-94. https://doi.org/10.1080/0377996.2018.1524360.

Kennedy, K., & Archambault, L. (2012). Offering preservice teachers field experiences in K-12 online learning: A national survey of teacher education programs. *Journal of Teacher Education*, *63*(3), 185-200. https://doi.org/10.1177/0022487111433651.

Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education*, *9*(1), 60-70. https://citejournal.org/volume-9/issue-1-09/general/what-is-technological-pedagogicalcontent-knowledge/

Leachman, M. & Mai, C. (2014). *Most states still funding schools less than before the recession*. Center on Budget and Policy Priorities. http://www.cbpp.org/cms/index.cfm?fa=view&id,4213

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teachers' knowledge. *Teachers College Record*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Molebash, P. (2004). Preservice teacher perceptions of a technology-enriched methods course. *Contemporary Issues in Technology and Teacher Education*, *3*(4), 412-432. https://www.learntechlib.org/primary/p/21919/.

Pan, S. C., & Franklin, T. (2011). In-service teachers' self-efficacy, professional development, and web 2.0 tools for integration. *New Horizons in Education*, *59*, 28-40. https://www.learntechlib.org/p/110668/.

Pew Research Center. (2021). Internet/broadband fact sheet. https://www.pewresearch.org/internet/fact-sheet/internet-broadband/

Pew Research Center. (2021, April 7). *Social media fact sheet*. https://www.pewresearch.org/internet/fact-sheet/social-media/

Rizzo, S. K. (2013). *Making the shift: A phenomenological study of teachers' experiences in student-centered, 21st century laptop program* (Publication No. 3562455) [Doctoral dissertation, Nova Southeastern University]. ProQuest Dissertations and Thesis Database.

Shah, S. (2016, May 14). The history of social networking. *Digital Trends*. https://www.digitaltrends.com/computing/the-history-of-social-networking/

Stevens, J. P. (2007). *Intermediate statistics: A modern approach*. Routledge.

Tennessee Department of Education (TDOE). (2016). *Personalized Learning Task Force Report* https://www.tn.gov/education/instruction/personalized-learning.html

Thibaut, P. (2015), Social network sites with learning purposes: exploring new spaces for literacy and learning in the primary classroom, *Australian Journal of Language and Literacy*, *38*(2), pp. 83-94.

Trust, T., Krutka, D., & Carpenter, J. (2016). Together we are better: Professional learning networks for teachers. *Computers & Education, 10*, 15-34. https://doi.org/10.1016/j.compedu.2016.06.007.

National Center for Educational Statistics (2018). *Digest of education statistics*, https://nces.ed.gov/pubs2020/2020009.pdf.

Visser, R., Evering, L., & Barrett, D. (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. https://doi.org/10.1080/15391523.2014.925694.

Waters, S., & Hensley, M. (2020). Measuring rural P-12 teachers' attitudes, perceptions, and utilizations of social media. *Research in Social Sciences and Technology*, *5*(3), 25-54. https://doi.org/10.46303/ressat.05.03.2.

Williams, N. L. (2014). *One-To-One Computing and Student Achievement in Ohio High Schools* [Doctoral dissertation, Youngstown State University]. OhioLINK Electronic Theses and Dissertations Center. http://rave.ohiolink.edu/etdc/view?acc_num=ysu1411474599