Theory & Practice in Rural Education (TPRE)
2019, Vol. 9, No. 1, pp. 91-104
 ISSN:2642-7170
https://doi.org/10.3776/tpre.2019.v9n1p91-104

Globally Connected: Using Twitter to Support Rural Preservice Teachers

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Rural teachers face unique challenges, including limited resources, professional development, and support, leading many to quit the profession, especially new teachers. As the problem of rural teacher retention swells, teacher educators may find the social media tool Twitter useful in preparing novice teachers for teaching in rural communities. This article examines current practices in preparing rural preservice teachers, as well as strengths and challenges of rural schools. Previous research into using Twitter to support preservice teachers' access to resources, professional development opportunities, and emotional needs in the teacher education program and beyond are highlighted. Guidelines for using Twitter with rural preservice teachers are also provided, including rural education hashtags, professional Twitter users, and the only known Twitter chat for rural education supporters.

***Keywords*: rural education, teacher education, preservice teachers, Twitter, social media**

Teacher attrition is a growing concern nationwide, and rural schools are particularly affected (Ingersoll, Merrill, & Stuckey, 2014). Across the nation, almost one in five new teachers quit within the first five years (Gray, Taie, & Rear, 2015), due primarily to work stress, including lack of adequate classroom resources, insufficient professional development, lack of support, little input in decision making, poor leadership, unattainable accountability systems, student misbehavior, and low salaries (Aud et al., 2011; Ingersoll et al., 2014). These issues are specifically cited by rural teachers who choose to leave the profession (Lazarev, Toby, Zacamy, Lin, & Newman, 2017; Preston, Jakubiec, & Kooymans, 2013).

Historical data suggest teacher turnover in rural schools has been a problem for decades. Teacher turnover rates in rural areas have been measured at 30–50% (Davis, 2002; Helge & Marrs, 1982; Stone, 1990; Williams & Cross, 1985), about twice as high as the national average (Gray et al., 2015). Ingersoll (2001) found smaller schools experienced higher teacher turnover rates than those with higher student enrollment. In particular, the highest rate of teacher turnover is found in rural schools with fewer than 300 students (Ingersoll, 2001).

Teacher preparation programs are now being looked to when issues of teacher attrition arise. The Tennessee state legislature recently signed a bill into law holding teacher training programs responsible for first-year teachers' evaluation scores, effective January 2019 (Tennessee General Assembly, 2018). State-approved institutions offering teacher licensure programs must now provide low-performing first-year teachers with some type of remediation, such as online coursework, free of charge. As more teacher education programs are legally held responsible for new teachers' evaluation scores, teacher educators can look to new and innovative ways to prepare preservice teachers for the rigors of teaching, especially in rural areas where unique

factors may negatively impact teachers' evaluation scores.

Though no one-size-fits-all approach exists in preparing rural teachers for teaching in rural communities, teacher educators may find the social media tool Twitter useful. This article examines current practices in preparing rural preservice teachers as well as strengths and challenges of rural schools. We then address ways that Twitter can help support rural teachers' access to resources, professional development opportunities, and connections to other educators for mentoring and support in the teacher education program and beyond. We provide guidelines for using Twitter with rural preservice teachers for teacher educators who wish to implement Twitter into coursework or perhaps offer instruction on the tool at a workshop or as part of induction procedures. We also highlight popular rural education hashtags, Twitter users of interest, and the only known Twitter chat geared toward rural education supporters.

Theoretical Perspective

Using technology to impact teaching and learning is common in most classrooms (Lemon, 2016). The benefits of the technological experience for students is evident in research (Cheung & Slavin, 2012; Kormos, 2018); however, the theoretical concepts for teaching and learning are strained by the inequity of resources in rural communities, teaching capacity in schools, and the technology literacy of teachers and students. Communities of practice (CoPs) offer a theoretical framework for involving in-service teachers in instructional practices, including the use of Twitter, to help address the challenges of rural educators.

The concept of social cultural learning theory (Lave & Wenger, 1991) serves as a theoretical backdrop for professional learning communities in education to help understand teaching and learning in rural communities. Lave and Wenger (1991) used an anthropological perspective to argue that learning does not entirely depend on sending and receiving knowledge. Participation in CoPs provides more authentic opportunities for learning. Smith, Hayes, and Shae (2017) conducted a critical review of CoP research from 2000 to 2014 and describe this process of acting and interacting that constitutes environments for knowledge acquisition. These CoP include the domain (key issues), the community (interested group), and the practice (tools to be explored). These principles of CoP guide our discussion of using Twitter with preservice teachers in rural schools.

Preparing Rural Preservice Teachers

First-year teachers in rural schools will likely face strained budgets, assignments to teach multiple subjects, limited professional development opportunities, geographic and professional isolation, and the pressures of accountability policies (Lazarev et al., 2017; Preston et al., 2013). Efforts to recruit teachers to work in rural schools rarely focus on preparing teacher candidates for the work that lies ahead (Azano & Stewart, 2015), and employing ill-prepared teachers in rural schools is counterproductive to student success and teacher retention.

Despite the dire need to train and equip rural educators, discussion of rural life is generally absent from university programs (Barley, 2009; Barley & Brigham, 2008; McDonough, Gildersleeve, & Jarsky, 2010). Barley (2009) and Schafft (2016) assert teacher preparation programs tend to be tailored toward the needs of urban or suburban schools rather than rural contexts, thereby limiting the potential for success of rural teacher preparation.

For teacher educators to train successful rural teachers, they must examine and question the narratives of rural teaching (Moffa & McHenry-Sorber, 2018). In a meta-analysis of literature concerning rural teachers from 1970 to 2010, Burton, Brown, and Johnson (2013) found rural teachers are often portrayed as (a) professionally isolated, (b) different from urban and suburban teachers, (c) lacking in professional knowledge/teaching credentials, and (d) particularly resistant to change. Burton et al. (2013) asserted that misrepresentations of rural teachers in the literature call attention to the need for more high-quality research into rural education.

Rural teacher candidates are an understudied demographic in teacher education research. Following calls for research into the preparation of teachers for rural placements focused on recruitment and retention (White & Kline, 2012; White & Reid, 2008), few researchers have responded. Barley and Brigham (2008) sought to address how rural teacher preparation programs can prepare candidates for teaching in rural settings and identified five promising program components: providing multiple-certification areas for prospective teachers, promoting access to distance education, recruiting individuals who already reside in rural areas, offering student-teaching experiences in rural communities, and offering courses focused on rural issues for prospective teachers.

In a larger investigation of these five components in rural teacher education preparation in the Midwest, Barley (2009) found that only 9 of 120 institutions surveyed confirmed an emphasis on rural programming and addressed at least three of the five components identified by Barley and Brigham (2008). Three institutions offered options for multiple certifications. Several offered online courses and courses to be completed at convenient rural community college locations. Four actively recruited students from rural communities. Two offered student-teaching placements in rural communities. One institution offered a special course related to rural teaching called Sociology of Rural Life and indicated rural issues were embedded within several other education courses in their programs. The study did not evaluate the success of these rural-focused programs or recruitment attempts (Barley, 2009).

In a qualitative study examining the perceptions of five rural preservice teachers and their transition to first-year teachers, Moffa and McHenry-Sorber (2018) explored tension among rural participants and their nonrural peers in teacher preparation courses. This led to some of the participants positioning themselves as *rural representatives* bent on revising their peers' misconceptions of rurality. The researchers suggest teacher educators tackle generalized misconceptions of rurality by hearing from rural students and teachers rather than relying on generalized survey data or, as Burton et al. (2013) suggest, inaccurate scholarship on rural schooling. The rural participants also voiced a range of perspectives on their university's ability to address rurality or provide place-based pedagogies in coursework, suggesting teacher education programs have some work to do in preparing students for the realities of rural teaching, especially in regard to examining not only the deficits but also the strengths of rural communities and their people (Moffa & McHenry-Sorber, 2018).

Strengths and Challenges of Rural Schools

Though they are rarely reported in the literature, rural schools have advantages (Burton et al., 2013). Low enrollment contributing to small class sizes offers benefits for teachers and students (Monk, 2007). Rural teachers have reported high levels of autonomy and work satisfaction. In addition, teacher and student relationships in rural schools have been found to be closer than those in urban and suburban contexts (Monk, 2007). Rural school principals report a higher level of perceived influence over their schools' curriculum than do suburban and urban school principals, leading to higher level of autonomy among teachers in rural schools (Quirk & Spiegelman, 2018).

A historically high level of parental engagement is another benefit of rural education (Chalker, 2002). Rural parents have rated their connectedness with schools higher than urban and suburban parents (Droe, 2015). In a quantitative study involving rural educators in three states, researchers found most rural educators perceived they were somewhat or mostly successful in engaging parents in their children's education, and an overwhelming majority reported rural parents had very high expectations for their children's academic achievement (Lin, Isernhagen, Scherz, & Denner, 2014). Although parental involvement in rural schools is challenged by time, distance, and opportunity, intentionally linking schools and parents in meaningful conversations provides another source of support for new teachers entering the profession (Zimmerle, 2015).

Despite these advantages, rural schools often encounter many more challenges related to

meeting students' needs, school funding, technology, and staffing effective teachers (Knoblauch & Chase, 2015; Miller, 2012). Rural student demographics indicate a number of challenges including a high frequency of English language learners, special needs students, and a low percentage of college-bound students (Lowe, 2006). High poverty rates are common in rural settings, which have a negative impact on teacher salaries and technological resources (Miller, 2012). While rural teachers report high perceptions of the impact of technological resources on teaching and learning (Kormos, 2018), slow Internet speeds in rural areas may inhibit their access (Redding & Walberg, 2012). According to Sundeen and Sundeen (2013), the access to technology in rural school districts is limited by funding options, availability, and capacity for usage. Districts may report an average poverty rate, but the actual poverty situation may vary greatly within districts. Schools must get creative when finding options for funding for technology. Using Twitter offers a practical avenue for networking, sharing of resources, and building the CoPs necessary for learning.

In addition, many rural schools struggle to recruit and retain highly qualified teachers (Brenner, Elder, Wimbish, & Walker, 2015; Milner, 2010). Geographic and professional isolation is a prime factor in rural teacher recruitment (Miller, 2012). Geographically isolated and economically distressed districts, in particular, offer few financial incentives or amenities to attract young teachers (Proffit, Sale, Alexander, & Andrews, 2004). After attending college for 4 years, often ending up in debt due to tuition costs, rural Appalachian teachers are more likely to quit teaching altogether than transfer between districts (Cowen, Butler, Fowles, Streams, & Toma, 2012).

A decade of research from 2005 to 2015 involving rural school districts in Oklahoma found consistently lower rates of success in recruiting teachers, especially those with more teaching experience and higher postsecondary degrees, than did nonrural districts (Lazarev et al., 2017). Researchers have offered a few considerations to improve the teacher recruitment and retention problems in rural districts. Moller, Moller, and Schmidt (2016) found preservice teachers cited concerns over salaries as a primary reason they did not plan to teach in rural areas, yet at the other end of the spectrum, preservice teachers who planned to teach in rural areas cited the values of family, home, and community as their primary reasons to stay and teach in rural areas. Similarly, Lazarev et al. (2017) found higher compensation is positively associated with successful recruitment and retention. Thus, higher wages or connections to a rural district through origin and family ties may also improve recruitment and retention of teachers in rural schools.

A qualitative study of rural Alaskan teachers revealed the following factors contributed to a sense of teacher efficacy: previous experience working with minority populations, living in rural areas, going to school in Alaska, or growing up in Alaska (Adams & Woods, 2015). These findings also suggest teachers who come from rural communities may be better prepared to work in rural schools than those who grew up in suburban or urban areas. Therefore, teacher educators may find success in marketing their programs to rural communities and encouraging rural students to return to those areas for work. As Miller (2012) noted, the greater the distance between the nearest teacher education program and a rural school, the less likely rural students were to choose teaching as a career. Thus, partnerships between teacher education programs and rural schools may help more rural students choose teaching as a career. By conducting campus visits to rural high schools to recruit students who may be interested in teaching, higher education can positively impact rural teacher recruitment.

Twitter in Teacher Education

In light of the unique challenges to recruit and retain teachers in rural communities, teacher educators may find Twitter to be one effective tool in supporting rural preservice teachers in university teacher preparation programs. Using Twitter with preservice teachers can improve their access to resources, professional development opportunities, and connections to other educators, which they can continue to utilize after graduation in their teaching placements. While these issues are not

unique to rural teachers alone, they are often more pronounced in rural areas due to the challenges of rural living.

Access to Resources

Rural schools struggle with limitations brought upon by low bandwidth more than do urban and suburban schools. While wireless connectivity in rural schools is improving, connection speeds are often slow (Herold, 2015), which may limit a teacher's access to instructional such materials as images, videos, and document downloads (Redding & Walberg, 2012). For underfunded rural schools, lack of access to educational technologies can especially widen language and learning gaps for students with disabilities or English language learners (Cheung & Slavin, 2012).

This profound lack of access to resources may be one reason students living in rural areas tend to score lower on the National Assessment of Educational Progress, a mandated high-stakes achievement test (Byrd & Brown, 2012). With limited resources, rural teachers are less able than suburban peers to prepare students for standardized tests and college readiness. Barley (2009) also points out rural educators are responsible for teaching multiple subjects and grade levels in multigrade, mixed-age classrooms, for which they are not equipped to teach, which may be another factor in the rural achievement gap.

Teacher turnover also negatively impacts student achievement (Ronfeldt, Loeb, & Wyckoff, 2013). As common sense would suggest, teachers' effectiveness at improving students' test scores increases significantly in their first few years of teaching (Henry, Bastian, & Forter, 2011; Kane, Rockoff, & Staiger, 2006). Yet if rural teachers do not stick with the same grade level and subject area(s) for several years and are instead constantly being shifted to teach different grades and subjects, it is much more difficult for teachers to hone their craft to improve teaching and learning outcomes.

Twitter can be a source of support for teachers who lack adequate curricular materials for their assigned grade level and subject areas. Surveys showed that, when Twitter was utilized in several undergraduate methods courses, preservice teachers generally held positive attitudes toward the tool's effectiveness at helping them access resources and grow as professionals (Krutka, 2014; Luo, Sickel, & Cheng, 2017; Young & Kraut, 2011). Young and Kraut (2011) investigated how using Twitter to access language-related resources impacted the perceptions of teacher education students in a course on English language arts methods and found that participants reported mostly positive attitudes toward Twitter use. Like Young and Kraut (2011), Krutka (2014) utilized Twitter with teacher education students in a course on social studies methods. Participants ranked Twitter as the most beneficial for obtaining and sharing resources and indicated using Twitter for the class would influence their likelihood of using it in the future.

Building upon this research, Luo et al. (2017) studied the impact of participating in educational Twitter live chats on the perceptions of undergraduate students in an educational technology course. On a post survey, over half of the students indicated they enjoyed the chats and were thankful for the access to resources and ideas stemming from the chats. Each of these findings suggests Twitter is a powerful tool for helping preservice teachers access resources, which is especially important for rural preservice teachers who will likely have limited access to school-funded educational resources in rural schools.

Professional Development

Rural schools face significant challenges in providing effective professional development opportunities for teachers, including geographic isolation, limited training resources, and lack of staff to support professional development efforts (Glover et al., 2016). In rural Appalachia Kentucky, teacher quality is particularly problematic. Most of the teachers in the area were born and raised in the rural Appalachia community and earned their baccalaureate degree from an Appalachia institution (Fowles, Butler, Cowen, Streams, & Toma, 2014). Students in grades K-12 have a long-standing achievement gap compared to those

in urban and less isolated areas of the region. Thus, the Appalachian Math and Science Partnership professional development program was funded and developed on the assumption that achievement gaps exist, in part, because rural teachers in Appalachia Kentucky are less prepared than teachers in other areas (Barrett, Cowen, Toma, & Troske, 2015). Findings have shown students assigned to teachers in the program achieve significant math gains (Barrett et al., 2015), demonstrating a need for ongoing, effective professional development for rural teachers.

Like their nonrural counterparts, rural teachers who spend more time on professional development have greater pedagogical knowledge, suggesting increasing professional development time may boost knowledge of instructional practices (Glover et al., 2016). In a quantitative study investigating the technology use and perceptions of teachers in different communities, those in suburban schools indicated the highest perceptions of technology effectiveness, followed by their rural peers (Kormos, 2018). Teacher educators can benefit from this insight in identifying effective technologies and working to improve the use of technology in preparatory courses. One such technology is Twitter, which can help support professional development needs of rural teachers.

Mills (2014) explored 82 preservice teachers' attitudes about using Twitter as an optional, informal professional development tool during their student teaching experience. Participants followed a private account created by Mills, who tweeted (made a post on Twitter) an average of 34 times a week for 15 weeks, the duration of the student teaching experience. Of the 82 student teachers in the program, just 35 participated in following Mills's account. Approximately 80% of those who chose not to follow Mills's account reported they forgot, put it off, or do not like Twitter. Tweets from Mills were related to pedagogy, resources, employment opportunities, general information, encouragement, small talk, digital citizenship, classroom management, and networking. Of the 35 active followers of Mills's Twitter account, 91.4% found it was either extremely or somewhat helpful as an informal professional development tool. When asked if they would continue following Mills's account after student teaching, 100% of the active followers indicated they would. Two years later, Mills followed up with those active participants and found that over half continued to actively follow the account. Mills (2014) concluded that teacher educators should support preservice teachers with additional encouragement and resources as they begin leading their own classrooms. With the limited budget for rural schools to provide quality, ongoing professional development for teachers, Twitter could serve to fill the gap for rural teachers.

Connections to Other Educators for Mentorship and Support

Another solution to the rural teacher attrition problem may be new teacher induction programs, particularly those involving mentor teachers. Empirical research documents that support and mentoring by veteran teachers has a positive effect on beginning teachers' quality of instruction, retention, and capacity to improve their students' academic achievement (Ingersoll & Strong, 2011). Teachers in their first 3–5 years of the profession who are satisfied with their preparation and who receive support as they transition into the profession are less likely to exit the profession early (DeAngelis, Wall, & Che, 2013). Furthermore, early career support is associated with improvements in teacher effectiveness (Henry et al., 2011).

Rural teachers in Alaska who were engaged in a mentor program noted the importance of being able to collaborate with other teachers and consult outside resources such as other professionals, organizations, and community members (Adams & Woods, 2015). These teachers described how their mentors helped them learn about different teaching approaches, including creative classroom management, delivering instruction, assessment ideas, and organizing students for learning.

In a similar study conducted in rural western Pennsylvania, findings suggest that preservice teacher stress is minimized by talking with other teachers and administrators (Rieg, Paquette, & Chen, 2007). In interviews with first-year teachers in rural Saskatchewan, Canada, new teachers reported coping with the stress of teaching through relationships with their mentors (Hellsten, McIntyre, & Prytula, 2011).

In conjunction with, or perhaps in some cases in lieu of, a quality new teacher induction program, rural teachers may find connecting with other educators on Twitter to be a source of support. Twitter use in teacher education programs appears to positively support preservice teachers' emotional needs by strengthening connections to peers, faculty, and other educators, as well as offering opportunities for reflection and collaboration, all of which may help reduce feelings of isolation and work stress (Benko, Guise, Earl, & Gill, 2016; Domizi, 2013; Johnson, 2016; Krutka, 2014; Lin, Hoffman, & Borengasser, 2013; Wright, 2010). Wright (2010) explored how Twitter enabled preservice teachers to develop reflective practices with one another during their student teaching experiences. Participants stated that Twitter helped them connect to other educators they already had established face-to-face relationships with and to mitigate feelings of isolation and emotional overload (Wright, 2010). Similarly, Johnson (2016) studied the perceptions of preservice teachers in their utilization of Twitter to establish a professional presence. Students reported positive feelings of being connected to other educational professionals. Domizi (2013) investigated the use of microblogging via Twitter to enhance learning and foster relationships among participants in a weekly multidisciplinary graduate seminar on teaching and pedagogy. Analyses of the data indicated Twitter use increased participants' positive attitudes about using the tool, and participants reported Twitter helped them feel more connected to the content and to one another (Domizi, 2013).

As noted earlier, Krutka (2014) found Twitter enhanced learning activities in a social studies methods course for preservice teachers, and yet another benefit was the emotional support the tool provided. Participants indicated Twitter helped foster a community feeling and enhanced students' relationships with the instructor, one another, and in-service teachers with whom they connected on

Twitter. Like Krutka (2014), Benko et al. (2016) utilized Twitter in teacher education courses and found Twitter enabled preservice teachers to connect with a larger community of practitioners outside of their own institution. If new rural teachers are not engaged in official mentor programs at their schools or their induction programs are lacking, Twitter could help them connect with colleagues for support online.

Utilizing Twitter with Rural Preservice Teachers: Guidelines for Teacher Educators

As shown in the review of literature, Twitter can support preservice rural teachers as they access educational materials, personalize their professional development, and connect with other educators around the world. Zimmerle (2018) developed guidelines for teacher educators desiring to use Twitter with preservice teachers, which have been modified for this article to fit the unique needs of preservice teachers aiming to teach in rural schools.

Before implementing Twitter with preservice teachers, teacher educators must create their own Twitter accounts and become familiar with how Twitter works. Numerous online tutorials for Twitter beginners are available on the Web, or tech-savvy faculty who already use Twitter may be asked to show colleagues how it works. Sample online tutorials include How to Set-up Your Professional Twitter Account (Zimmerle, 2017, December 18b) and How to Find Educational Twitter Chats and Use Tweetdeck (Zimmerle, 2017, December 18a).

Next, education students should create their own professional Twitter accounts as a course requirement, special workshop, or part of induction procedures. Teacher educators should encourage a professional Twitter handle, profile photo, and bio section, which can include relevant and appropriate hashtags (#) and handles. Each of these components should be modeled by the teacher educator. If students already have a personal Twitter account, they may need to create a new account that is strictly for professional purposes. Teacher education students should also be cautioned about the problems with unprofessional use of social media, which can affect future employment. Figure 1 shows an example of a professional Twitter profile page.

Figure 1. Professional Twitter profile page: an appropriate Twitter handle, profile photo, and bio section.

Table 1 lists guidelines for using Twitter in teacher education programs. These tasks should be modeled for students as they learn how to use Twitter for building supportive relationships with other educators, accessing resources, and self-directed professional development.

Evaluation of the use of Twitter in teacher education programs should be ongoing so assignments can be modified as needed. Teacher educators should reflect on how Twitter meets their goals and objectives, and students should be asked to evaluate their experience. Teacher educators may find it helpful to use a free and user-friendly digital tool such as Google Forms to survey preservice teachers for feedback. Sample survey questions may include the following:

- What are the benefits and/or challenges of connecting with other professionals on Twitter?
- What are the benefits and/or challenges of accessing educational resources via Twitter?
- What are the benefits and/or challenges of self-directed professional development through Twitter?
- Do you plan to continue using Twitter for professional purposes? Why or why not?

Conclusion

Rural schools are particularly affected by the new teacher attrition problem (Ingersoll et al., 2014). Although small class sizes and classroom autonomy are strengths of rural schools (Monk, 2007; Quirk & Spiegelman, 2018), rural teachers also face many challenges including lack of resources, limited professional training, and geographic isolation (Lazarev et al., 2017; Preston et al., 2013). As a result, teacher educators may especially feel the pressure to ensure preservice teachers are well equipped for teaching in rural schools. A greater understanding of place along with extended professional support for new teachers from higher education programs may influence the success of new teachers in rural areas (Moffa & McHenry-Sorber, 2018).

The social networking tool Twitter can be used in teacher preparation programs to improve preservice teachers' access to resources, professional development opportunities, and connections to other educators, which they can continue using in their teaching placements (Benko

Table 1

Guidelines for Using Twitter to Support Rural Preservice Teachers

Model/Actions to Take	Examples
Connect with other educators for mentorship and support.	
Develop your personal learning network.	• Follow classmates, instructors, and administrators in your teacher education program. • Follow users related to rural education: @APSURuralEd, Twitter account for the Center for Rural Education at Austin Peay State University @NREA, National Rural Education Association @Rural_Schools, Rural Schools Collaborative @RuralEd, John White, former deputy assistant secretary for rural outreach at the U.S. Department of Education @RuralEdCenter, National Center for Research on Rural Education @RuralEdNews, Twitter Account of the Rural Education special interest group (SIG 102) of the American Educational Research Association @TG_Neil, Tammy G. Neil, rural educator @TNREA, Tennessee Rural Education Association @try_rebooting, Matt McKee, rural educator and moderator of #RuralEdChat • For users you admire, examine their "following" lists to see if they include other users you would like to follow.
Participate in or start your own Twitter chats.	• A list of education chats can be accessed at https://sites.google.com/site/twittereducationchats/education-chat-calendar • One currently active chat focuses on rural education: #RuralEdChat is held on Tuesdays, 8:30 p.m. EST, and is currently moderated by Matt McKee, @try_rebooting.
Tweet and retweet other users' professional content.	• When you develop or find a good idea or resource, share it through a tweet. • Include relevant hashtags and handles to enable other users to find your tweets. • When you retweet, give credit to the original user by including *RT* in front of their handle.
Use Twitter as a networking tool.	• Tweet or direct message users such as principals with your requests for interviews and job opportunities. • Tweet or direct message users with whom you would like to collaborate on research, grants, publishing, or presenting.
Check your news feed regularly to find and share online curricular resources according to your desired content areas and grade levels.	
Create Twitter lists to curate news feeds according to different topics you are interested in.	• Content area experts related to your desired field. • Educational technology experts. • Community businesses in your desired teaching location.
Engage in self-directed professional development to develop pedagogy and keep current.	
Search for specific keywords or hashtags.	• Popular rural education hashtags: #RuralEd #RuralEdChat #MyRuralAdvantage #IAmARuralTeacher • Content-area specific hashtags, such as #Math or #Reading • Grade-level hashtags, such as #fourthgrade or #4thgrade • Educational technology, such as #edtech
Tweet your questions to other users.	• Ask rural teachers and principals questions about their communities, curriculum, students, etc., to learn more about teaching in rural areas.
Create or take a poll.	• Create a poll on a topic of interest to you, such as, "How many Internet-connected devices do students have access to in your #ruraled classroom?" • Participate in polls generated by other users to provide your input
Tweet content from other sources.	• Blogs or other websites • Pinterest • Instagram • Podcasts

et al., 2016; Domizi, 2013; Johnson, 2016; Krutka, 2014; Luo et al., 2017; Mills, 2014; Wright, 2010; Young & Kraut, 2011). The use of Twitter should be modeled and scaffolded for preservice teachers, and the guidelines in this article highlight considerations for teacher educators in incorporating the use of Twitter in their courses to improve outcomes for rural preservice and in-service teachers.

We recommend teachers and teacher educators consider the uniqueness of the rural setting and the limited, but expanding, access to technological services as facilitative factors for the use of Twitter for educational advancement (Pitler, 2011). Ongoing professional training for teachers in the use of Twitter will continue to support them in their classrooms. More research to examine the impact of social media on rural teachers, schools, and students will offer evidence for future educators seeking to make connections between research and practice.

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