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Article abstract

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Connecting Pre-service Teachers and Experienced Educators: Social Media for Lifelong Learning

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Abstract

Beginning teachers often feel isolated and either lack role models or find it difficult to reach out to more experienced teachers. An educational technology course connected beginning teachers with experienced educators using social media. An analysis of pre-service teachers' (n=15) reflections indicated that online interactions with experts had provided them with resources, role models, best practice examples, and skills for technology integration and lifelong learning. The results underscore the potential of social media, professional networks, and communities of practice to provide pre-service teachers with real-world experiences and connections with experienced teachers.

Keywords

social media ; higher education ; teacher ; technology integration ; curriculum

Résumé

Les enseignants débutants se sentent souvent isolés et soit manquent de modèles, soit trouvent difficile de faire appel à des enseignants plus expérimentés. Un cours de technologie éducative a mis en contact des enseignants débutants et des enseignants plus expérimentés à l'aide de médias sociaux. Une analyse des réflexions d'enseignants en formation (n = 15) a indiqué que les interactions en ligne avec des experts leur ont fourni des ressources, des modèles, des exemples de meilleures pratiques et des compétences pour l'intégration des technologies et l'éducation permanente. Les résultats soulignent le potentiel des médias sociaux, des réseaux professionnels et des communautés de pratique pour offrir aux enseignants en formation des expériences pratiques et des liens avec des enseignants expérimentés.

Mots clés

médias sociaux ; études supérieures ; enseignant ; intégration de la technologie ; cursus

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Introduction

In the United States, the National Education Technology Plan (NETP) of the United States Department of Education (2010) states that students have to be proficient in creating and sharing content, and in connecting with others through the use of online social networks. Education should use technology to "create engaging, relevant, and personalized learning experiences for all learners that mirror students' daily lives and the reality of their future" (U.S. Department of Education, 2010, p. 8). Teacher technology preparation and technology integration into education have been consistent themes in policies and reports in the last decade (Culp, Honey, & Mandinach, 2003; Groth, Dunlap, & Kidd, 2007), accompanied by the development of standards to prepare teachers for 21st century schools. Two examples of such standards are the Interstate New Teacher Assessment and Support Consortium (INTASC) standards and the National Education Technology Standards for Teachers (International Society for Technology in Education [ISTE], 2008) of the National Council for Accreditation of Teacher Education (NCATE). Teachers have to be able to use new technologies to create learning environments that mirror the ubiquitous use of such technologies in our lives and provide students with digital literacy skills.

Although technical skills and student attitudes have been the focus of many teacher technology preparation courses in the past (Zhao, Pugh, Sheldon, & Byers, 2002), the importance of subject matter and pedagogy when using technology, also termed technological pedagogical content knowledge, has received increased attention in the last decade (Mishra & Koehler, 2006). In addition to structuring curricula and teacher education programs to connect subject matter, pedagogy, and technology, educators and policymakers have called for the inclusion of informal learning opportunities and social media in teacher education (Bull et al., 2008). The NETP suggests that educators should "leverage social networking technologies and platforms to create communities of practice that provide career-long personal learning opportunities for educators within and across schools, pre-service preparation and in-service educational institutions, and professional organizations" (U.S. Department of Education, 2010, p. 16). Likewise, Bull et al. (2008) assert that informal learning experiences, where teachers communicate with other teachers in their own subject matter area, or in other subject matter areas, "offer a potential bridge between social media and academic content" (p. 102).

This paper reports on the redesign of a required educational technology course for pre-service teachers of social studies, the goals of which were to facilitate the appropriate use of social media for a) teaching, learning, and student engagement in social studies and b) networking, peer support, and lifelong learning.

Teacher Technology Preparation and Integration

Teachers' inadequate skills in the use of technology for teaching, their skepticism and negative attitudes towards technology, their low self-efficacy and high anxiety with technology use, and the influence of their own learning experiences on their teaching beliefs are recurring themes in the literature of the 1990s (Ertmer, 1999; Ertmer, Evenbeck, Cennamo, & Lehman, 1994; McInerney, McInerney, & Sinclair 1994; Office of Technology Assessment, 1995). Lack of exposure to technology in general, and in prior learning experiences in particular, are often cited barriers to beginning

teachers' technology use in the classroom. In the current age of ubiquitous computing, however, it can be assumed that beginning teachers and pre-service teachers aged 18 to 24 years in the United States have grown up with digital technologies (Tapscott, 1998). They use new technologies to communicate, collaborate, find information, create online identities, and rely on technology as an "essential and preferred component of every aspect of their lives" (U.S. Department of Education, 2004, p. 19). At the same time, several researchers have pointed to undergraduates' lack of sophisticated use of technology or educational technologies, their use of technology for more social than academic or professional purposes, and their inability to apply technology for their own learning (Kumar & Vigil, 2011; Lei, 2009; Smith, Salaway, & Caruso, 2009; Voithofer, 2009). Despite their increased exposure, positive attitudes, and confidence in using or trying new technologies in the new millenium, beginning teachers often struggle to integrate content, technology, and pedagogy into their teaching (Brush, Glazewski, & Hew, 2008). Although technology is increasingly being integrated into higher education, pre-service teachers still lack exposure to technology use and models of technology use for teaching in teacher education programs (Angeli & Valanides, 2005; Buckenmeyer & Freitas, 2005; Koehler, Mishra, & Yahya, 2007; Niess, 2005). Similarly, once they begin teaching, they often also lack support or role models who could help them integrate technology into their classrooms.

A further problem is the use of subject-specific resources or technologies that could be integrated into teaching. Teacher preparation programs often include a generic educational technology course that is valuable, but does not usually target the subjects that pre-service teachers are likely to teach when they enter schools. An increased focus on subject-specific content or technologies that work particularly well for a specific subject can help them meaningfully integrate technology, pedagogy, and that content. The NETP (U.S. Department of Education, 2010) and Bull et al. (2008) suggest that social media should be leveraged to connect pre-service teachers, inservice teachers, and professional organizations. Bull et al. (2008) point to the National Technology Leadership Coalition (NTLC), the National Technology Leadership Summit (NTLS), and the ISTE as areas where dialog can occur between teachers in specific subject matter areas and across subject matter areas. Providing pre-service teachers with specific online resources and mediated communities where they can communicate with other beginning teachers, experienced teachers, and teacher educators about the use of technology to teach their disciplines can benefit them not only during their teacher education programs, but throughout their teaching careers.

Teacher Technology Preparation in Social Studies

Social studies teaching and learning has traditionally been teacher-centered and characterized by teacher-guided lectures and passive listening on the part of students (Doolittle & Hicks, 2003). However, many in the field have promoted a shift toward constructivist, learner-centered pedagogy, better suited for the development of the "dispositions required of students to be active and engaged participants in public life" (National Council for the Social Studies [NCSS], 2010). A great deal of consideration has been given to the role technology can play in supporting learning opportunities for students that move beyond the mere memorization

of content and enable students to engage in critical thinking, problem-solving, inquiry, collaboration, and civic discourse (Cornbleth, 2010; NCSS, 2010). Yet while many acknowledge the potential for technology to support powerful social studies teaching and learning (Mason et al., 2000; NCSS, 2006), the unrealized potential of technology to revolutionize teaching and learning in the social studies has been well documented (Bolick, Berson, Coutts, & Heinecke, 2003; Chai, Koh, & Tsai, 2010; Swan & Hofer, 2008). Pahl (1996) found that many social studies educators remain apprehensive about integrating technology into their practice. This apprehension may stem from the fact that many social studies teachers lack the understanding and knowledge required to engage students through interactive technologies (Berson, 1996; Doolittle & Hicks, 2003; Ehman & Glenn, 1991).

Research has shown that teachers' ability to support social studies pedagogy with interactive technologies largely depends on the strength of their pedagogical reasoning skills and their ability to conceptualize how technology might support various pedagogical methods (Chai et al., 2010; Doolittle & Hicks, 2003; Koh & Divaharan, 2011). When developing pre-service teachers' ability to support social studies pedagogy with interactive technologies, consideration must be given to their past experiences as learners of social studies content. Similar to other disciplines, pre-service teachers of social studies hold preconceived notions of how teaching and learning should occur in classrooms based on their own experiences as students (Hammerness et al., 2005). Because the use of instructional technology in K-12 social studies classrooms is inconsistent and often lacks complexity (Harris, 2008; Keeler, 2008), pre-service teachers have not traditionally experienced learning the subject with new and emerging technologies (Chai et al., 2010; Keeler, 2008; Niess, 2011). They have few representations of social studies pedagogy that utilizes the power of technology, and they struggle to conceptualize how technology can be applied to various pedagogical methods of practice (Koh & Divaharan, 2011).

Therefore, it is critical that pre-service teachers have the opportunity to interact with expert teachers in the field who successfully use technology to enhance their instruction (Brush & Saye, 2009). In the past, it has been difficult to bring these two groups together due to a limited pool of experienced teachers in a geographical area who model effective uses of technology to support social studies curricular activities. However, teacher education programs are no longer limited by the number of quality expert teachers in a local area or the resources available in local schools. Online professional social networks and communication protocols make it possible to connect pre-service teachers to a global network of social studies educators focused on integrating technology into their instruction.

Context of the Research

The context for this research is a Master of Education program in which social studies pre-service teachers take one required course in educational technology. Students (pre-service teachers) in the educational technology course explore new technologies that could be useful for teaching social studies, participate in online and classroom discussions where they are expected to think critically about teaching with those technologies, and create a unit plan that integrates new technologies into the social studies curriculum. In a prior offering of

the course, students reported their satisfaction with the course but expressed concerns and anxiety about effectively integrating technology into their teaching once they get teaching jobs. Their feedback included concerns about how they would stay abreast of the latest technologies while trying to be effective teachers, make decisions based on access to technology in their future classrooms to engage learners, and appropriately scaffold their students' interactions in the 'real world' online, for example, using social media. Social media can be broadly defined as virtual platforms that allow users to create, share, and discuss content online.

Based on student feedback as well as prior research that has highlighted the benefits for teachers of participation in online teacher communities and interactions with peers (Hur & Brush, 2009; Lieberman & Mace, 2010; Schlager, Farooq, Fusco, Schank, & Dwyer, 2009), the course was redesigned to include opportunities for learning that went beyond university classrooms and resources and helped connect students with experienced educators. The redesigned 14-week course met on-campus for ten of 14 sessions. Similar to the previous version of the course, several new technologies (e.g., Google Earth, Glogster) pertinent to the teaching of social studies and the searching, evaluating, and integrating of primary sources (oral histories, digital histories) were modeled throughout the course to encourage analysis, evaluation, creation, and sharing of content using new media (Lombardi, 2007).

Four of ten classroom sessions included 45-minute real-time Skype sessions with experienced social studies teachers around the United States. Four further classroom sessions included in-class presentations by experienced teachers. Students prepared questions for the experts based on pre-work, and students' interactions with these experts outside of the classroom comprised Twitter interactions and follow-up discussions on the experts' blogs. During the four online weeks, students participated in subject-specific Nings, contributed to educational blogs, and followed teachers on Twitter, all within the context of prescribed guidelines. The National Council for Social Studies Ning was suggested to students as an appropriate forum where they could follow current discussions about the integration of technology in their discipline. A list of experienced social studies teachers who tweeted and blogged was provided to students, from which they selected four to follow. Students were further requested to find one blog on their own that they considered a useful resource for beginning teachers interested in integrating technology into the social studies curriculum.

At the end of the course, the students synthesized what they learned from the interactions with experts and the impacts and provided evidence for their claims using online links and excerpts. They also created an online artifact and an accompanying unit description for a K-12 social studies classroom demonstrating the application of new technologies and primary sources to create authentic learning experiences for K-12 students. This paper focuses on the students' learning and interaction with experienced teachers using social media during the classroom and online activities in the course.

Methodology

Students were asked to maintain ongoing notes about their interactions with experts during the course. At the end of the course they were asked to submit a summary reflection on their understanding of technology integration into the social studies curriculum. Students were requested to use references from the readings and examples of resources, and to provide excerpts of interactions or links to these interactions online as evidence for their claims in their written narrative. Students' (n=15) synthesis reflections submitted at the end of the course were analyzed to answer the question, "What are students' perceptions of learning from interactions with experts using social media?" The reflections were collected and first open coded (Charmaz, 2006) for themes that emerged. The smallest unit of analysis was one sentence. Two researchers open coded three students' reflections separately using HyperResearch software, then met to discuss their codes and determined 88% agreement. Several codes were semantically similar, for instance, "unknowing" and "lack of awareness," "thinking shift" and "changes in thinking." They then coded the rest of the transcripts with 80% agreement and collapsed the final 13 codes into six larger themes.

Findings

The analysis of student reflections highlighted many different aspects of their learning about technology integration during the course activities. The findings are organized here according to students' prior experiences with technology, their perceived learning from the course as a whole, their perceived learning from interactions with experienced teachers, and their intended or initial application of the learning from the course in their practica or teaching experiences. Excerpts from students' reflections are included in each section.

Prior experiences with technology.

In their reflections on what they had learned from the course, seven of 15 students reported that they had been unaware of many of the technologies that were introduced and used in the course. Students were familiar with Word processing, PowerPoint, and online searches using a browser, but were unaware of many new technologies that could be used for teaching social studies. They provided specific instances of their learning about and with Smart Boards, Glogster, Voicethread, WebQuests, digital histories, ThinkQuests, and so on. One student stated, "Prior to this course I had little experience with technologies other than Microsoft applications, Internet research and social networking. As far as using technology in the classroom I had only been exposed to PowerPoint presentations and online research," while another wrote, "I was extremely unaware of all of the technologies available to be utilized as a teacher."

Five students reflected that they had only been exposed to traditional methods of technology use such as lectures that used PowerPoint in their learning experiences before this course, as revealed in one student's comment, "I had never been exposed to the new and exciting technological means in which a teacher can engage and motivate his/her class and make learning more fun." Eleven of 15 students claimed that the course helped familiarize them with how these new technologies can be integrated into classroom teaching. For example, some students had used Twitter, Facebook, or blogs in

the past but were not aware of how these could be used in a teaching environment to help students learn.

Perceived learning from the course.

All 15 students stated that they had learned how they could teach with new technologies during the course. Students gave multiple examples that demonstrated their understanding of teaching with technology and how technology could benefit student learning. Smart Boards, blogs, Glogster, and VoiceThread were the new technologies most mentioned by students, followed by Google Earth, wikis, Twitter, virtual field trips, social studies games, and primary sources such as oral or digital histories. Glogster and VoiceThread were topics included in student-run presentations, but Smart Board integration was presented by two guest speakers, and students learned about blog use by following the blogs of experienced teachers and interacting with them online. The following are two examples of student comments:

> I had never even heard of Glogs or WebQuests before this course. I think Glogs provide a concise and effective way for teachers to include interactive material, such as videos, graphics, and audio clips, to a lecture. I think students gain more educationally when they engage in activities like creating Glogs and participating in WebQuests. These activities can be extremely fun and are much more effective than simply completing worksheets or listening to a mundane lecture.

> I learned how I could use those technologies in a social studies classroom, for example, creating Facebook or Twitter accounts of historical figures, or using Skype to bring in classroom experts, or Google Earth as part of a virtual field trip. I was also exposed to technologies and techniques I had never heard of: the virtual field trip, VoiceThread, online timelines. I was able to interact with these technologies, see real examples of their use for classroom instruction and student learning, and learn how to use them to contribute to meaningful learning, both in terms of pure content instruction and in the creation of service learning projects.

Thirteen of 15 students asserted that they had learned different ways of integrating technologies into their teaching, using phrases such as "teaching methods," "methods for teaching with technology," and "successfully integrate technology in a social studies classroom." One student explained, "I started out thinking I knew everything about technology, but learned how I could use it in an educational setting and as a way to foster students' educational growth," while another wrote, "I truly learned so many ways of how to successfully incorporate technology into a social studies classroom: many more than what I had originally thought were possible." In their reflections, students demonstrated their understanding of how several technologies can be used for administration, student engagement, and student motivation in social studies, as follows:

For example, a blog can simplify my life by giving me a place to post information regarding class and a place to direct both students and parents when they have questions about our class

Probably the most important insight that I was able to gain from this course is the usefulness of social media in terms of student motivation, which everyone tells me is the biggest obstacle to achievement in most cases. The idea of writing for a potentially infinite online audience instead of just for the teacher was very fascinating to me, and it really did seem to affect student motivation when we implemented a class blog in our practicum experience.

For example, with blogs, podcasts, voice threads, etc., I can 'flip' the classroom by having my lecture or content for the students to listen to at home with their computers or smartphones. With blogs the students can post content, status on projects, receive announcements, and communicate with one another outside the classroom. Students can assume the role of a historical figure and make a 'mock' blog. Google docs are a great way for the class or group to collaborate with one another and have instantaneous poll results. It also provides the teacher with a great way to see who contributed what with an assignment.

Learning from expert interactions

Prior versions of this course encompassed exposure to new technologies and time for students to explore these, along with examples of best practice. However, the key change in this version of the course was their exposure to experienced teachers in their discipline (social studies), who shared successful teaching experiences with the students. Four experts made presentations on-campus on teaching with Smart Boards, educational gaming, and fair use of online materials, while four others discussed the use of social networks, blogs, online collaboration, and geocaching over Skype. Additionally, students interacted with these and numerous other social studies educators using social media. A theme that emerged in 12 of 15 student reflections was their learning from these interactions with experts during the course. Students' self-reported learning from their interactions with experts fell into two categories: exposure to successful working examples of teaching, including appropriate use of technology, and exposure to online networking and online resources.

Exposure to successful working examples of teaching

Students stated that the examples, best practices, and challenges presented by the eight expert teachers increased their understanding of how new technologies can motivate and engage K-12 learners, help them to be active instead of passive learners, and help them monitor and "own" their learning. Six students stated that they were now comfortable using the Smart Board and creating lessons on the Smart Board, or that they had a "strong foundation and a solid understanding of its capa-

bilities." Individual students highlighted their exposure to educational uses of gaming and the appropriate use of new technologies in K-12 environments. In general, students praised the Skype sessions and the teachers as "wonderful examples of the type of teachers we should aim to be." One student wrote,

> One thing that I thoroughly enjoyed about the course was that we explored working and successful examples for almost all of the technologies addressed. It was extremely beneficial and motivating to see how real teachers utilized technologies in their modern-day classrooms and were successful at doing so. I feel that if I had not seen how current teachers actually productively use and implement these technologies, they would have seemed more foreign and less obtainable for my own classroom. Instead, because we did explore so many working examples of these technologies, I know how and why they can be utilized so successfully.

In addition to learning from the content of the presentations, students also acknowledged the value of Skype and similar communication protocols for their future classrooms:

The other technology that I now plan to use in my classroom is Skype. Skype gave our class the opportunity to speak with experts from all over by eliminating travel expenses, lost time, and many other factors. My views changed on Skype from it being for personal entertainment to something that is very powerful in a classroom. I can have my students speak with international students, experts in different states, and even another class in a different part of town.

Exposure to online networking and online resources.

Following their online interactions with numerous educators in blogs, Twitter, and Nings, eight of 15 students expressed their surprise at the ways in which "like-minded" educators connect online, request information, and share lessons, resources, and stories about integrating technology into their teaching. They were also surprised at how approachable educators were online, their willingness to share their resources with beginning teachers, and the support that could be available to them during their first year of teaching. Students recognized the value of online networks for staying up-to-date with new technologies and their use in classroom, as reflected in the following excerpts:

> Finally, I learned that technology can not only help students, but teachers as well. There is a myriad of technological resources available to teachers that can aid them in their classrooms. These come in the form of blogs, wikis and podcasts which may provide lesson plans or classroom management strategies. To utilize these resources to the fullest, it is extremely beneficial for the teacher to network. I am sure that I will never know all there is to know and offer in terms of technology. However, I can help myself by following experts on the topic on Twitter or Facebook and constantly educating myself about the latest and most engaging technological tools for education

> Now, I follow, and am being followed, by a vast number of social studies teachers around the country. For example, last weekend was the NCSS conference in D.C., and my Twitter was full of people who were there and what they were

> learning about. I have found that the teachers who are active on Twitter are usually highly progressive when it comes to integrating technology into the classroom. Following educators such as these is a great way to network, share, and learn. Asking for help is as simple as mentioning them in a Tweet or using a # with appropriate title.

Application of learning from the course to teaching experiences

Five of 15 students reported that they had integrated technologies that they had learned in the course into their practicum experiences. Students created a glog, a blog, a WebQuest, and a Twitter account for their teaching sessions and were happy with the ways in which their classes engaged using those tools. According to one student,

> I created a fake account using Twitter for George Washington. In that account, I created tweets about various historical events in the first president's lifetime and followed other Twitter accounts that related to George Washington (i.e. John Adams, Thomas Jefferson, Betsy Ross etc.). This proved to be an extremely effective method of conveying the material while also tapping into the students' interests with Twitter.

Two students attributed their application of technology to the guest speakers. One student wrote, "This is something that simply would not have occurred to me had we not listened to that guest speaker talk about how much her students were excited about their class blog," while another reported confidence in using the Smart Board based on the expert presentations.

Discussion and Conclusion

Teachers in a specific discipline often feel isolated and find it difficult to reach out to other teachers in similar situations or to more experienced teachers. Similarly, teacher educators who wish to provide pre-service teachers with models of quality technology integration in a specific discipline do not always have access to role models locally. This article presents one approach to providing pre-service teachers with online networking resources beyond the local environment and skills for lifelong learning using social media. The limitation of this research is that it is based on a small sample in one course and on an analysis of students' reflections maintained during the course. However, students were required to provide online links and excerpts as evidence of their online interactions, lending credibility to their assertions, and students' self-reports can provide insight into their perceived learning. The 'real-world' online interactions using social media described in this paper resulted in students' increased understanding of teaching social studies with technology as well as existing online networks, resources, and experts in their discipline. Students enjoyed the opportunity to interact with experienced teachers, perceived some of the experts as role models, and built a professional network that they can leverage in their career as social studies teachers. The potential of social media, professional networks, and communities of practice for teachers in a specific discipline are often insufficiently leveraged in teacher education. The presumption is that pre-service teachers, especially those that have grown up with the Internet, will find such resources on their own. However, pre-service teachers should first be provided with role mo-

dels and such interactions should initially be scaffolded, following which they can be encouraged to find their own resources. Given that teachers' understanding of technology integration and its benefits for learning are precursors to teaching with technology in prior research, exposure to role models and working examples of technology integration are crucial.

Similar to the course described here, educational technology courses often succeed in helping pre-service teachers gain an understanding of how new technologies and social media can be used appropriately in K-12 classrooms. However, this approach was unique for three reasons. First, students did not use social media to interact with one another, as is common in educational technology courses, but interacted in real time with non-students, that is, experienced educators in social networks. Such interactions can help students understand both the benefits and challenges of using social media to learn and teach in the real world. Second, students interacted with experienced teachers who used new technologies in innovative ways, and more importantly, either currently taught or had previously taught social studies. Thus, students had an opportunity to observe, experience, or hear about how new technologies are currently being used in K-12 social studies classrooms, ask questions about challenges faced by teachers, reflect on these teachers' practices, and interact with them in real time about their practices. In addition to being discipline-specific, this approach differs from a passive review of existing online materials or lesson plans, which albeit valuable, does not always offer a rationale or explain challenges that teachers face. Students in this course, for instance, had many questions for the experts about how they interacted with technology specialists and parents to get permission to use certain technologies and what kinds of grants they could apply for to pay for certain online or classroom technologies. In the next version of this course, a couple of technology specialists from K-12 environments will be included in the expert interactions. Third, several students expressed surprise in their reflections about how experienced teachers "put themselves out there," shared their materials, and did not hesitate to ask questions. Their real-life interactions on blogs, Nings, Twitter, and other virtual spaces provided them with workplace skills that will help them after they graduate, because they now know they can reach out to educators with more experience, and are aware of venues where they can get information from other teachers.

Prior research reveals a focus on inservice teacher participation in online networks and communities, and on how pre-service teachers interact with each other in online networks and communities (Hur & Brush, 2009; Schlager et al., 2009). Further research is needed on the potential of social media and new communication protocols such as Skype and multi-user virtual environments to connect pre-service and experienced inservice teachers. Areas of research can include the analysis of online interactions between pre-service and inservice teachers; the benefits, learning, and impact of such interactions for not only pre-service but also experienced teachers; the ways in which such interactions can be scaffolded and modeled for maximum learning; and virtual spaces that are most useful for such interactions. The collaborative nature of social media and their ubiquitous presence in our lives offer tremendous potential to enculturate pre-service teachers into existing professional communities that will help them stay current with new

technologies for teaching and decrease their teaching in isolation in their classrooms.

References

Angeli, C., & Valanides, N. (2005). Preservice teachers as information and communication technology designers: An instructional design model based on an expanded view of pedagogical content knowledge. *Journal of Computer Assisted Learning, 21*(4), 292-302. doi:10.1111/j.1365-2729.2005.00135.x

Berson, M. J. (1996). Effectiveness of computer technology in the social studies: A review of the literature. *Journal of Research on Computing in Education*, *28*(4), 486-499.

Bolick, C., Berson, M., Coutts, C., & Heinecke, W. (2003). Technology applications in social studies teacher education: A survey of social studies methods faculty. *Contemporary Issues in Technology and Teacher Education*, *3*(3), 300-309. Retrieved from the journal's website: http://www.citejournal.org

Brush, T., Glazewski, K. D., & Hew, K. F. (2008). Development of an instrument to measure pre-service teachers' technology skills, technology beliefs, and technology barriers. *Computers in the Schools, 25*(1-2), 112-125. doi:10.1080/07380560802157972

Brush, T., & Saye, J. W. (2009). Strategies for preparing pre-service social studies teachers to integrate technology effectively: Models and practices. *Contemporary Issues in Technology and Teacher Education, 9*(1), 46-59. Retrieved from the journal's website: http://www.citejournal.org

Buckenmeyer, J. A., & Freitas, D. J. (2005, June). *No computer left behind: Getting teachers on board with technology*. Paper presented at the National Educational Computing Conference, Philadelphia, PA. Retrieved from: http://researchgate.net/researcher/81449391_Janet_A_Buckenmeyer

Bull, G., Thompson, A., Searson, M., Garofalo, J., Park, J., ... Lee, J. (2008). Connecting informal and formal learning experiences in the age of participatory media. *Contemporary Issues in Technology and Teacher Education*, *8*(2), 100-107. Retrieved from the journal's website: http://www.citejournal.org

Chai, C., Koh, J., & Tsai, C. (2010). Facilitating preservice teachers' development of technological, pedagogical, and content knowledge (TPACK). *Journal of Educational Technology & Society*, *13*(4), 63-73. Retrieved from the journal's website: http://www.ifets.info

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.

Cornbleth, C. (2010). What constrains meaningful social studies teaching? In W. C. Parker (Ed.), *Social studies today: Research and practice* (pp. 215-223). New York, NY: Routledge.

Culp, K. M., Honey, M., & Mandinach, E. (2003). *A retrospective on twenty years of education technology policy.* Washington, DC: U.S. Department of Education, Office of Educational Technology. Retrieved from the Department's website: http://www.ed.gov

Doolittle, P. E., & Hicks, D. (2003). Constructivism as a theoretical foundation for the use of technology in social studies. *Theory and Research in Social Education*, *31*(1), 72-104. doi:10.1080/00933104.2003.10473216

Ehman, L. H., & Glenn, A. D. (1991). Interactive technology in the social studies. In J. P. Shaver (Ed.), *Handbook of research on social studies teaching and learning* (pp. 513-522). New York, NY: Macmillan.

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development, 47*(4), 47-61. doi:10.1007/BF02299597

Ertmer, P. A., Evenbeck, E., Cennamo, K. S., & Lehman, J. D. (1994). Enhancing self-efficacy for computer technologies through the use of positive classroom experiences. *Educational Technology Research and Development, 42*(3), 45-62. doi:10.1007/BF02298094

Groth, L. A., Dunlap, K. L., **& Kidd, J. K.** (2007). Becoming technologically literate through technology integration in PK-12 pre-service literacy courses: Three case studies. *Reading Research and Instruction, 46(4), 363-386*. doi:10.1080/19388070709558476

Hammerness, K., Darling-Hammond, L., Bransford, J., Berliner, D., Cochran-Smith, M., … Zeichner, K. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358-389). San Francisco, CA: Jossey-Bass.

Harris, J. (2008). TPACK in in-service education: Assisting experienced teachers' "planned improvisations." In AACTE Committee on Innovation and Technology (Ed.), *Handbook of technological pedagogical content knowledge (TPCK) for educators* (pp. 251-271). Mahwah, NJ: Lawrence Erlbaum.

Hur, J. W., & Brush, T. A. (2009). Teacher participation in online communities: Why do teachers want to participate in self-generated online communities of K-12 teachers? *Journal of Research on Technology in Education, 41*(3), 279-303.

International Society for Technology in Education (ISTE). (2008). *National educational technology standards for teachers: Advancing digital age teaching*. Retrieved from : http://www.iste.org »

Keeler, C. (2008). When curriculum and technology meet: Technology integration in methods courses. *Journal of Computing in Teacher Education*, *25*(1), 23-30. Retrieved from: http://www.eric.ed.gov

Koehler, M. J., Mishra, P., & Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology. *Computers & Education*, *49*(3), 740-762. doi:10.1016/j.compedu.2005.11.012

Koh, J., & Divaharan, S. (2011). Developing pre-service teachers' technology integration expertise through the TPACK-developing instructional model. *Journal of Educational Computing Research*, *44*(1), 35-58. doi:10.2190/EC.44.1.c

Kumar, S., & Vigil, K. (2011). The Net generation as pre-service teachers: Transferring familiarity with new technologies to educational environments. *Journal of Digital Learning in Teacher Education, 27*(4), 144-153.

Lei, J. (2009). Digital natives as pre-service teachers: What technology preparation is needed? *Journal of Computing in Teacher Education*, *25*(3), 87-97. Retrieved from: http://www.eric.ed.gov

Lieberman, A., & Mace, D. P. (2010). Making practice public: Teacher learning in the 21st century. *Journal of Teacher Education, 61*(1-2), 77-88. doi:10.1177/0022487109347319

Lombardi, M. M. (2007). Authentic learning for the 21st century: An overview. In D. G. Oblinger (Ed.), *Educause Learning Initiative Paper 1: 2007*. Retrieved from : http://educause.edu

Mason, C., Berson, M., Diem, R., Hicks, D., Lee, J., & Dralle, T. (2000). Guidelines for using technology to prepare social studies teachers. *Contemporary Issues in Technology and Teacher Education*, *1*(1), 107-116. Retrieved from the journal's website: http://www.citejournal.org

McInerney, V., McInerney, D. M., & Sinclair, K. E. (1994). Student teachers, computer anxiety and computer experience. *Journal of Educational Computing Research*, *11*(1), 27-50. doi: 10.2190/94D0-B0AF-NLAX-7RYR

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017-1054.

National Council for the Social Studies (NCSS). (2006). *Technology position statement and guidelines: A position statement of National Council for the Social Studies*. Retrieved from the NCSS website: http://www.socialstudies.org

National Council for the Social Studies (NCSS). (2010). *National curriculum standards for social studies: A framework for teaching, learning, and assessment*. Retrieved from the NCSS website: http://www.socialstudies.org

Niess, M. L. (2005). Preparing teachers to teach science and mathematics with technology: Developing a technology pedagogical content knowledge. *Teaching and Teacher Education, 21*(5), 509-523. doi:10.1016/j.tate.2005.03.006

Niess, M. L. (2011). Investigating TPACK: Knowledge growth in teaching with technology. *Journal of Educational Computing Research*, *44*(3), 299-317. doi:10.2190/EC.44.3.c

Office of Technology Assessment (1995). *Teachers and technology: Making the connection*. Washington, D.C.: U.S. Govt Printing Office.

Pahl, R. H. (1996). Tech talk - for social studies teachers. *The Social Studies*, *87*(4), 186-187. doi:10.1080/00377996.1996.9958437

Schlager, M. S., Farooq, U., Fusco, J., Schank, P., & Dwyer, N. (2009). Analyzing online teacher networks: Cyber networks require cyber research tools. *Journal of Teacher Education, 60*(1), 86-100. doi: 10.1177/0022487108328487

Smith, S. D., Salaway, G., & Caruso, J. B. (2009). *The ECAR study of undergraduate students and information technology, 2009*. Retrieved from : http://www.educause.edu

Swan, K. O., & Hofer, M. (2008). Technology and social studies. In L. Levstik & C. A. Tyson (Eds.), *Handbook of research in social studies education* (pp. 307-326). New York, NY: Routledge.

Tapscott, D. (1998). *Growing up digital: The rise of the Net generation*. New York, NY: McGraw-Hill.

U. S. Department of Education. (2004). *The National Educational Technology Plan*. Toward a new golden age in American education: How the Internet, the law and today's students are revolutionizing expectations. Retrieved from the Department's website: http://www2.ed.gov/about/offices/list/os/technology/plan/2004/index.html

U.S. Department of Education. (2010). *Transforming American education: Learning powered by technology*. Retrieved from the Department's website: http://www.ed.gov

Voithofer, R. (2009, April). *Pre-service teachers' conceptions of the digital divide: A four-year study at a predominantly white institution*. Paper presented at the American Educational Research Association (AERA) 2009 conference, San Diego, CA. Retrieved from the author's website: http://people.ehe.osu.edu/rvoithofer

Zhao, Y., Pugh, K., Sheldon, S., & Byers, J. L. (2002). Conditions for classroom technology innovations. *Teachers College Record*, *104*(3), 482-515.