

Using Evernote[®] as an Interactive Notebook with Pre-Service Social Studies Teachers

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Teacher educators are expected to create experiences for pre-service teachers to prepare them for the world of teaching and the ever-changing contexts of schools and teaching. In this article, we discussed integrating two different aspects of teacher education—field-based instruction and technology—through the use of Evernote[®], a digital note-taking and archiving application, to create digital interactive student notebooks. Our goal was to provide other practitioners with insight into our use of Evernote[®] to address two different pedagogical goals of a field-based course: 1) to enrich our pedagogies through the use of a digital interactive notebook with pre-service teachers who were spending more time in Pre-Kindergarten-12 social studies classrooms, and 2) to teach pre-service teachers to use a particular cloud-based technology that could be implemented in their future classrooms. We described Evernote[®], how we used it to work against the notorious theory and practice gap in teacher preparation, and discussed the importance of taking the time in teacher education to teach technology to digital natives.

Key words: Evernote[®], teacher education, pre-service teachers, social studies, educational technology, interactive notebooks

Introduction

Teacher educators are charged with the incredibly complex task of preparing pre-service teachers for the ever-changing contexts of schools and teaching. These challenges manifest in a variety of ways, but what undergirds this job in every context is the perception that teacher educators must create experiences for pre-service teachers to prepare them for the world of teaching. In this article, we discuss integrating two different aspects of real world oriented teacher education - field-based instruction and technology - through the use of Evernote[®] to create digital interactive student notebooks. Our goal is to provide other practitioners with some insight into how we used Evernote[®] to address two different pedagogical goals of a field-based course: 1) to enrich our pedagogies through the use of a digital interactive notebook with pre-service teachers who were spending more time in Pre-Kindergarten-12 social studies classrooms, and 2) to teach pre-service teachers to use a particular cloud-based technology that could be implemented in their future classrooms.

Our work as teacher educators is shaped by the particular context of our community and institution, yet the tensions prompting our adoption of an Evernote[®] interactive notebook are shared widely within social studies teacher education. In this realm of teacher preparation, there is a common drive to increase and improve field-based experiences for pre-service teachers (e.g., Grossman, Hammerness, & McDonald, 2009; Zeichner, 2010) and also better prepare pre-service teachers to implement technology in social studies (Bolick, Berson, Friedman & Porfeli, 2007; Friedman & Hicks, 2006; Green, Ponder, & Donovan, 2014; Hammond & Manfra, 2009). Historically, the methods, curriculum, and practicum courses offered by our program required

pre-service teachers to spend part of their time in a traditional campus-based classroom setting with us and the rest of their time in a secondary social studies classroom. Over the past two years, through a Professional Development School (PDS) partnership between the local school district and our institution, we have made the move to situate our teacher education program in a clinical context. This partnership has resulted in a variety of changes within our teacher education program, that include: holding our classes in school buildings, placing all practicum pre-service teachers in district classrooms, and engaging in more consistent communication with cooperating teachers and administrators. While we believe the relationship between our program and the schools has improved significantly as a result of the clinical-based model, we wondered whether our pre-service teachers' experiences in our classes were significantly different from our courses in previous semesters. Although the place in which we taught had changed, we had not radically altered the activities and assignments we asked pre-service teachers to do. At the end of our first year in the PDS, in a discussion concerning the need to rethink pedagogical strategies afforded by the clinical focus of our program, one of the authors proposed the concept of interactive notebooks as way of harnessing more effectively the clinical context of our students' experiences. Another, immersed in professional development activities focused on technology integration, suggested the use of a digital platform as the vehicle ideally suited to field-based courses. The final collaborator had begun using Evernote[®] to organize research activities and suggested the application as the notebook platform.

In the following sections, we describe our work to integrate field-based pedagogy and technology by first addressing the use of technology amongst Pre-Kindergarten-12 and pre-service teachers, and then describing what interactive notebooks are and how they can be used. We add to teacher educator discussions by demonstrating how the use of a digital interactive notebook may help bridge the theory and practice gap while also preparing pre-service teachers for increasingly technology-rich schools. In an effort to provide students' perspectives about this technology, we share results from our survey of the pre-service teachers in our course. We conclude with a discussion about how we will approach teaching and using Evernote[®] differently in future courses.

Technology Use With Pre-Kindergarten-12 and Pre-service Teachers

As more Pre-Kindergarten-12 schools move to one-to-one environments, where the student to technological device (e.g.: tablets, notebooks, etc.) ratio is 1:1, teacher educators will experience increased responsibility for preparing pre-service teachers on best practices for integrating technology into their social studies curricula. With this context in mind, we adjusted our own practices in an attempt to provide a preview of the technology-rich environment in which pre-service teachers may find themselves. In a 2009 study, researchers Vivian Wright and Elizabeth Wilson noted the literature about technology use in teacher education suggests without proper instruction in classes, pre-service teachers may not think technology in their classrooms is worthwhile, may find it difficult to integrate with content, or may use technology simply as a replacement of traditional teaching. They further note it is critical for teacher educators to integrate technology into their own practices as well. Within a social studies-specific context, technology integration at the teacher education level is important since well-executed incorporation can "empower inquiry-based teaching practices in social studies classrooms" (Brush & Saye, 2009, p. 45) and lead to more authentic integration and use in their future classrooms (Diem, 2000; Wilson, Wright, Inman & Matherson, 2011).

We sought to heed Wilson and Wright's (2009, 2010) calls for social studies teachers to model the practice of technology integration for the pre-service teachers in our classes to demonstrate what it could look like in action, but also to increase their confidence and skill levels with technology. Although today's college-aged students often are referred to as digital natives due to their relationship with and orientation toward technologies, their experiences with various technologies do not necessarily translate to the kinds of skills required for classroom application. An example of this can be found in Jing Lei's (2009) study of undergraduate education majors, where only 10% indicated they spent a significant amount of time using technology for education purposes. Most of the surveyed students reported their familiarity with Web 2.0 technologies was limited primarily to social networking applications. By introducing Evernote® in our course and requiring pre-service teachers to engage in tasks that would enable them to become competent users of the application, we hoped to encourage them to develop a positive orientation toward technology use beyond social media.

With the spread of computers and other technologies to most Pre-Kindergarten-12 institutions, the research literature examining the consistent lack of classroom technology implementation use has moved away from pointing to structural issues, such as lack of access to computers, to explain why teachers have not integrated technology in their practices. It has turned its focus instead to teacher characteristics that may predict or inhibit technology practices (Mueller, Wood, Willoughby, Ross, & Specht, 2008). There is clear consensus in this research that teachers' sense of self-efficacy and confidence with technology factor into their decisions to integrate technology into their pedagogical practices or not. An often-cited study of 389 Canadian elementary and secondary teachers concluded that there was an unambiguous connection between previous computer experience and regular use and teachers who frequently integrated technology into the classroom (Mueller et al, 2008).

Some researchers have turned their attention specifically to the affective dimension of technology of efficacy, examining the emotional barriers that may inhibit technology use. In her review of literature regarding the relationship between teachers' personal use of technology and classroom technology integration, Sarah Howard (2013) commented, "teachers feeling competent and confident using technology have lower anxiety, less fear and likely to exhibit a positive affective response to technology use. Thus, they may perceive less risk when integrating technology in their teaching" (p. 361). These studies, as well as others examining teachers' experiences with, and orientations toward, technology (e.g., Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Kale, 2013; Kidd, 2013; Sadaf, Newly, & Ertmer, 2012) indicate teachers' attitudes are a critical component in the process of preparing them to become technology integrators in the classroom. Similar conclusions were reached in another study designed to improve the self-efficacy of experienced social studies educators (Shriner, Clark, Nail, Schlee & Libler, 2010). As Peggy Ertmer and Anne Ottenbreit-Leftwich (2010) assert, "if teachers are going to prepare their students to be technologically capable, they need to have, at the very least, basic technological skills" (p. 259). They suggest that the best way to help students gain confidence with technology practices may be by "helping students gain personal experiences that are successful (personal mastery)" (p. 261).

Through the introduction of Evernote® into our class, we provided pre-service teachers the opportunity to become proficient in what was likely a new application. In doing so, we created the opportunity for those pre-service teachers to see themselves as learners capable of

mastering a new technology. In anticipation of the likelihood some students would not have access to their own laptop or smart mobile device, we sent the enrolled pre-service teachers an email outlining the process for securing a laptop or tablet at no cost. By requiring them to bring a laptop, tablet, or smartphone with them to every class throughout the semester, we created a one-to-one environment in our teacher education classroom.

Interactive Notebooks for Pre-Service Social Studies Teachers

The interactive notebook is a classroom tool based on written discussions between teachers and students before, during, and after a lesson. Typically, these are physical notebooks or binders that house student notes, lesson artifacts, reflections, and teacher responses to the assortment of entries. Interactive notebooks have been most popular in Pre-Kindergarten-12 mathematics and science classrooms, particularly using the Teacher's Curriculum Institute method (see web-based resources), but many social studies teachers have used interactive notebooks to help students "become successful note takers, get systematically organized, [and] create a portfolio of individual learning for historical memory" (The Interactive Student Notebook, n.d, para. 2). Interactive notebooks offer a platform for students and teachers to communicate in ways not readily available within secondary schools. In the traditional classroom structure where learning occurs in interval class periods, communication and feedback between teachers and students is limited. Utilization of interactive notebooks within these settings, offers an area where teaching and learning can occur beyond the allotted time and space. These notebooks also serve as a formative assessment tool that supports student learning and informs teachers' understanding of that learning beyond the classroom. With interactive notebooks, teachers can maintain pedagogical consistency among varying classes, and students have options for individualized knowledge construction and personal creativity.

Cheryl Waldman and Kent Crippen (2009) note the many benefits of using interactive notebooks. In particular, they find students perceive interactive notebooks as "tools that positively impact their ability to learn" while also increasing their ability to "organize the materials associated with learning" (p. 52). They further describe interactive notebooks as "empowering" since the notebooks allow active engagement with course concepts, reflection, and expression; encourage organizational skills; and help students demonstrate understanding (p. 53). For Waldman and Crippen, "the power of an interactive notebook resides in students' engagement with sensemaking" and the teacher's ability to interact and communicate with students' metacognitive activities (p. 55).

As noted previously, we were concerned we had not taken full advantage of the opportunities afforded to our teacher education practices through the move to a clinical context, a phenomenon also recognized by Ken Zeichner and Morva McDonald (2011), who stated moving a course to a school "does not mean that the course will be any different in terms of its impact on teacher learning than when it was taught on campus" (p. 47). While holding classes in the schools provided new opportunities for pre-service teacher learning, there was still a significant disconnect between the topics and issues discussed in class on a weekly basis and the pre-service teachers' observations and teaching experiences in their practicum classrooms. We recognized building relationships with our school partners would take time, but we also took recognized that we would need to take some immediate steps to be more deliberate, systematic, and responsive in our efforts to address the field and course (or theory and practice) gap. This gap is what Linda Darling-Hammond, refers to as the "Achilles heel" (as quoted in Zeichner,

2010, p. 91) of teacher education. To address the gap, we wanted to find pedagogy inclusive of different kinds of learning experiences that incorporate “‘hands on’ teaching *and* analytic work that includes talking about and writing about ideas with others” (emphasis added, Rosaen & Florio-Ruane, 2008, p. 710).

As we discussed how to integrate analysis and action, we brainstormed ways the notebook could capture some of the dynamic nature of pre-service teachers’ experiences. Beyond just a medium for pre-service teachers to organize their assignments and readings, we wanted the reimagined interactive notebooks to be a space in which they could record their reactions to what they were doing in our classes and what they were seeing, doing, and learning in the field. We saw the use of these materials as an opportunity to bridge the gap between theory and practice: pre-service teachers would use the notebooks in activities for our university class as well as the Pre-Kindergarten-12 classrooms, completing assignments by drawing upon resources and experiences from both spaces. The design of the assignments as well as the design of the notebooks lent structure to the blurring of the boundaries between the course and field, as well as theory and practice. Further, this allowed for the extension of the pedagogical space beyond our face-to-face interactions, which was important for engaging in a dialog with each pre-service teacher about their individual and unique experiences.

While we wanted to maintain the spirit of the traditional interactive notebooks, in which students created and collected documents, artifacts, and assignments in spiral-bound notebooks, followed by the teacher periodically providing assessment and feedback, we knew our field-based context would make it difficult for pre-service teachers to carry and hand in physical notebooks. To make interactions easier and also meaningfully integrate technology use in education, we made the decision to design the notebook around the use of a digital platform. The learning management system (LMS) available through our institution seemed the most obvious location for electronic interaction between course instructors and students. Our previous experiences using the LMS for course delivery, however, led us to conclude the system was too cumbersome for the level of interaction we hoped to achieve with our interactive notebook. While the LMS enabled documents to be exchanged, reviewed, and responded to, the complexity of completing these tasks was a deterrent for both students and instructors. As the use of an LMS is limited primarily to colleges and universities, it was not a technology our students would later be able to apply in a Pre-Kindergarten-12 classroom. We therefore researched other digital environments that would enable the digital notebook to be as easily used as the paper version. It was important the pre-service teachers had opportunities to learn effective and meaningful social studies pedagogy, rather than promote the use of outdated pedagogical practices of yesterday.

Choosing Evernote®

Evernote® was identified early in our planning as a potential platform for a digital interactive notebook, but we investigated other options before committing. Our goal was to ensure the application’s platform could benefit pre-service teachers in our current class, as well as provide them with a helpful tool for use in and out of their future classrooms. We explored the use of several education-specific learning management systems (e.g., Edmodo®, Moodle®, Schoology®). In the end, we decided we wanted the pre-service teachers to learn how to use a form of technology that was not designed specifically for educational settings. While education-specific products may be very useful for teachers and students in particular learning contexts, we

sought a tool that could both be accessed and serve students' interests and purposes outside of Pre-Kindergarten-12 classrooms. We felt it was important for the pre-service teachers to become familiar with a technology that both they and their students might be able to use for purposes beyond the classroom. We also considered a number of different applications, including free, general use platforms, like Google Drive[®], as well as subscription-based software specifically designed for portfolio creation and curation. Although an ever-growing number of platforms provide some of the components necessary to facilitate the kind interactive project we envisioned, Evernote[®] was the best application for our purposes.

Evernote[®] was the best option for us on the basis of three factors: cost, accessibility, and functionality. In terms of cost, Evernote[®] is free and available for download from online application stores. We asked our pre-service teachers to upgrade to the Premium account, at \$5 a month, thus making it easier for them to share their work with their peers and us. While we required them to do this largely as a convenience to us, there are easy ways to share and collaborate on the free version as well. Evernote[®] is cross platform, working on both Macintosh and PC as well smart mobile devices, including tablets and phones. It can be accessed from almost anywhere, addressing an important issue related to our program's increased emphasis on fieldwork. The application also serves as a tool providing the benefits of being flexible and open-ended enough to accommodate a variety of needs and tasks while simultaneously including a helpful assortment of built-in or add-on functions and enhancements. This flexibility was relevant to our choice to use Evernote[®] in a teacher education context. Evernote[®]'s flexibility also had potential for accomplishing our goal of helping pre-service teachers master a technology that could be useful to them and their students both inside and outside the classroom. It is a tool with the architecture to lend itself to student-centered, knowledge construction activities rather than the kind of technology that has replaced traditional and often rote tasks in education, like testing or drills (Ertmer, 2005). In the following section, we describe Evernote[®]'s functionality in more detail as well as how we used it to support the interactive notebook.

Meet Evernote[®]

Evernote[®] is a cloud-based application designed for note-taking and archiving information. It is a collection of user-created notebooks with a nearly unlimited number of pages to collect thoughts, ideas, information, and images that can be digital, handwritten, photographed, audio-recorded, or collected from web pages. Users may access their notes via a variety of platforms: an application installed on a home desktop, a web browser accessible from any computer, or smart mobile devices. Evernote[®]'s advertising campaign encourages users to remember everything via its note-taking and sharing capabilities, made powerful through the built-in organization system and easy to use, intuitive interface.

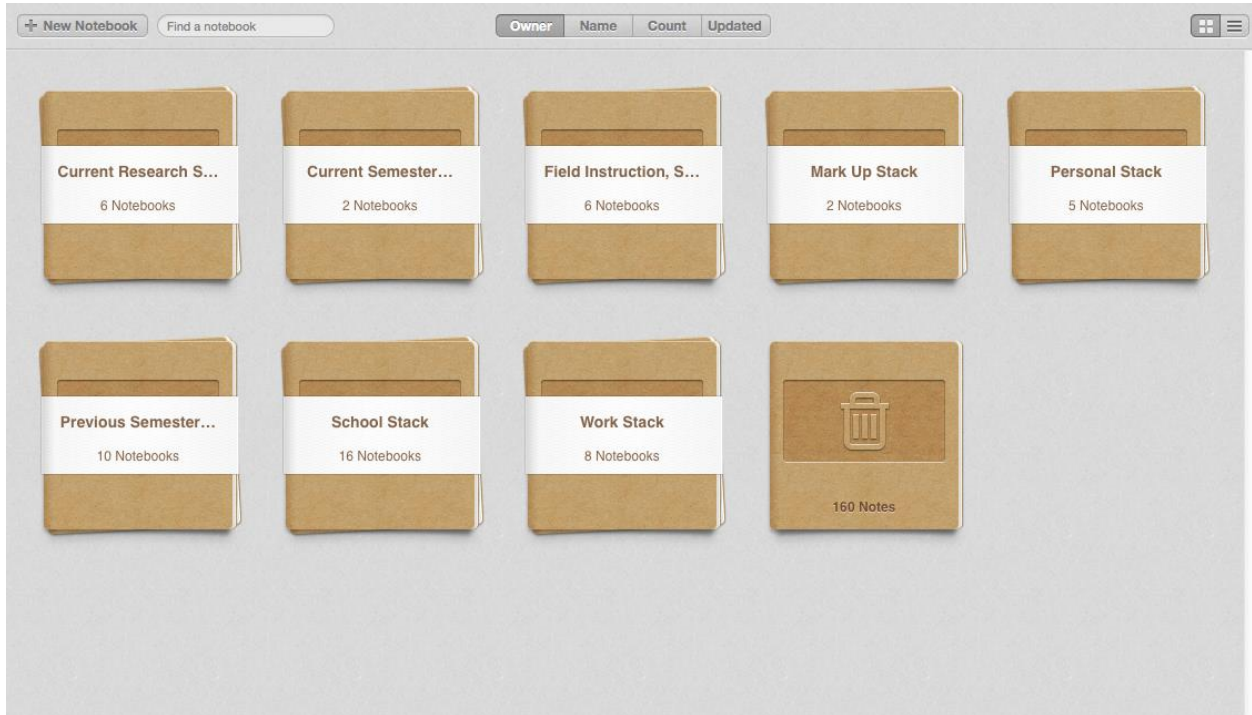


Figure 1: An Evernote® home screen. Various notebooks are stacked together based upon themes created by individual users.

Users create notebooks that house notes indexed by text tags, timestamps, and geotags. These notes are then sortable by name, date, and size. Through its organization system, Evernote® is easily searchable allowing users quick access to previously recorded information.

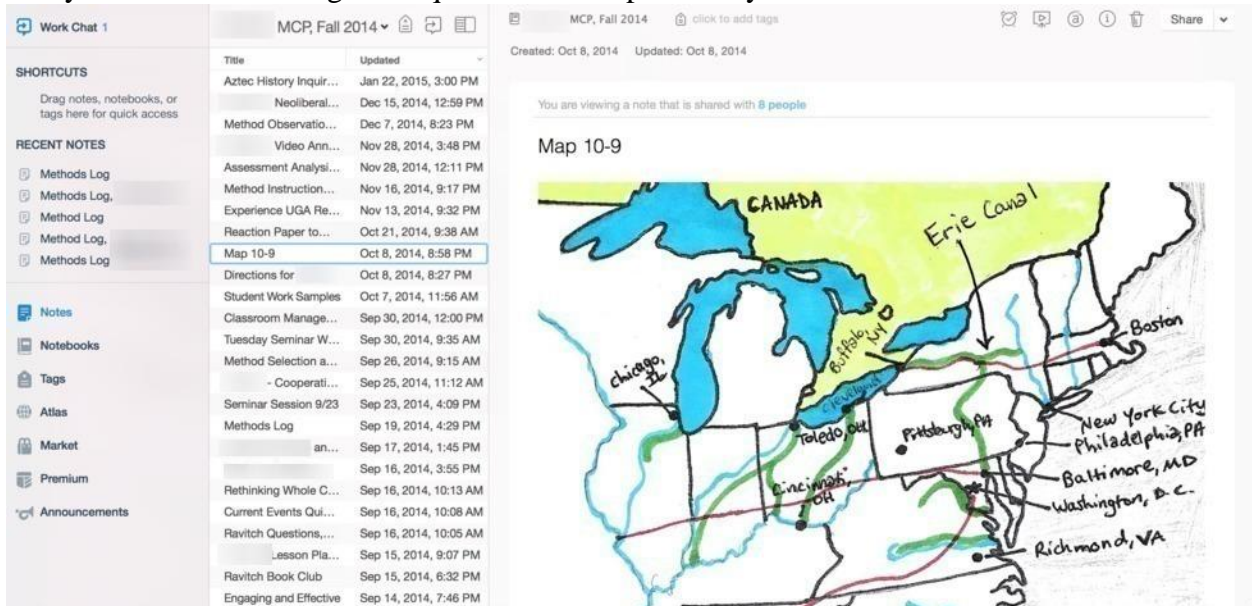


Figure 2: Inside a notebook. When we select a specific notebook, we are taken to a screen that displays all of the notebook's notes. Notes can be listed alphabetically or by date. When an individual note is clicked, it appears on the right-hand side of the screen.

Because Evernote® uses optical character recognition (OCR) to recognize text within images, PDFs, and handwritten notes, its searchability, functionality, and built-in organization are increased.

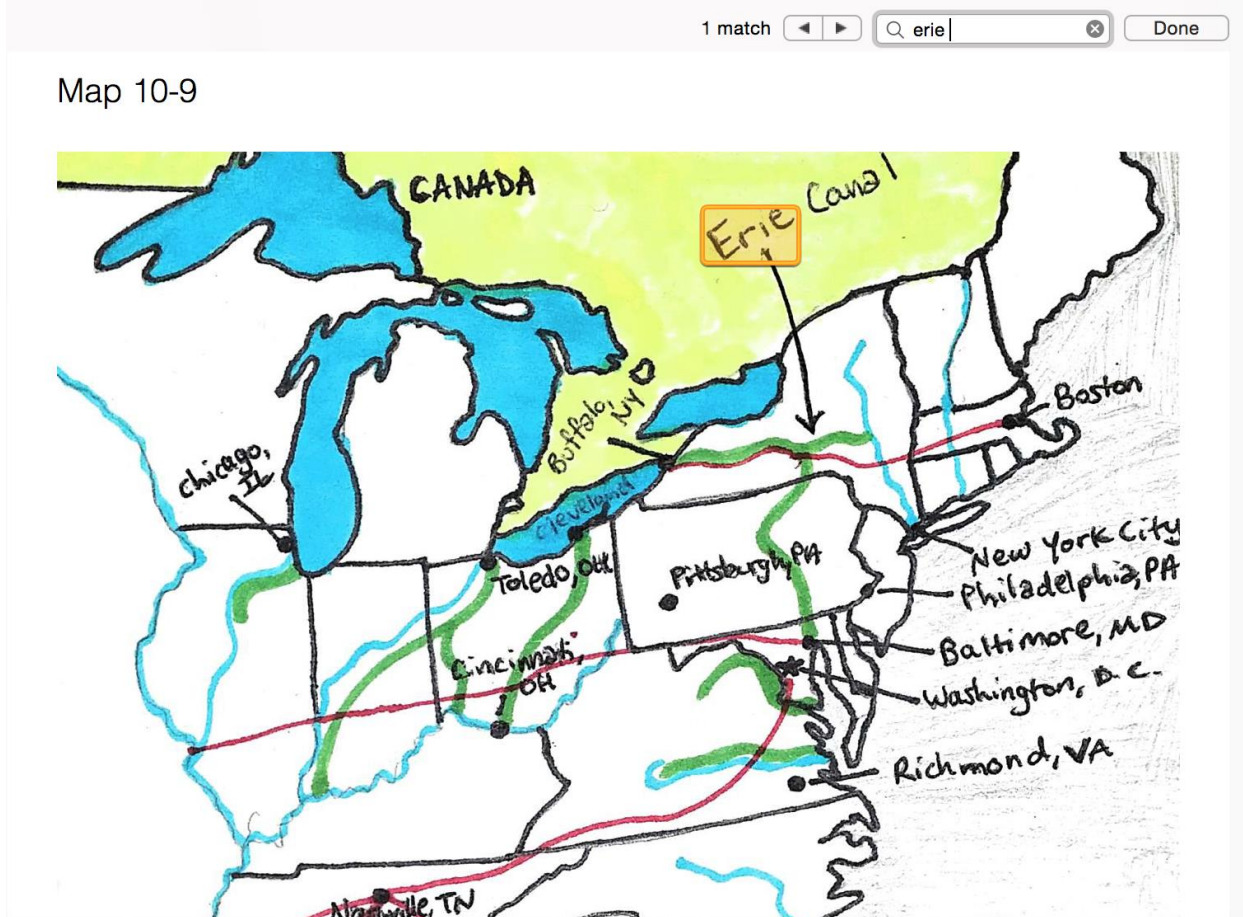


Figure 3: Evernote®'s OCR. This is the note from the previous image. It is a hand-drawn map with hand-written labels. After the note has synchronized, Evernote's Optical Character Recognition (OCR) makes the text in this photo searchable. We searched here for the word "Erie" and Evernote was able to identify the word in this photo. The OCR is excellent for searching for text on uploaded pictures of whiteboards or hand-written student work.

Although Evernote® recently exceeded 100 million registered users, a review of the literature shows that the application as an educational tool has been underexplored. Several research articles exist on the benefits of Evernote® in education spaces ranging from pharmacy to library science (Fox & Felkey, 2011, McNalley, 2013, van Arnhem, 2013) and one study (Walsh & Cho, 2013) extolls the benefits of Evernote® over traditional paper notebooks in a laboratory science class. These studies conclude that Evernote® is a powerful tool for educational contexts,

particularly because its organization, search, and text recognition systems allow for greater accessibility and easy recall of stored information. More formal research studies that measure Evernote[®]'s effectiveness will be necessary in the future, yet it is important to also highlight the practical applications that practitioners have developed.

A rudimentary Internet search provides firm evidence there has been significant attention regarding its use among P-12 educators. In addition to using Evernote[®] in their classroom to hand out assignments, assess students, organize lessons, and collaborate with parents or other teachers, we found examples of teachers using the application for multiple learning tasks. Some of these tasks included: helping students learn about current events through the use of online news sites and the web clipper extension, reducing distractions for online reading as well as promoting candid reflections through speech-to-text notetaking via the Evernote[®] Clearly web extension, and creating vivid portfolios of student work that include audio, photos, handwritten notes, typed notes, Word files, PDFs, and grades (see Web-Based Resources for examples). It was this robust application of Evernote[®] among Pre-Kindergarten-12 educators that provided both a template and further motivation for our choice to use it in our teacher education course. This exchange highlights that the knowledge exchange between academics and practitioners does, of course, flow both ways. This was one of the many times during the course of the semester that we used what we had learned *from* practitioners about current technology applications for social studies in our teacher education work.

Evernote[®] in the Teacher Education Classroom

Evernote[®] offers a number of very useful tools for teacher education and Pre-Kindergarten-12 settings. Most importantly, the Evernote[®] interface provides an easy way to organize numerous types of digital media that social studies pre-service teachers need to work with, including pictures, PDFs, and websites. While there are many applications that perform a similar storage function, the design of the notebook lends itself to the easy location and access of files through a preview window. Upon opening a notebook, the user can quickly scan the titles of all the notes stored within it and point and click for access. The search function in Evernote[®] is particularly powerful, enabling the location of words embedded within documents, even pictures of chalkboards and handwritten notes. We also found the Web Clipper extension—through which users can easily clip any web content to a notebook without having to leave the web page—to be an incredibly helpful tool. As teacher educators, we are relying more and more on online documents and assignments, and the Web Clipper feature provides the best tool we have used to easily capture, store, and organize online content.

Another element of Evernote[®] that proved to be valuable to us was the ease with which pre-service teachers could share the content of their notebooks with their peers and instruction via a simple email invitation. Through the share function, we as instructors became co-creators of the content in pre-service teachers' notebooks. Evernote[®] notebooks can be made public through an online link, but we chose to share notebooks between individual pre-service teachers and instructors so only those users could view the contents. The sharing feature between pre-service teacher and university instructor was particularly important in establishing the kind of dialogic interactions we hoped we could achieve through an interactive notebook because we could view, edit, and respond to any note created in the notebooks shared with us.

When students posted notes describing prospective lesson plans, the instructor could go into the document, make comments, embed hyperlinks, grade lessons, and record audio comments about the students' work. The process of referring back directly to coursework or previous assignments addressing issues related to the lesson was streamlined. Pre-service teachers could, in turn, respond back to us. We could share course documents and assignments with them by pasting notes into their notebooks or inviting them to an instructor-created master course notebook containing all course materials for the semester. Pre-service teachers could also share notebooks with each other in order to collaborate on assignments and lessons. All of the course instructors had access to these records as the course proceeded, allowing us to track the progress students had made over the semester, and also evaluate the efficacy of our pedagogical efforts. What resulted from these interactions were notebooks rich in multi-layered artifacts of the teaching and learning activities that occurred over the semester.

Assessing the impact of the interactive notebook as one component of teacher education pedagogy is beyond the scope of this article. Anecdotally speaking, the instructors involved in this course were in unanimous agreement that Evernote[®] was an essential tool in our efforts to work toward dissolving the boundaries between coursework and fieldwork. Evernote[®]'s capacity to digitally link together all aspects of the pre-service teachers' experiences during the semester, whether in our classroom or in the practicum classroom, was important in our efforts to stress the connections between the two spaces. While there may be a variety of other ways to achieve a similar goal, we suspect the pre-service teachers' easy access to Evernote[®] in both spaces increased the opportunities we had to continue to link their work throughout the semester back and forth between our classroom and the practicum classroom. In this sense, Evernote[®] made something possible, relative to the quality and frequency of our interaction with pre-service teachers that would have been impossible without it.

Developing Evernote[®]-savviness required some practice and training on the front end, but the seamless communication the application created in our teacher education space saved time in the long run. Using Evernote[®] to view pre-service teacher work and provide feedback was a less time-consuming process. In the LMS, the acts of transitioning from one page to another and uploading documents often wasted hours of valuable time. As instructors, we could now devote that time to reading, understanding, and assessing pre-service teacher work more carefully. We could communicate with pre-service teachers almost instantaneously via individual notes, giving instructions for specific assignments or discussing grades and assessments. Since we rarely collected hard copies of individual work, we significantly reduced the amount of paper exchanged in our classes. This reduction in paperwork resulted in some entirely new ways for thinking about how pre-service teachers might present artifacts of their teaching. Some discovered, for example, that taking a picture of a whiteboard discussion or a student assignment, and pasting the resulting image file into an Evernote[®] note would be the most effective representation of their work. Though some challenges and several unforeseen problems arose, which we discuss in the Future Considerations section of this paper, the time spent learning to use this tool and furthering our pedagogical and technological practices was time well spent.

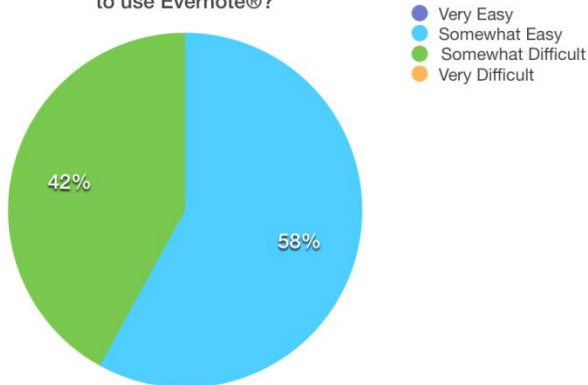
Pre-service Teacher Response to Using Evernote[®]

Near the end of the semester, we conducted a survey of our pre-service teachers about their perceived utility of Evernote[®] during the methods, curriculum, and practicum course. The response, overall, was mostly positive. Pre-service teachers who did not like the application

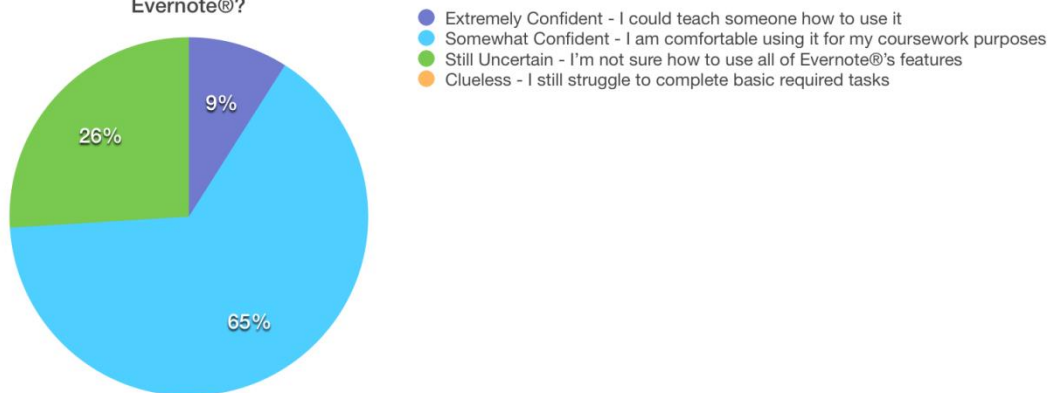
listed reasons that ranged from: not wanting to spend \$5 a month to not wanting to learn how to use a new application. Those who liked the application appreciated the ease with which they could complete and hand in assignments, organize their class and field notes, and collaborate with instructors and classmates on lesson planning and projects. Despite some mixed responses, the 24 out of 26 pre-service teachers who responded to the survey noted the use of Evernote® allowed for much more fluid exchanges between instructor and student in comparison to the university’s LMS.

Included below are summaries of the pre-service teachers’ responses to our survey. These figures reveal that generally: the pre-service teachers had some difficulty learning and using Evernote®, the platform enhanced majority of the pre-service teachers’ learning during the semester, and most of the pre-service teachers are interested in providing their own students with similar strategies for organizing their learning in social studies classes. These results also indicate pre-service teachers’ increasing comfort with technology, as a well as a desire to integrate technology into their future classrooms; perhaps in a way that they would have not prior to using Evernote® so frequently in our class.

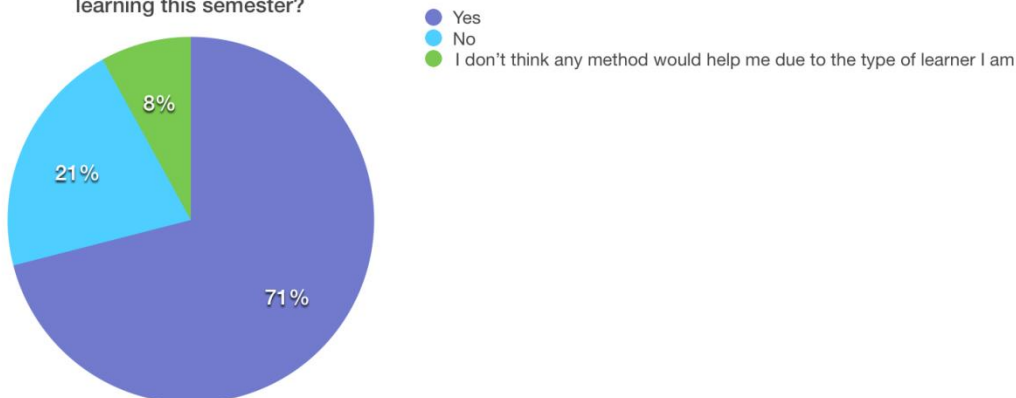
How easy was it for you to learn how to use Evernote®?



How confident are you in your understanding of how to use Evernote®?



Did Evernote® allow you to keep a close record of your thoughts, reflections, and analyses of your learning this semester?



Do you think you would use Evernote (or a similar tool) as a framework for collecting and assessing student work when you are a teacher?

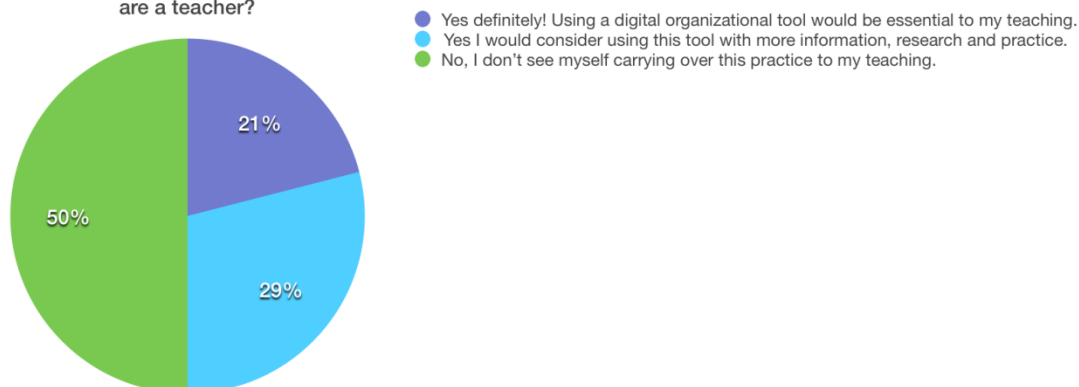


Figure 4. Student responses to a survey on Evernote® use.

Next, we highlight a representative sample of the pre-service teachers' responses to the free response questions in the survey.

Survey Question 1: How have the notebooks on Evernote® supported your learning this semester?

- “It has a useful search feature that lets you look inside of attached documents as well which I really enjoy.”
- “The use of tags to organize and locate specific responses make it easy to find things.”
- “They have helped me organize my work into separate ideas within the same course. I like being able to tag my assignments so that I can find them easily. I also enjoy how all of our work can be found on one source rather than having to switch to [the LMS].”
- “They make accessing readings and instructions for assignments very easy. You can't lose them, they are always available to you.”
- “I like that all of my thoughts are organized in one program for reference and can be shared with my instructors without wasting paper or keeping track of notebooks.”

Survey Question 2: How have the notebooks on Evernote® interfered with your learning this semester?

- “They haven't. Ever since learning how to use them Evernote® has only helped my learning.”
- “Yes, it is sometimes really hard for me to find things in Evernote®, such as readings or the course calendar. Maybe I just struggle with using the computer interface but luckily, the iPad Evernote® is a little easier to navigate.”
- “At the beginning they were very hard to understand. The newness of the technology limited me for a while but now it is better.”
- “It was a little difficult to learn. I still doubt that I am using Evernote® to its full potential.”
- “Being technologically illiterate, it has taken me a long time to get used to submitting assignments via Evernote®, and I feel as if half the time I spend on assignments is just figuring out how to submit them.”

Survey Question 3: What do you like the most about using Evernote® in your Methods, Curriculum, and Practicum courses?

- “Chance to learn new technology.”
- “It is an easy way to turn in assignments outside of class.”
- “The easy ability to edit and share work with professors.”
- “I like being able to tag my ideas in a work then reference them throughout my Evernote® notebooks. I also like how it links to my phone so that I can access Evernote® on various devices.”
- “I like that I don't have to worry about emailing in an assignment or printing it off. I like that the minute I am done with it is already turned in.”
- “I love being able to jot down resources, and quick things I learn in class and at the high schools.”

Survey Question 4: What do you like the least about using Evernote® in your Methods, Curriculum, and Practicum courses?

- “always having to have my computer”
- “I just did not like setting it up and learning how to use it, but once I did that I liked it.”
- “I love putting pen to paper and I really miss doing that in these classes.”
- “It's on a laptop, which is conducive to a lot of distractions and factors outside of my control. I'm more of a paper-and-pencil kind of guy.”
- “I wish it would send some kind of notification when my instructor edits/grades one of my notes.”

Future Considerations

Our integration of Evernote[®] as an interactive notebook established a level of communication, collaboration, and organization that would not have been available with a traditional paper notebook. Even so, we met some unforeseen challenges during implementation. While we were familiar with the previously referenced research (e.g., Lei, 2009) indicating that college-aged students may not be familiar or adept with a range of non-social media applications, we underestimated the amount of time we would need to invest in teaching technology skills. In retrospect, we realized that pre-service teachers in our program had probably not been exposed to many technology-integrated courses prior to ours. The majority of our pre-service teachers, for example, had taken extensive coursework in history, where we have learned through observations that courses are often taught through traditional lectures and students are assessed through several “blue book” exams over the course of the semester. What we were asking them to do in our education classes was already very different from what they were asked to do in those courses, and integrating technology added another layer of challenge. It is perhaps for this reason many of the pre-service teachers (as indicated in the figures and sample responses provided above) were resistant to the change in pedagogical method and having to learn how to use a new application. This was particularly interesting and frustrating since what many pre-service teachers claim they want from our program are practical methods they can use in their own teaching. Challenging their pedagogical assumptions of what is good teaching was hard to undo, especially as we modeled 21st century methods to pre-service teachers who were used to 19th century delivery.

In addition to resistance to learning a new pedagogical method and digital application, other challenges were simply teaching pre-service teachers to use the application and encouraging them to persevere when problems arose. Prior to the beginning of the semester, we provided in-depth written instructions for students to complete the following tasks: download Evernote[®], create a user account, set up class notebooks, and share the notebooks with us. It became clear quickly, however, that we should have spent a portion of the first few classes to practice other facets of the application’s use. While we as instructors took the time to explore and learn the ins and outs of Evernote[®], we had not planned to facilitate the same type of practice time for our pre-service teachers. Some of the pre-service teachers seemed to figure out the application quickly and were able to problem solve independently. There were a handful of pre-service teachers, however, who struggled significantly, even when provided with written or video directions. As a result, we spent a considerable amount of time working with individuals teaching them how to use Evernote[®]’s functions. We should have planned to use instructional time to teach these skills to the whole group. For example, we could have assigned basic tasks or assessments that would have allowed students to familiarize themselves with the various components of Evernote[®] they would be required to use throughout the semester. In addition to ensuring all pre-service teachers became familiar with the array of features offered through Evernote[®], this instructional time would have allowed us to gauge pre-service teachers’ technological abilities earlier in the semester and made it possible to provide enhanced support early and often to individuals who were struggling to make sense of the application. This lesson was important to us as it reiterated Ertmer and Ottenbreit-Leftwich’s (2010) statement that teachers must possess basic technological skills before being capable of teaching students to be technologically capable. While we had not expected the pre-service teachers to come into the class already knowing how to use Evernote[®], we fell back on some our assumptions about the

digital native generation as we planned to introduce it. We failed to anticipate that some of the pre-service teachers would struggle to learn to use the application. This experience confirmed the need to spend the time necessary to teach technology in teacher education classrooms and to invest in pre-service teachers' technological capacities and skills, instead of assuming that they will pick it up along the way.

Conclusions

Despite the challenges experienced, Evernote[®] is a promising technology that for the creation of digital interactive notebooks and teacher education spaces. Although the current literature is sparse, we hope other practitioners may take up the use digital interactive notebooks and add to the body of knowledge of these practices in higher education. Evernote[®], as an interactive notebook, is a rich resource for a variety of reasons we initially did not foresee. A digital interactive notebook, for example, serves as a record of the semester for both students and instructors. For pre-service teachers, this means they can easily revisit planned lessons, read articles, or receive feedback. For instructors, a material representation of the semester can be critical to the planning of the course for the next year. We can evaluate the pre-service teacher work as a whole and see what assignments and readings worked and which ones did not. This type of review would not have been possible with a traditional interactive notebook since we presumably would have handed the notebook back to our pre-service teachers at the end of the semester. It allowed for a mentoring possibility between faculty instructors and graduate student teaching assistants. The faculty was always aware of the feedback the teaching assistants were giving the pre-service teachers and were able to provide guidance and advice on their pedagogical practices. This practice could certainly be expanded for mentoring possibilities because of its relatively unobtrusive nature.

Evernote[®] is an excellent organizational, review, and collaboration tool. It makes day-to-day tasks like grading easier and allows students to review feedback instantaneously. It also lends itself to more specialized collaborative endeavors, like writing this paper, in ways that have been previously unavailable. We believe this application has significant potential to help forge greater connectivity between the university and our PDS partners, which is our goal for expanding our use of Evernote[®] in future academic years. We plan to invite cooperating Pre-Kindergarten-12 teachers to join our course Evernote[®] notebooks so that they may gain a greater understanding of the tasks, readings, and assignments that pre-service teachers will undertake in their placement classrooms. This will be a critical move in our goal to maximize the potential of the PDS model and to continue to work against the theory and practice gap as well as the chasm that divides classroom teachers and teacher educators within teacher education programs. Ultimately, we hope to introduce the use of Evernote[®] and interactive notebooks in ways that might demonstrate their potential to improve social studies learning and teaching experiences in social studies settings and to continue to learn from classroom teachers with whom we work in order to improve our efforts to teach technology to pre-service teachers. Every year, more of our partners find themselves in one-to-one technology contexts without specific ways of integrating the technology in meaningful ways. It is necessary to provide current pre-service teachers the space and opportunity to master Web 2.0 technology prior to entering these contexts. Providing pre-service teachers with instruction and experience in technology use is an important step toward arming them with the attitude and skill required for the classroom challenges that lie ahead.

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