



Jena Parish

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Dr. Redish

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Implementing Web Tools in an Elementary Classroom Setting

Since the development of the Internet in 1989, the role of the Web in our society has vastly changed. In the early 1990s, Internet users were generally looking to consume online content, but in the past decade, Internet users have instead become *creators* of online content. This has become known as the Read/Write Web. Anyone with Internet access now has the ability to become an author, editor, contributor, or publisher. This shift in Internet use has not only led to technological changes, but it has also continued to move our society towards an ever-changing, digital culture. Communication and collaboration with peers and colleagues near and far has become the everyday norm through the use of the Internet.

Considering the rapid and immense changes that the Internet has made since its development, it is time to analyze our educational settings and determine how the teaching and learning process is reflecting these changes. It is important that engaged learning through technology use, specifically the use of the Internet and the Read/Write Web, becomes a reality in our classrooms. It is easy to see that technology integration will continue to grow as an overwhelming force in our society and workplace. To be successful in the 21st century, students will need to become adults who are critical, technological thinkers. It is the job of the current educators to prepare the students and learners for what is to come. To be an effective and authentic educator, it is crucial to make learning experiences based on the real world. The real world is filled with Internet tools such as the social networking, wikis, blogging, and multimedia publishing; therefore, these elements need to be brought into the classroom to create meaningful learning opportunities that students can apply to their school experiences as well as their experiences at home. Well thought-out Internet experiences can be infused in the curriculum to develop stronger understanding, but it can also be used for long term purpose of preparing our

students for their future endeavors. Ultimately, use of the Read/Write Web in the classroom will lead to well-prepared individuals in the real world.

For my capstone experience, I wanted to help teachers find engaging and meaningful ways to implement the Read/Write Web in the classroom. Through my own research, I had realized the importance of Internet tools and I thought it was important for students to, not only look at the content, but also become the creators of the content. I decided to develop a professional learning community at my school that discusses and shares resources for implementing web tools in the classroom. My capstone experience includes the following: pre-survey results and analysis, a mini-literature review, selection of and research of web tools, creation of learning session materials, presentation of learning sessions, post-survey results and analysis, and creation of a collaborative wiki.

Description of Capstone Experience and Results

Pre-Survey Results and Analysis

Before creating or implementing any learning sessions, I decided to develop a needs assessment. A needs assessment is an important part of implementing effective professional learning. I wanted to see what the participants already knew about web tools and their implementation. I also wanted to determine what web tools teachers already had some experience with. I decided it was essential to keep the survey simple and to-the-point. I included the following questions: (1) How often do your students use the Internet in your classroom? (2) How are student most likely to use the Internet in your classroom? (3) What are students most likely to use the Internet for in your classroom? (4) Do you know what a web or Internet tool is? (5) Do you use web or Internet tools in your classroom? (6) Which of the following Internet tools or resources have you used with students? The first five questions allowed the participants to

choose one answer from multiple choices. The final question allowed participants to check all that applied as well as include any web tools that weren't already listed. I also included an open comment box so the participants could share any additional Internet comments or concerns they may have. The survey can be found at the following link:

<https://docs.google.com/spreadsheets/viewform?formkey=dDgwcEREekEtZXhnWC1OSWhVNjRHeWc6MQ#gid=0>.

There were a total of eight responses collected from the survey. From the survey results, I was able to determine basic information about web tool implementation in the participants' classrooms. One participant uses the Internet in their classroom daily, four participants use the Internet in their classroom weekly, and three participants use the Internet in their classroom a few times a year. Four of the participants' students are most likely to use the Internet independently and four of the participants' students are most likely to use the Internet as a whole group. There were several responses for the ways students are most likely to use the Internet in the classroom. Three of the participants said that their students are most likely to review previously taught skills, two of the participants said that their students are most likely to use the Internet to practice new concepts, two of the participants said that their students are most likely to use the Internet to complete projects or tasks, and one participant chose other and shared that their students are most likely to use the Internet to complete research. Five of the eight participants know what a web or Internet tool is. Four of the eight participants use web or Internet tools in their classrooms. Three of the participants have used Prezi with their students before, one of the participants has used Google Docs with their students before, and one of the participants had used Glogster with their students before. There were no additional comments or concerns listed by any participant.

Through the survey results, I determined what I would focus on for the learning sessions I would implement. I wanted to share with my colleagues meaningful ways that they could implement Internet tools in their classroom at least on a weekly basis, but preferably a daily. I also wanted Internet use to shift from drill, practice, and review to completing projects and tasks. Finally, I also all of the participants to end the learning sessions knowing what a web tool was and using web tools in their classroom in some way. While some of the participants had used Google Docs, Prezi, and Glogster before, I still decided to create learning sessions about these tools.

Mini-Literature Review

In the process of completing my project, I decided it was necessary to do additional research about the implementation of web tools in an educational setting. I wanted to find concrete evidence that web tool implementation was an effective way to provide engaging, authentic, and meaningful learning experiences. Through the process of writing my literature review, I read 26 professional articles as well as reviewed a textbook. All of the professional reading I completed focused on the implementation of web tools in classroom settings. While the focus of my capstone project was an elementary level, I decided to broaden my research to any classroom setting in order to gain as much insight as possible. The guiding research questions I used for my review were: (1) What web tools are available for classroom instruction? (2) How does the implementation of web tools affect educators and teaching? (3) How can web tools be effectively implemented? (4) How does the implementation of web tools affect student learning? The research highlighted in this review examined four critical areas related to Web 2.0 tools in an educational setting. Through my synthesis of the reading, I found the following results.

First, a vast array of Read/Write Web tools is available. There are six main categories of Web tools including audio and video conferencing, blogs, podcast, RSS feeds, social bookmarking, and wikis. Video and imaging sharing, social networking, and slideshow creation are also Web 2.0 tools that can be implemented in classroom instruction (Gooding, 2008). The most frequently discussed Web tools throughout the articles reviewed for the literature review are: blogging, wikis, social networking, and social bookmarking.

Second, research states the implementation of Web 2.0 tools requires that teachers have developed TPACK and promote creativity and authenticity in their lesson plans (Nelson, Christopher, and Mims, 2009). In a study completed by Karchmer, the implementation of Internet tools in the classroom was not found to be any harder or easier than the implementation of traditional print-based materials (2011). This implies that teachers can transition their current teaching practices to better meet the digital needs of their students with little change in level of difficulty of implementation. Levin and Wadman found that, while teachers have different definitions of the effective use of technology, implementation of web tools positively affected student learning because teachers were more likely to focus on student understanding (2006).

Third, effective implementation of Web 2.0 tools depends on the development of safe online protocols, collaboration between students and teachers, and the creation and sharing of new knowledge (Hartshorn and Ajjan, 2009) as well as authenticity and relevance of the tool to the learning (Frye et al, 2010). Teachers can additionally turn to the NCTE's Framework for 21st Century Literacies for additional recommendations on effective implementation of technology, including Web 2.0 tools in the classroom (Atkinson and Swaggerty, 2011).

Fourth, the implementation of web tools affects student learning by providing meaningful, engaging learning, social interaction, and skills required for 21st century citizens.

Hartshone and Ajjan found that implementing Web 2.0 technologies can increase student satisfaction in course work as well as improve student learning and interaction (2009). In a study completed by Hemenway, a majority of teachers relayed that implementation of Web tools had positively affected their students (2000).

Selection and Research of Web Tools

In the early stages of my capstone proposal, I wanted to implement eighteen different learning sessions based on the implementation of web tools in an elementary classroom. I had originally planned on implementing these sessions through the entire 2011-2012 school year. After returning to school from maternity leave and having discussions with the professional learning community participants, I decided to narrow my focus down to ten learning sessions and I would facilitate these sessions in the spring of 2012.

Before I began implementing any of the sessions, I decided to research web tools that could be used in an elementary setting. From this research, I selected the following tools: Google Docs, VoiceThread, Pikistrips, Prezi, Gliffy, Wordle, Flickr, Wallwisher, Timetoast, and Glogster. Through future research, I realized that Pikistrips is no longer available so I used a comparable tool called Make Belief Comix. Also, based on conversations had during our learning sessions, I decided to implement a session based on Twitter instead of using Flickr. Every week, I spent at least one hour researching and learning about each tool that was the focus of the learning session for that week, because I wanted to feel comfortable discussing the tool and sharing it with others.

Creation of Learning Session Materials

For each learning session, I created a handout or tutorial for using a web tool as well as a lesson plan that implemented the web tool. I tried to use a consistent format throughout each

learning session. I wanted the handouts and lesson plans to be easy-to-read and understand. If possible, I used screen capture tools to create step-by-step procedures that teachers could reference when using the web tool on their own. I also prepared a presentation to supplement the handouts and lesson plan. This gave me a reference point as I was presenting a new web tool. I spent at least three hours for each learning session developing materials to correlate with the web tool. These materials were ultimately placed on the wiki that will be shared with all of the participants.

Facilitation of Learning Sessions

There were ten learning sessions implemented and each learning session lasted approximately 45 minutes. Learning sessions were held on Wednesdays with the exception of one session that was held on a Tuesday due to a field trip. I provided time during planning and after school on Friday to support any teachers who needed additional help after the learning sessions. The exact dates and topics for each learning sessions are listed in the table below.

Date	Topic
3-7-12	Google Docs
3-14-12	VoiceThread
3-21-12	Make Belief Comix
3-28-12	Prezi
4-11-12	Gliffy
4-18-12	Wordle
4-25-12	Twitter
5-1-12	Wallwisher
5-9-12	Timetoast
5-16-12	Glogster

Post-Survey Results and Analysis

At the end of school year, after each learning session had been implemented, I emailed the link to a post-survey to evaluate the effectiveness of the learning sessions that were implemented. I wanted to see if the learning sessions impacted faculty development and student learning. Throughout the implementation of the learning sessions, I had informally observed teachers implementing web tools with their students as well as had discussions about teachers implementing web tools. I already knew that the use of web tools as a means to engage students in learning was increasing, but providing a post-survey allowed me to compare to the data I collected before the learning sessions began. I decided to implement the same survey that I used for the needs assessment. The post-survey can be found at the following link:

<https://docs.google.com/spreadsheet/viewform?formkey=dHVpNW8zSXdSeW5lRXpEeW5lRnJ0b0E6MA#gid=0>.

There were a total of eight responses to the survey. From the post-survey results, I was able to determine what learning had taken place. Seven participants said they were now using the Internet daily in their classroom and one participant said they were using the Internet weekly. Six of the participants said that students are most likely to use the Internet as a whole group while 2 participants said that students are most likely to use the Internet independently. Five of the participants said that students are most likely to use the Internet to complete projects or tasks while 3 of the participants said students are most likely to use the Internet to review previously taught skills. All of the participants said they knew what a web tool was and use web tools in the classroom. There was a significant increase in the amount of web tools that had actually been used with the students. All of the participants had used Wordle with their students and seven of the participants had used Prezi with their students. Five of the participants had used Wallwisher.

Four of the participants had used Gliffy and Timetoast. Three of the participants had used Glogster. One of the participants had used VoiceThread and Make Belief Comix. None of the participants said they had used Flickr or Pikistrips. This is because I did not end up facilitating a learning session about either of these web tools.

A comparison of the pre- and post- data is presented in the table below.

	Pre-	Post-
How often do your students use the Internet in your classroom?	13% said daily. 50% said weekly. 38% said a few times a year.	87% said daily. 13% said weekly.
How are students most likely to use the Internet in your classroom?	50% said independently. 50% said as a whole group.	25% said independently. 75% said as a whole group.
What are students most likely to use the Internet for in your classroom?	25% said to provide drill and practice for new concepts. 38% said to review previously taught concepts. 25% said to complete projects or tasks. 13% said for research.	38% said to review previously taught concepts. 62% said to complete projects or tasks.
Do you know what a web or Internet tool is?	63% said yes. 38% said no.	100% said yes.
Do you use web or Internet tools in your classroom?	50% said yes. 50% said no.	100% said yes.
What of the following Internet tools or resources have you used with your students?	13% said Google Docs. 38% said Prezi. 13% said Glogster.	88% said Prezi. 13% said VoiceThread. 50% said Gliffy. 100% said Wordle. 50% said Timetoast. 38% said Glogster. 63% Wallwisher. 13% said Make Belief Comix.

Collaborative Wiki

Per the proposal I developed for my capstone, I decided to create a wiki to house all of the learning session materials and provide a collaborative way to share lesson plan ideas based on the web tools I shared. My original plan was to use the wiki throughout the learning sessions,

but, unfortunately, this did not go to plan. Instead, I have decided to use the wiki as a follow up element to the professional learning community that has already been facilitated. At the beginning of the 2012-2013 school year, I will email the link to the wiki to all of the participants of the professional learning community. I will also provide it to any other teachers that are interested in using the tools. This will serve as a reminder to the participants about the web tools learning session and provide all of the resources they might need. I will also encourage the participants to add any of their own materials (handouts, articles, lesson plans) to the wiki. For the inclusion of the wiki into the capstone project, I created the wiki and uploaded all materials from the learning sessions. The wiki can be found at the following link:

<http://webtoolsinelementaryschools.wikispaces.com/>.

Follow Up Plans

In addition to using the wiki as a follow-up tool to the learning sessions, I would like to begin implementing a “Web Tool of the Month” type newsletter. On the newsletter, I would provide some background information, step-by-step instructions, and ideas for implementing in the classroom. This type of information could benefit all staff members including those who are not interested in participating in formal professional development at this time.

Reflection

Technology Facilitation and Leadership

Technology facilitation can be described as modeling, implementing, and promoting technology integration in the classroom. Through the completion of this capstone project, I feel like I experienced the epitome of technology facilitation. I was able to develop learning sessions based on implementing web tools in an elementary classroom setting and, in turn, teachers were able to take the information from the learning sessions and provide technology-enhanced

learning environments for their students. Through the learning sessions, I was able to collaborate with other teachers about integration of technology into the curriculum. I was also able to thoroughly research web tools and use that research to make professional decisions about their implementation. Finally, I was able to assist teachers as any technology issues arose. The role that I took on for my capstone project represents some of the responsibilities that a technology facilitator would have. In the future, if I get the opportunity to be a technology facilitator, I would be able to apply my experiences from my capstone and my graduate courses to successfully complete my job.

This capstone project also gave me ample opportunity to work on technology facilitation within my own classroom. While I try to implement technology as often as possible, I frequently feel like I don't have time to truly implement technology the way I would like to with my students. As I modeled using different Internet tools in my classroom, I found that my students were more engaged in and more excited about their learning. These experiences confirmed how important it is to implement technology in the classroom. In the future, I will make time for technology no matter what.

As the facilitator of the web tools learning sessions, I got the opportunity to take on a leadership role. I definitely learned that taking on leadership roles is not always easy! I felt like I had to really put myself out there, but, the end result was ultimately worth all of the effort. In my opinion, technology facilitation and leadership will always go hand-in-hand. If I plan on being a technology facilitator, I will frequently be in a leadership position. It is necessary that I become comfortable with this role.

Knowledge, Skills, and Dispositions

Through the implementation of my capstone project, I often reflected on the knowledge, skills, and dispositions required of a technology leader. I realized that the role of technology facilitator, much like technology in itself, is ever changing. I learned that I need to maintain flexibility and understand that, as the technology evolves, I will have to continue to learn new things.

As I first began working on my capstone project, I thought about visionary leadership and I referred back to the vision I created at the very start of the program. I envisioned that technology use in the classroom would move beyond drill and practice and towards more engaging and authentic learning experiences. I wanted to share that vision with my coworkers in hopes that I could inspire them and we could all move our current reality forward. I knew that teachers were using the Internet in their personal lives and in their classrooms, but I wanted to share more meaningful ways that Internet tools could be applied to an elementary classroom setting. I began researching web tools and determined what tools would work best at my school. Ultimately, I would be recommending the use of these tools and implementing strategies for managing these tools in the classroom during the learning sessions I presented.

After I developed the vision that I wanted to share with my coworkers, I began thinking about the teaching, learning, and assessment part of my capstone. I wanted to model and facilitate the design and implementation of web tools-based lessons to create technology-enhanced learning experiences. In my opinion, technology use should fit seamlessly into the content standards. It is important that, at the center of the instruction, the teacher is focusing on research-based, learner-centered strategies. I truly believe that web tools can provide authentic learning that enhances higher order thinking skills and processes as well as providing differentiation if needed, but, ultimately, the use of the web tools needs to meet of the needs of

the students. For my capstone, I wanted to implement the use of web tools within my own teaching practice as well as work with other teachers to utilize web tools to improve their own teaching, learning, and assessment.

As I worked on developing the learning sessions I would present to my coworkers, I thought about what an effective digital learning environment should look like and I was reminded of the TPACK framework. An effective digital learning environment will find the balance between technological content, pedagogical content, and content knowledge. This requires utilizing classroom management strategies to implement web tools within the context of student learning experiences. Through my capstone project, I tried to select digital tools that were compatible with my school's curriculum model. I also realized how important it is to help teachers troubleshoot as they are setting up digital learning environments in their classrooms.

When implementing professional learning, I attempted to follow the steps required for a successful professional learning community. First, I conducted a needs assessment survey. In the fall of 2011, I had implemented a survey on technology use and integration. From this survey, I determined that teachers needed to have more engaging ways to implement technology in their classroom. This gave me confirmation that my capstone proposal was over a topic that would benefit my school. I implemented an additional survey about the Internet and web tools before I began my learning sessions. This helped me determine strengths and weaknesses and informed the content and delivery of the learning sessions I would implement. I also conducted a post-survey to determine the effectiveness of the sessions. My goal was to increase teachers' technological skills as well as impact student learning. From reviewing my results, I felt that I did accomplish these goals.

Overall, I feel that a technology facilitator needs to demonstrate continuous growth and learning. One of the biggest things I learned is that professional reading and research will be a constant in my career. I will also have to evaluate and reflect on my own professional practices and dispositions in order to be a better educator and technology leader.

Recommendations

While reflecting on my capstone experience, there are several things I think could, and should, be adjusted to best meet the needs of the teachers at my school. If I were to implement these professional learning sessions again, I would use an online format. I think this would have allowed more teachers to participate and I also think it would have been a natural fit for the topic I was presenting. I also would have implemented the use of the wiki from the beginning of my learning sessions. Looking back on everything I completed for the capstone project, I think all of the teachers would have benefitted from the use of the wiki. I am hoping that the wiki will become a useful tool when the 2012-2013 school year starts. Finally, I would recommend that facilitators of these types of learning sessions include an assessment piece that evaluates the participants' reactions. I wish I had more information about what parts of the professional learning community the participants enjoyed the most and what parts they would change.

Conclusion

Overall, I found the capstone experience to be overwhelming, but enlightening. There were definitely moments that I felt like I wasn't balancing everything very well so I can say that I am very proud of myself for making it this far. My main goals of completing this capstone were to teach others about engaging ways to use web tools and to get more teachers to use web tools in their instruction. I feel like I accomplished these goals. In the future, I will be able to use the knowledge and skills I gained from this experience and apply it to my future endeavors.

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