

Blending Technology into the Classroom Curriculum: A Successful Recipe for Library and Classroom Teachers

21st century teenagers are connected learners who expect to use technology daily, whether it be in their classrooms or the library. Librarians can model the use of technology when teaching information literacy so that both teachers and students can gain experience using these valuable online resources.

Finding the right ingredients for successful technology integration into the classroom curriculum might be compared to finding the perfect recipe when cooking for family or friends. Although we use a step-by-step process when following a recipe, we often add or omit ingredients in order to please the people we are cooking for.

Likewise, effective librarians gear their instruction to the various lesson plans, instructional goals, and assignments of the teachers they work with. Just as cooking for others can be challenging, so too, can working with teachers who not only have a variety of instructional content goals but also varying levels of technology expertise, from the expert to the most inexperienced.

This article describes a successful strategy that has worked in a high school setting, but can be easily adjusted to any level. It will highlight course content benchmarks, as well as research and technology benchmarks.

Thirty five years of working as a librarian with different age levels (elementary through community college), as well as facilitating thirty-seven libraries in a suburban school district, has provided me with countless opportunities to collaborate with all types of teachers. Along the way, I have created a librarians' "cookbook" of sorts, which contains successful recipes for the teaching of information literacy, often adding a pinch of technology to the basic ingredients, while collaborating with teachers of varying content areas and technology expertise. Success in the school library field is dependent not only on building positive relationships with students, but also with teachers and administrators.

From a librarian's viewpoint, I have found that the best recipes include a technology ingredient geared toward two types of teachers:

1. The enthusiastic and knowledgeable teacher who already uses technology daily or
2. A teacher who appreciates support in trying out new technology. Both teachers can benefit from our help, but the support needs to be individualized. One size does not fit all.

My co-author, Jennifer, is an enthusiastic teacher who uses technology daily, enjoying the one-to-one initiative in her 9th grade geography classroom. Jennifer also understands the importance of teaching her students the steps in the research process, not always from start to finish. For example, she frequently asks her student to locate an online news article from a credible source or a primary source document in a library database, working toward a full-blown research project later in the year, involving all of the steps in the research process. In this way, she expertly guides her students through the research process gradually, ultimately resulting in a deeper understanding of the process, from start to finish. Knowledgeable and enthusiastic teachers like Jennifer will not only seek you out, but will also set a great example for their colleagues.

When working with Jennifer, I discovered that she often presented her lessons using Blendspace or her district's learning management system. Although I had heard of Blendspace, I had not yet used it in the library, but soon discovered how easy it was and how it could facilitate our collaboration in presenting a lesson that involved geography content, research, and the use of technology.

Build Technology Platforms Collaboratively

Jennifer outlined her purpose, objective, and methodology as she does for each lesson and/or project that she assigns her students. We posted these objectives on a new Blendspace for the students to access. We both contributed to the Blendspace. Jennifer provided the lesson plan while I provided links to resources for students to use. These resources included library databases and credible websites. I offered to do some preliminary searching on the topic, finding the very best resources for the students to use—content specialist and information specialist working together! We decided to add another technology layer: that of requiring the students to present their research using a web 2.0 tool in addition to a written component. Students were asked to create their technology piece using their choice of Thinglink, TimeToast, or Piktochart.

The geography content standards included the National Geographic geography standards, as well as the Common Core ELA-Literacy Grade 11-12 standards.

National Geographic Geography Standard 14

The geographically informed person must understand the human imprint on the physical environment. Many of the important issues facing modern society are the result of human modifications of the physical environment. Some of these modifications are intended and positive; others unintended and negative. These changes have political, economic, and social implications at all scales, from the global to local.

Common Core Standards ELA-Literacy Grade 11-12

Integration of Knowledge and Ideas:

CCSS.ELA-LITERACY.RH.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RH.11-12.9

Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

Project Title: China's Human-Environment Interaction over Time

Jennifer used the above National Geographic geography standards to form the basic inquiry trajectory her students would use to guide their research, while at the same time providing a focus on China to manage the amount of information her freshman students would explore. Using this standard, Jennifer created a project plan that asked her students to gain a better understanding of one of the major themes of geography—human-environment interaction—while also exploring changes in technology over time in China that allowed humans to modify the environment.

Using an inquiry model where the students brainstormed questions provided a basis for the project and the questions were then introduced before research began. Students were to research the Three Gorges Dam, strip mining in China, the Great Wall of China, terraced farming and the evolution of rice cultivation, and modern Chinese air pollution (see <https://www.tes.com/lessons/S7qaSp73i4OBHw/reemergence-of-china-as-a-world-power>). The final product required both a technology piece and written component. The technology piece provided a means to exhibit the students' gained knowledge, while the written component required the students to apply their knowledge in an analysis of human-environment interaction. This juncture provided the most collaborative efforts between the librarian and the teacher. Given the constant time constraints of teachers, my offer of preliminary research was most welcome. As Jennifer states:

While I want my students to research, as freshmen they need to be guided and focused so that they can accomplish their goals efficiently. I think the biggest reason teachers don't attempt research or inquiry-based projects is the pressure of time and content. Teachers worry about using several class periods on research to gain mastery of content because the process can require so much time to achieve instructional goals. Having a librarian offer to locate quality information and create project pages or libguides, guarantees my students have access to targeted, vetted information that guides them in the right direction without wasted time, yet still provides ownership of the final product. In addition, as a classroom geography teacher, I do not have the expertise my librarian possesses regarding the myriad resources in her collection. Mrs. Lankau uses her skill set as a librarian to support my goals regarding content, while also exposing students to the wealth of quality information available within their school. Without her collaboration, research in my classroom would happen far less frequently. The Blendspace we created together provided a useful presentation tool for me as the teacher, as well as a focused outline of available resources for the students to use for their information and as their product of research.

You can view the lesson plan at <http://schs.humbleisd.libguides.com/china-research>

The Blendspace is viewable at <https://www.tes.com/lessons/S7qaSp73i4OBHw/reemergence-of-china-as-a-world-power>. Click play to see the enlarged slides and to click on the research links.

Working with the Enthusiastic Technology Learner

The second example involves an experienced English teacher who was in the process of learning to use technology on a daily basis in his classroom. His goal was to make sure his senior students learned how to create an annotated bibliography as part of a research paper assignment on the topic of racism in the novella, *Heart of Darkness*, by Joseph Conrad. He requested a library assignment guide, based on the following curriculum requirements.

Sources:

1. Article provided by teachers
2. The novel
3. Six other articles from recommended library databases, websites, or books

Products:

1. An annotated bibliography based on sources used
2. An eight-page MLA style paper

Students would receive one test grade for the bibliography and another test grade for the eight-page paper.

Assignment guides in the Summer Creek High School Library are usually created using LibGuides. Sometimes, we do simpler ones using our Schoolwires Web editor, or a Web 2.0 tool such as Symbaloo, Glogster, or LiveBinders. Since this was a full-blown research project, a LibGuide was the way to go.

The use of technology was similar to Jennifer's project in that they both required an understanding and use of credible online sources: reliable websites, articles from online subscription databases, and ebooks. The products were different, however, as this one included an annotated bibliography and a paper using MLA format.

I determined the best way to help this teacher was to prepare a lesson on finding and using reliable online sources, mixing in details on creating the annotated bibliography element, and wrapping it up with directions on setting up a MLA formatted paper, using Microsoft Word 7 or 10. The LibGuide was pretty basic, providing all the sources students needed for their research, as well as examples of annotated bibliographies and links to MLA formatting rules.

As the library visit grew closer, I wondered if there was an instructional technology element that could be incorporated during the instructional phase. This addition would model a technique the teacher might eventually use in his classroom, at the same time engaging the students during the **MLA** instruction – not the most exciting topic for teenagers. Although I am careful to explain the meaning and purpose of the Modern Language Association, I use the acronym,

- **M**aking sure you don't plagiarize,
- **L**earning proper format, and
- **A**lways citing your sources to help them recall the details.

The teacher gave his okay to use the Web 2.0 tool, Padlet, to check for understanding after the research lesson.

In order to check for understanding, I wanted to engage the students with a task that involved reading an article about racism and *Heart of Darkness* in a

literature database. Rather than dividing the students up by the seating arrangement in the lab area, I decided to divide them up in a more engaging manner. Since most teenagers love to eat and food always seems to be on their minds, I organized them into the following types: carnivores, vegetarians, and pescitarians, with each type being given a specific activity. This worked well and meant that should they try to copy answers from their neighbor it was likely their neighbor would be working on another task.

Each group was asked to find articles on their assigned research topic, using one of the following databases: *Bloom's Literature Resource Center*, *Artemis Literary Sources*, and *Opposing Viewpoints*. Their task was to locate and skim a useful article, then to write a Padlet note, listing the following: their name, the name of the article, and a tool they used from the database toolbox. This not only kept the students engaged, but was a stress free way for the teacher to learn a new technology tool that he /she might later use in his classroom.

In this case, the following step by step recipe necessitated increased preparation on the librarian's part to ensure the successful blending of technology into the curriculum objectives.

Step 1: Roll out an assignment guide using LibGuides. <http://schs.humbleisd.libguides.com/heart-of-darkness>

Step 2: Prepare the research lesson **with** the teachers—inviting them to join in a collaboratively planned and taught lesson. Encourage him/her to send an electronic copy of the project guidelines and grading rubric for inclusion on the LibGuide. Sometimes, this results in the teacher letting you help with the content area lesson plan. Other times, all you will receive is the plan that has already been finalized. However, it is a step in the right direction and will eventually lead to increased collaborative planning.

Step 3: Mix in a demonstration of the online literature resources available in the library, asking the teacher to toss in some sample searches using content related keywords. This invites him/her to work in sync with the librarian—demonstrating to the students that help is available from both professionals.

Step 4: Fold in the MLA formatting rules, using Microsoft Word 2007 or 2010.

Step 5: Cover the structure of the annotated bibliography.

Step 6: Check for understanding by requiring the students to post a comment, using the Web 2.0 tool, Padlet.

Step 7: Spread some goodwill by offering to help grade the citations according to MLA rules—a surefire way to stir up more enthusiasm for your library program!

After a day of working with these AP English students, some surprising results occurred. The teacher asked if his AP colleagues could sign-up for the same library instruction. He then invited us to collaborate with him on an upcoming project for his level English classes. We were asked to introduce the LibGuide (<http://schs.humbleisd.libguides.com/five-page-satirical-essay>) to the level classes in one of our large group instructional areas. This was helpful to the teachers, since we could work with two classes at once in an area closer to their classrooms. Although this instruction was not as “hands on” as in the library lab area, it was a great way to reach more teachers and more students, at the same time showing them that we were willing to be flexible.

Once word spreads that you are available to collaborate with teachers, including stepping out of the library to beat a path to their classrooms to team teach, the less business you will need to scrape up. Don't be surprised when entire departments drop in to plan with you. Soon your collaborative cookbook of ideas will be brimming over and you will enjoy a perfect blend of subject content, technology, and information literacy. Bon appétit!

About the Authors

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