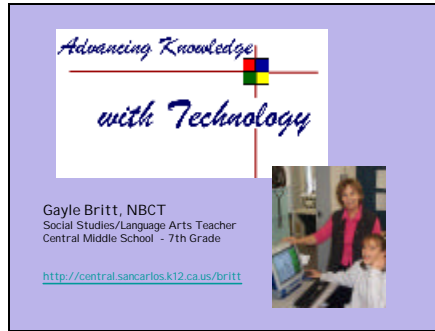
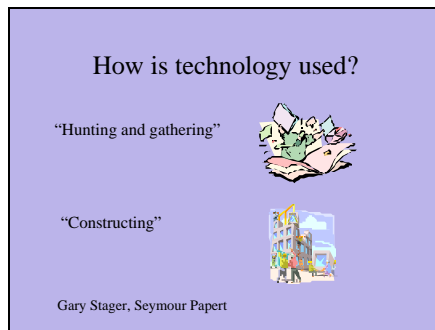


Slide 1



Hello. I'm Gayle Britt. I teach seventh grade social studies-language arts core at Central Middle School in San Carlos, California. My use of technology as a tool has been strongly influenced by the six years I participated in the Challenge 2000 Multimedia Project in which using project-based learning with multimedia evolved in my classroom. The year I went through the National Board certification process also gave me insights into effective teaching. Last year I conducted classroom action research as part of the masters' degree in educational technology from Pepperdine University. I continue to learn and improve by talking to my colleagues.

Slide 2



Pepperdine University professor and conference presenter Gary Stager talks about how technology is used by students as a "hunting and gathering" tool that yields an ample increase in their store of information, but Professor Stager—along with Seymour Papert, the famed technologist who taught for years at MIT—emphasizes that computers should be used as a constructional medium. Heeding their advice, I've had students use technology not only to gather information but to construct multimedia presentations to communicate that information. Yet I have found that just as students can complete other educational tasks without learning, they can also complete digital projects with many bells and whistles and not necessarily gain any deep understanding of the information

and concepts involved.

Slide 3

**Essential Question:**

“How do we design for digital media so that we can turn an increase in information into an advance in human knowledge?”

-Dr. Janet Murray

The question posed by Dr. Janet Murray from MIT—“How do we design for digital media so that we can turn an increase in information into an advance in human knowledge?”—is at the heart of what I want to know.

Slide 4

**Key Elements to Advance Knowledge:**

- Before starting -The design of the project requires visualization of concepts
- During implementation - The role of the teacher is a coach for success
- After completion - Student reflection requires metacognition

With Dr. Murray’s question in mind I found three elements to be critical in advancing knowledge.

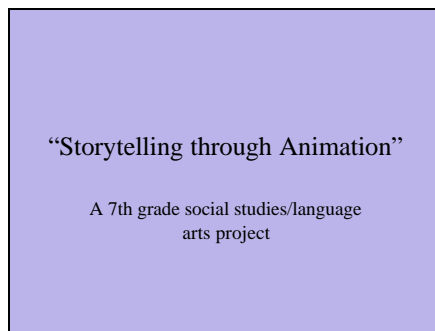
1. Projects requiring students to visualize or simulate concepts reveal learners’ perceptions and understandings and allow teachers to see more of students’ thinking. If I am going to advance my students’ knowledge, I need to know what they are thinking. Visualizations allow teachers to see more of the students’ thinking. Research has shown that

good readers make mental pictures of what they are reading.

2. Formative assessment allows for review, revision, and redemption, which means more learning and a better grade. Formative assessment during the project or “coaching for success” as I prefer to call it enables more comprehension and deepening of students’ thinking.
3. Eportfolios require students to think more deeply about their own learning, and by doing so they learn how to learn.

In summary, I found that through formative assessment of projects that require students to visualize their understanding and through metacognition via eportfolios, student learning is advanced.

Slide 5



To illustrate how those three elements impact student learning I will give some examples from multimedia projects I use in my classroom. While studying China and Japan, students did a huge China/Japan History Through Art Multimedia Project comprised of research (“hunting and gathering”) and two multimedia products (“constructing”).

Slide 6

<b>Standards Addressed by Project:</b>		
California 7th Grade Social Studies Standards	California 7th Grade Language Arts Standards	National Educational Technology Standards
Students analyze the geographical, economic, religious, and social structures of China and Japan in the Middle Ages	Students write fictional narratives. Develop a plot and point of view.	Students use technology tools to enhance learning, and promote creativity.

Concepts such as beliefs, trade, social structures, which are throughout the California 7th grade history/social studies standards, were addressed in the project, as well as universal themes, perspective, connections, past to present, and critical thinking. English language arts standards of students being able to write story narratives giving point of view, developing characters, setting, and plot were also evident. An important goal of mine was also that students would learn how to learn and how to approach future projects. By seventh grade some students have gotten quite good at completing tasks without learning. When I explained the project to the students I let them generate the goals and objectives of it.

Slide 7

<b>Project Steps:</b>		
1. Using primary sources, research the culture of medieval China or Japan through an artifact.	2. Based on that research write an "Antiques Roadshow" script. Create a replica of the art and video the performance.	3. Showing the emotions of the people of that time, write and animate a story personifying the art piece.

The teaching strategy that was used was project-based learning. This was a long-term project with many steps. When I looked at the product I wanted, I then designed scaffolding activities so that the students could attain the product.



## Slide 10

**Connections and Community Involvement:**

In the Middle Ages traveling minstrels went about the country sides of Europe and Asia entertaining by telling stories.

"A minstrel tells what his audience wants to hear." Adam of the Road.

The students became modern day storytellers and consulted with a professional animator from Pixar.


"What matters is what the audience thinks it means."

© Pixar Studios and © 2011 Disney. All rights reserved. No part of this presentation may be reproduced without written permission from Pixar Studios.

Because 7th grade social studies covers medieval China, Japan, and Europe during the time when traveling minstrels entertained with their stories, the project was designed so that students would become modern day storytellers/animators of historical tales. We had read *Beowulf*, *Adam of the Road*, and *Sign of the Chrysanthemum* and we were privileged to have a professional animator from Pixar Studios consult with us. The first time he came in he stressed to the students that they need to know about their topic (when he did an animated movie about elephants he spent 3 months in Thailand studying elephants! And they need to keep their audience in mind.

## Slide 11

Visualization reveals learning



There is no doubt that the act of visualizing forces one to have to do more than simply rephrase text. The process of visualization uncovered what students had not learned which allowed the teacher to do some "coaching for success" or ongoing assessment. As students worked I would print out their in-progress projects and ask questions about what they had done. These reviews made the students aware that the pictures they were drawing to illustrate their narratives had few connections to the stories they had written which were based on the art object and historical period we were studying. Some students drew their medieval Chinese characters in modern day Western clothing, but the review process sent the students back to their research to examine culture and fashion at that time and place.

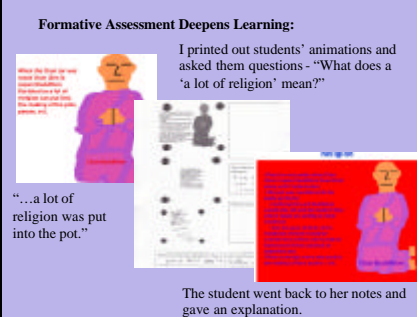
Slide 12

**Formative Assessment Deepens Learning:**

I printed out students' animations and asked them questions - "What does a 'a lot of religion' mean?"

"... a lot of religion was put into the pot."


The student went back to her notes and gave an explanation.



Knowing that they needed to address the impact of religion on their artifacts (California content standards), one group stated that "...a lot of religion was put into the pot." Again, teacher questioning helped the students realize that they really did not know what their statement meant, so they went back to the books to dig deeper. As a result they changed their project and deepened their understanding.

Slide 13

**Strengthen Through Activities by Bridges in the Story: The Book Day**




<http://challenge.central.sanctos.k12.ca.us/britt/core/content.s.htm>

To view some of the animated stories go to this website. You'll find five examples that you can view at your leisure.

Slide 14

**Reflections**

"I learned about conflicting emotions and exaggerations."  
"I learned that good stories come from emotions and what others want to hear."  
"I learned to write about something you have to know something about it."  
"You have to plan before you start."  
"I learned to make a mind map for research."  
"I like to talk to others to get better ideas."  
"I learned how to show expression and make the audience know."  
"I learned the religious influence on my art piece."  
"I learned stuff on the computer."



After the project was finished I asked the students to write reflections on their learning. Here are a few quotes. But, I wondered if the students were just saying these things or if they were really true. So I asked them to do another project similar in design, but different.

Slide 15

**Choose Your Own Adventure**

A 7th grade social studies/language arts project

I wanted to make sure that the students had really learned what they claimed to have learned from the storytelling through animation project so when we studied medieval Europe after China and Japan, I assigned a "Choose Your Own Adventure" project. Again with the California content standards in mind, the project goals were similar to the ones mentioned previously. Students as modern day storytellers had to create an interactive story/game using visual programming software Stagecast by Creator. Marc Prensky suggests in his book, *Digital Game-Based Learning*, that we need to take a more learner-centered approach. The added element of interactivity and connections to the real world of the students made this a very engaging project.

Slide 16

1. Study the impact of the Black Plague. Read "The Pardoner's Tale" and look at the "Dance of Death"	2. Role play a person living in the Middle Ages in Europe and write journal entries from that person's perspective.	3. Create an interactive story/game based on historical facts and allowing the view to choose an adventure for the main character.
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The students' metacognition of the previous project propelled them into learning for this one. I was amazed when students immediately started this project with doing research and reviewing notes and text rather than opening the software application.

Slide 17



You may view this group's project on the web if you have the Stagecast Creator plug-in. If you go to the web page on the slide, you'll find directions about how to get the plug-in.

Slide 18

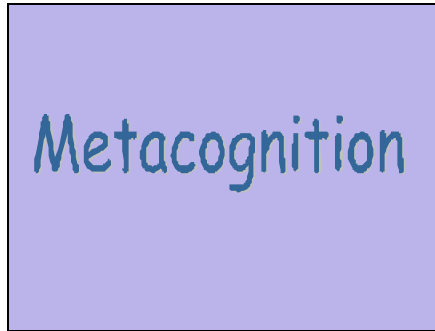
"Studying one's own learning...can be a powerful method of enhancing learning."  
Seymour Papert

A screenshot of a student's eportfolio titled "My Three writing pieces". It displays three writing samples: a typed document, a page with a drawing, and a page with a geometric diagram. Below the samples, there is a caption: "The ideas of these writing pieces to find work about them."

<http://challenge.central.sancarlos.k12.ca.us/gbritt/eportfolio.html>

Finally, students put together portfolios of their year's work. They have kept digital copies of their multimedia projects and I have kept paper major assignments with reflections. One reason I have them compile their eportfolio near the end of the year is because they relearn much of what we studied. Also, they can look at their improvement throughout the year and know that they learned something in seventh grade.

Slide 19



I have this sign in my classroom:  
“Metacognition Practiced Here”  
Research on learning emphasizes the importance of people taking charge of their own learning. Students need to recognize when they understand and when they need more information.

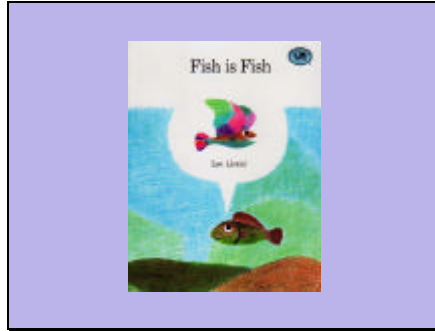
Metacognition refers to people’s ability to predict, monitor, and understand their own level of mastery. For example, a student may have a certain set of facts to remember, reads over the information once, and thinks he/she knows it; but on the quiz cannot recall the information. The student needs to be able to look at his/her own learning and say just reading over information once is not enough to remember it. If they don’t see this do they continue to fail tests?! In education the pattern is repeated over and over.

The metacognitive approach to teaching includes activities that focus on sense-making, self-assessment, and reflection on what worked and what needs improving. The student questions might be:  
How can I learn? How can I learn more?

The teacher questions are: How do my students learn? How can my students learn more?

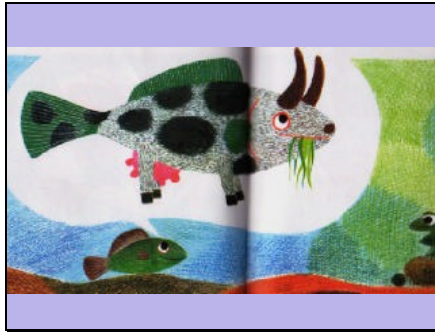
Two major reasons to do portfolios: the student learns how to learn and the learning is revealed to the teacher so he/she can adjust instruction.

Slide 20



When the students reflect on their learning the teacher has a better idea if his/her goals are being met. In Leo Lionni's book a fish has a tadpole as a friend. When the tadpole becomes a frog the fish asks him to come back and tell her what he saw on land. The fish comes back and describes cows. The fish imagines that a cow is a fish with an udder!

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As the frog described a cow this is what the fish thought a cow looked like!

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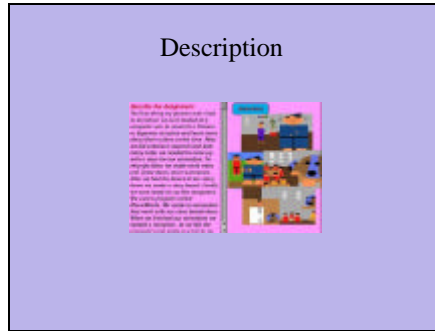
**Response Requirements**

- Describe - What did you have to do?
- Analyze - What did you learn? What is the evidence
- Reflect - If you could do it again what would you do differently to improve it?

A small, partially visible image of a book cover with the word 'Dad' and 'Mama' on it.

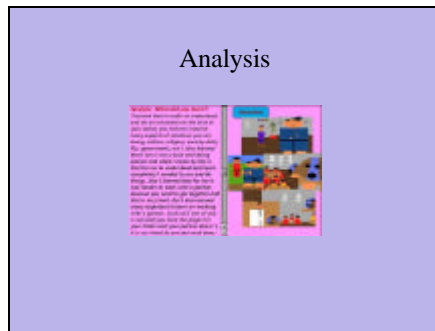
Details of the portfolio:  
For each assignment students had to describe, analyze, and reflect. Putting together this portfolio at the end of the school year has its pluses and minuses. It is good for the students to see all of their work. On the other hand, if they reflect on each piece as they are doing it the reflection can cause improvement for the next piece.

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Her description of the assignment was detailed and showed an understanding of the project.

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Her statements about what she learned were validated when she did the second story using a computer tool.

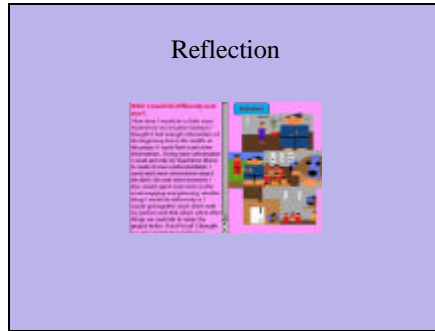
"I learned that in order to understand and do an animation to the best of your ability you need to research many aspects of whatever you are doing: culture, religion, society, daily life, government, etc." She started the second assignment by looking for more information.

"I also learned that I am a very visual and doing learner and what I mean by this is that for me to understand and learn completely I needed to see and do things."

"I also learned many important lessons on working with a partner. Such as if one of you is sick and you have the project in your folder and your partner doesn't it is very hard to get any work done."

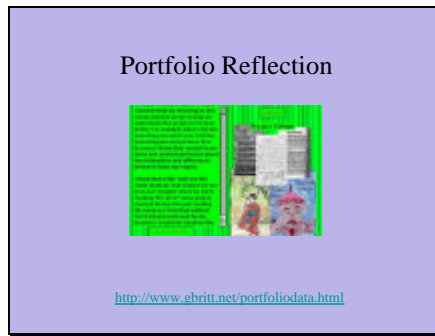
The second time both partners kept a copy of the project in their server accounts.

Slide 25



And for her reflection on what she would do to improve next time she comments that she would do more research, which she did. She also states that she would spend more time on the mind mapping and planning and talk to her partner more.

Slide 26



M's lack of learning was revealed in her answer to what she learned from a comparison between China and Japan assignment:

"I can almost always tell a Japanese person from a Chinese person by their accent, clothes, face, and hair." Certainly by doing the assignment she could not have learned how to tell a Japanese person from a Chinese person by their accent. This would have been a good topic of discussion had I seen this right after we did the unit rather than at the end of the year.

In her final reflection of the eportfolio she said that she learned that she was a visual learner and gave an example of her experience in reading a novel. She said that she did not do so well on a test after merely reading the chapters, so she began to summarize chapters and draw pictures representing each chapter, and did much better on the next test.

As far as the eportfolio goes, she says:

"The electronic portfolio is very useful because it is much easier to press a button and see a paper and responses show up than going

through piles of paper so you can fine one part of a portfolio."  
"Doing all we did in Mrs. Britt's class I learned all about my own learning and how to study the best way-of me."  
<http://www.gbritt.net/portfoliodata.html>

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Finally, students present their portfolios to their parents at open house and the parents write a response.

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In summary, if I want to use technology as a tool to advance student knowledge I must choose a tool that requires students to visualize or simulate their learning, and I must vigorously use ongoing assessment to deepen learning, and finally, require metacognition/reflection for students to further reveal and build upon their learning.