What's the Best Formula for Enhancing Online Inquiry Skills?

$[(PST)^2 + (iC^3)]$

by Michelle Schira Hagerman and Amber White

As reading teachers, we know that summer reading loss explains significant reading and academic achievement gaps among students (e.g., Allington & McGill-Franzen, 2013). Recent research (Kim & Quinn, 2013) has shown that classroom-based summer reading interventions can mitigate these disparities. With this perspective in mind, Ruth Fox Elementary in North Branch, MI, designed activities that maximized digital literacies skills development and minimized summer slide for students.

The Summer Institute

For two weeks, twenty rising sixth-graders participated in an innovative summer institute focused on the theme of fitness. Activities were designed to be varied, authentic, and interdisciplinary. For instance, students ran laps on the school's track every morning and analyzed their distance and speed. They created screencasts with iPads to demonstrate their learning processes in math and literacy. They Skyped with author Ellen Potter after reading her book, *Slob* (2009). The cornerstone of the Institute, however, was a collaborative online student inquiry project inspired by the popular website, www.wonderopolis.org (National Center for Family Literacy, 2013).

Complexities of Inquiry

For this project, students created and published their own digital "Wonder." The connections to curriculum were clear and, on the surface, the plan seemed easy to implement. Through online inquiry (Leu, Kinzer, Coiro & Cammack, 2004), each student would read and curate a range of informational texts using Citelighter (www.citelighter.com). Working with a partner, and using Google Docs as a collaborative writing platform, students would craft an expository piece of writing modeled on this malleable, multimodal genre. To publish on the web, students would use Weebly (www.weebly.com).

At the start of the inquiry project, however, questions emerged. Teachers wondered how to scaffold students through the beautiful messiness of a collaborative inquiry process. They also needed common, kid-friendly language to anchor their classroom conversations. The team struggled with logistics and worried that their emergent online readers would become overwhelmed by the openness of the project. The solution was found in a comprehensive framework of strategies for supporting synthesis of multiple, multimodal texts.

$[(PST)^2 + iC^3]$

Informed by online and offline reading comprehension research (e.g., Coiro & Dobler, 2007; Rouet, 2006), the $[(PST)^2 + iC^3]$ [p-s-t-squared plus i-c cubed] framework bundles ten strategies that, together, may support online synthesis (see Table 1). Evidence from Michelle's research with ninth-graders (2013) suggests that when students are introduced to this framework, receive think-aloud modeling and guided questioning that redirects them to strategy use, their written products include more evidence of synthesis.

This is the approach teachers adopted. They taught students the strategies and modeled a recursive process of knowledge construction from multiple, multimodal Internet texts. Teachers emphasized that capable online researchers and synthesizers know how to flexibly apply these strategies and do not use them in a single, linear, or formulaic way. They also gave plenty of practice time.

Learning Outcomes

Students read deeply to become content experts on their "wonderings." For example, one pair asked, "Should parents monitor their kids' fast food eating?" and published their response at http://boandtyler.weebly.com. Another pair researched, "Should you drink water, Gatorade, or Powerade while playing sports?" [see http://charlisekaeli.weebly.com].

As students worked, teachers noticed that $[(PST)^2 + (iC^3)]$ offered two big pluses. First, it provided the common language they needed. Second, it gave students signposts to follow that both constrained and supported their thinking as they engaged in online inquiry. On the search engine results page, for instance, students began to attend to URL structure (e.g., .org versus .com) and learned to read the snippet text more critically.
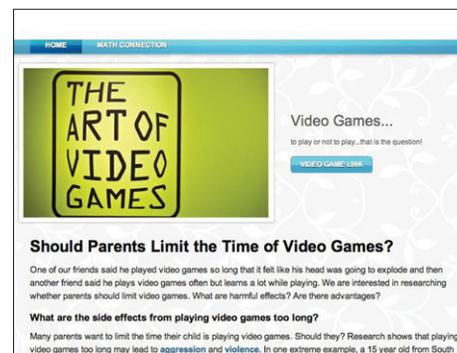
Screenshot of Students' Wonder

Even with guided support, though, students were still inclined to rely on a single source to create their Wonders. Their inexperience with online search seemed to limit both the quality and number of texts they were able to read and synthesize. Teachers needed to remind students to focus on their purpose as a way to identify the most relevant and trustworthy information in the texts they found. These challenges have helped to focus ongoing instruction of inquiry during the school year.

In our experience, the Wonder Project and *[(PST)² +(iC³)]* framework opened a floodgate of meaningful conversations. Based on reading scores and self-report data from the participants, the summer institute seemed to stave off summer slide. Importantly, it boosted students' motivation and beliefs about themselves as capable online researchers.

Table 1. The [(PST)² + (iC³)] Framework

Moment	Strategy	Guiding Questions
Pre-reading	Purpose	What do we have to learn about? What do we have to create with this information?
	Pre-existing Knowledge	What do we already know about this topic?
Locating	Search	What search terms should we use?
	Source Selection	Which of these information sources looks most promising, and why?
	Type	What type of text is this? Does this help us understand more about the information it will provide before we read it closely?
	Trustworthy	Can we trust this information? Why?
Close Reading	Identify Important Information	What information can we use to meet our reading purpose?
	Compare	How does this information compare with what we already know?
	Connect	How does this information connect with information that we have read in other texts?
	Continually Update	What do we know now? What do we still need to understand to achieve our purpose?

References

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WONDERful tips for teaching online inquiry and synthesis with *[(PST)² + (iC³)]*

- Pair students for online reading.

- Plan search terms and questions before touching the keyboard.

- Encourage comparisons between the known and the newly discovered.

- Revisit reading purpose often.

- Think aloud to model critical evaluation of texts and active construction of connections among them.

- Give students time to construct an integrated understanding.

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