FEATURE

Best Practices in Information & Knowledge Building

PERSONALIZING LEARNING

Think Like a Tee

nager!

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Introduction

Several years ago, after distributing a prefab list of questions to teens, I considered how lifeless the students looked as they reviewed their choices for an upcoming project. In place of curiosity and an eagerness to learn, students' faces reflected ennui. This lack of response wasn't what I had imagined when I envisioned teaching research skills.

The creation and identification of high-yield practices for empowering students to think, wonder, and own their learning is a high priority for school librarians who value instructional leadership. Future-ready librarians are working to create flexible learning environments in which their students design solutions, consider possibilities, and share ideas. In these environments, librarians are learning *with* their students, preparing them to *discover* content in inquiry projects and delivering effective information-literacy lessons. The instructional practices described here are designed to create a culture of inquiry that foster a growth mindset and a love of learning for *all* students (Dweck 2007).

Neuroscience, New Pedagogies, and the Teen Brain

"The person doing the work is the one growing the dendrites." Patricia Wolfe (2001, 187)

When student-centered learning experiences are the focus of our instructional practice with adolescents, critical thinking is the defining characteristic of engagement. Student-centered learning experiences are effective because students are provided with opportunities to explore, wonder, make personal connections, and interact with each other before teachers and librarians share what we know. Clearly, the length of time adolescents need to receive direct instruction has changed; teens are still easily rewired for new learning when they are engaged—that is, thinking—not just busy (Sousa 2016). To be a valuable guide on the side, we need to listen to and learn from learners' ideas. In *A Rich Seam*, Michael Fullan and Maria Langworthy described the modern student/instructor partnership:

> The "new pedagogies" can be defined succinctly as a new model of learning partnerships between and among students and teachers, aiming towards deep learning goals and enabled by pervasive digital access. (2014, 2)

New or disruptive pedagogy is, by definition, student-centered. Teachers *guide* by attending to students' ideas. When the work is engaging and teens have opportunities to make their thinking visible, then formative assessments occur throughout the learning process, whether or not technology is used. Educators elevate their craft when they design learning experiences while imagining, "What is this project like for a teenager?" and "Will each teen personally connect with this learning?" Teens need to participate in decisions about their learning while teachers and librarians implement lessons using compelling structures inside of larger, authentic inquiry- and project-based units. This article outlines a few of those structures—small changes can make big differences in student-centered learning.

Seven Students in the Room

Throughout the process of designing and implementing professional development for teachers and school librarians across all content areas, one thing stands out: transitioning from being a sage on the stage to being a guide on the side is best facilitated by creating a crosswalk between content standards and what

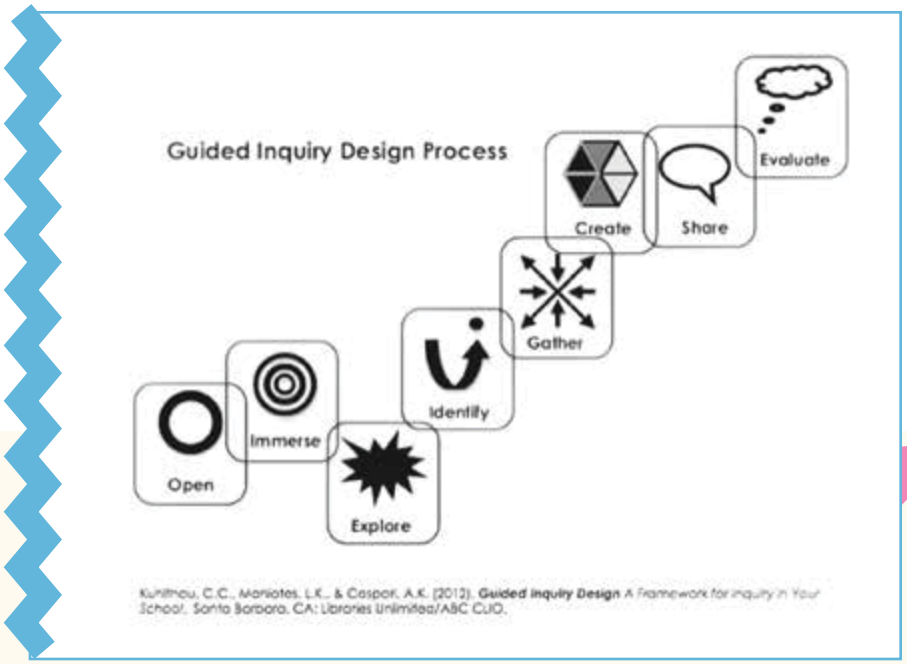

Figure 1. Guided Inquiry Design process (Kulthau, Maniotes, and Caspari 2012).

it *feels* like to be a teenager inside of a classroom in this, the end of the second decade of the twenty-first century—a time when information is ubiquitous and students need high-level problem-solving and collaboration skills to prepare for the future. Most educators today readily understand the opportunities of student-centered learning on an intellectual level. However, until one imagines *being* a teenager and identifies strategies to connect content with teen thinking and experiences, the experiences in library classrooms will continue to look and feel old-school from the perspective of students.

In rolling out professional development to teachers in a large district, the following is an effective metaphor for triggering the imagination of those eager to design effective lessons for teens:

> *Consider: There are always seven students in the room who know what you are about to tell them.*

How might you modify your practice if you reflected on this each time you planned a learning experience for your students? How might you plan differently to capitalize on their *knowing*?

> *Consider, too: There are always a dozen students who have misconceptions about the information you are preparing to share with them.*

Reflecting on these considerations prior to designing a lesson or unit has the potential to transform an instructional paradigm from one of teacher-driven to student-driven learning. Many students have some information—or misconceptions—about most topics when they enter school libraries as teens. Providing them with opportunities to discuss their thinking and share ideas in response to open-ended questions personalizes their learning experience and encourages their collaboration. Consider making the content more personal for them by providing these opportunities at the front end of a lesson *before* sharing any content with them.

In a recent ninth-grade inquiry initiative in our district, students explored global issues presented on the *World's Largest Lesson* <http://worldslargestlesson.globalgoals.org> and were tasked with campaigning to raise awareness about or inventing a solution for one aspect of an issue. They were first prompted to think of opportunities they have to make a difference in their families, their classes, their schools, or their communities. In the Guided Inquiry Design process that was used (see figure 1), this discussion was included in the "Open" stage of their inquiry; it was a personal conversation and connected them to their upcoming learning experiences (Kuhlthau, Maniotes, and Caspari 2012). This conversation also provided opportunities for sharing their thinking on global and community issues.

In the next stage of the project, "Immerse," students looked at and discussed compelling images depicting global issues, and noted their observations by jotting down their comments (see figure 2). In this process, teens engaged in conversation *before* discovering any content. Students were led to the understanding that there are no *right* answers or *bad* questions. It was clear from their observations that many of the students knew about the issues; some had personal experience with a few of them, and all were curious to know more.

In the next stage, "Explore"—still, no lecturing or assigned reading—students were asked to look at resources related to the issues and ask questions as they skimmed pictures and articles, writing down their questions in response to the prompt, "What are you wondering about this issue?"

These three stages, Open, Immerse, and Explore, are thoughtfully designed experiences, crafted to make sure that students engage with the content in personal and meaningful ways. By inviting teens to discuss and make personal connections to the content, the students in the room who already know about the content and those who have misconceptions about the content are provided with opportunities

Figure 2. Students' responses to an image.

to share and grow. Through this process, their ideas are valued as part of the learning rather than as a tagline to the instructional agenda. These student-to-student conversations are formative assessments that will be valuable assets for partnerships between classroom teachers and school librarians. These conversations between students are also the infrastructure for teens to begin creating original ideas and building their resilience for the work ahead.

Creating a Collaborative Learning Environment

Teens need to talk with each other to express their current perceptions and insights. To analyze and grow new ideas, teen learners need to reveal and discuss what is on their minds in a collaborative environment. Most importantly, they need to communicate to transfer their learning into real-world, authentic experiences. A school librarian's invitation for students to create meaning from evidence collected is one of the most important aspects of our work, and it is best accomplished in a collaborative environment. Small group student-to-student conversations, whether online or face-to-face, also afford librarians and teachers with partnership opportunities to grow and learn from their students' perceptions. When we design learning experiences—and throughout the instructional process—it's essential to recognize and appreciate that our students are not blank slates. Effective interactive structures extend beyond "activating background knowledge." Letting teens express opinions, imagine possibilities, and exchange ideas and experiences before educators deliver content yields a classroom of engaged learners and creative thinkers. On the other hand, when students hear information before they engage in responding to a compelling question or before sharing with each other what they already know, their capacity to think critically about the topic and the overall quality of their learning experience is diminished. Learning doesn't occur when students listen. Learning happens when they talk, think, share, and reflect. Let's let them have the floor first!

When starting with a growth mindset, and believing that at least seven students know some of the content, these effective strategies for starting the conversation replace telling students what you want them to know.

Ask students to start the conversation with each other using robust open-ended questions that will help them personally connect with the topic. Instead of, "Who were the significant leaders in the ancient world?" try this: "What makes someone worth remembering?" or "What do you want to be remembered for?" (see table 1).

In a lesson on website evaluation, begin by asking students to discuss with their tablemates the elements they are going to use to determine source reliability for an inquiry project and then share their ideas in small groups. As they share out with the bigger group, type their ideas in a slide for all to see. As an alternative, ask them to find authentic websites related to content-driven topics and then work together to create a rubric that will be used with a class of younger students. Their ideas will be interesting to you, and you will have engaged them in authentic work grounded in discovery and creation.

When presented with information generated solely by a librarian or classroom teacher, teens often respond as though they are checking off teacher requirements instead of engaging in thinking for their own purposes. When they are prompted to discuss, wonder, and think first, they own the work ahead.

Provide Engaging Prompts. Personalize Learning. Think Like a Teenager!

Recent studies on memory demonstrate that when learning experiences begin with activities that enhance students' wondering and stimulate curiosity, memory for the content that follows is vastly improved (Yuhas 2014). Designing experiences in which students' curiosity is ignited sets the stage for them to remember information and, ultimately, engages high levels of thinking, as evidenced in the work on inquiry learning by Carol Kuhlthau and her colleagues (Kuhlthau, Maniotes, and Caspari 2012). Educators' introducing compelling essential questions purposefully designed to help teens personally connect to the content creates a groundswell of interest when facilitating inquiry projects. Table 1 contains examples of engaging open-ended essential questions designed to personalize learning.

Both unmotivated and advanced learners will be compelled to respond to the questions on the right in table 1 because those do not have "correct" answers. The questions on the right will connect with learners' own ideas in response to open-ended questions, and students will be more willing to share their ideas instead of risk being wrong when asked the questions on the left.

Build Personal Learning Experiences

Providing visual prompts to ignite curiosity is powerful for all students, and especially for those who regularly engage in social media or are reluctant readers. Visual stimuli are less threatening than text; when compelling images are used as prompts, teens are more willing to risk making observations and inquiries that align the content with their interests. Open-ended visual

thinking prompts are impactful for igniting interest. First asking, "What do you see?" and then, "What are you wondering?" and last, "Why do you say that?" is a compelling sequence to open an inquiry project (Yenawine 2013).

Asking students to record their questions (see figure 3) is an important element in the process; teens can look back and identify and then reflect on the kinds of questions they asked. If identifying robust research questions from the corpus of their personal questions is challenging, with librarian guidance they might have success using the Question Formulation Technique. This technique is a process through which students are guided to wonder, record their questions, and identify the types of questions they are asking, and then transform informational questions into critical-thinking questions (Rothstein and Santana 2017).

An infinite number of ways can be used to personalize students' learning experiences besides evocative images; a caption, a short article, a video, a blog post, music or book covers, or primary sources all provide students with opportunities to wonder about the content. Each student will be able to contribute and will have a different story or anecdote that defines and expresses his or her perceptions.

Create and Communicate New Ideas

One of the challenges of engaging middle and high school students in research is transitioning them from *gathering evidence* to *creating new ideas*. Beginning an inquiry project with a performance task is a different, yet viable, alternative path to increasing motivation in an authentic context and smoothing the transition. The evidence gathered in their research might support an awareness campaign message or a solution to address a problem. Creating new ideas is the target of a true inquiry project; designing campaigns, inventions, or solutions in lieu of or in addition to a five-paragraph essay adds authenticity to learners' research and fosters resilience, creativity, and the transfer of knowledge to other courses and life experiences.

State competency tests still drive content; however, it is likely that each district's learning goals include, or will soon include, communication skills. Establishing the value of communication and facilitating specific communication skills are essential in preparing students for the jobs they will have when they graduate. For students to be effective collaborators and participants on the world stage in any field, they need to practice communicating. The learning ecosystem in a middle or high school library is a perfect place to foster students' communication skills. It is essential to provide teens with multiple opportunities to think about how to most effectively convey their new ideas and then design, write, create, or perform an impactful communication. Providing students with the opportunity to think about how to best communicate new ideas to specific audiences is an authentic segue to gathering their evidence and designing or creating new ideas.

Recalibrate Interest: Talk to the Text!

Teen readers, whether motivated or unmotivated by text, often have extensive reading assignments. These assignments expose them to essential content and provide important paths for developing sound reasoning and critical-thinking skills. It is understated to say that text is a valuable avenue for them to better understand nuance and the issues in life experiences broader than their own. The most basic avenue to personalizing reading experience is the offering of choice on issues, topics,

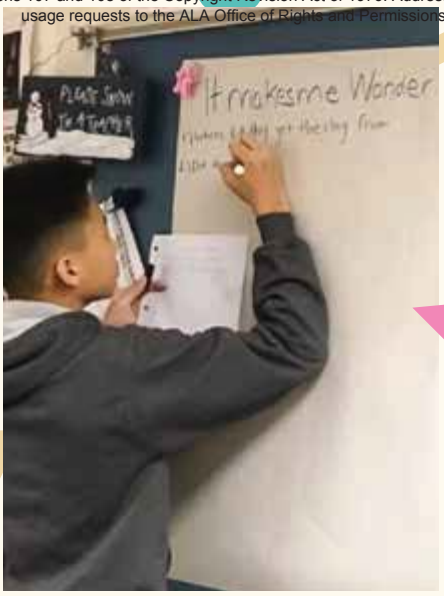

Figure 3. Recording questions in response to visual prompts.

or reading selections. Additionally, while teachers and school librarians may effectively prompt teens with robust questions and "look-fors" as they read assigned articles and books, these prompts may be interpreted by teenagers only as assignments instead of invitations to make personal connections to the work. Returning to fundamental inquiry principles drives a more meaningful reading experience, fosters insight into the text, and forces students to reflect on their own connection to the task. For example, try asking individual students to stop, sit back, and consider what they have just read, and then wonder about what they are learning. Asking "What do you wonder about what you just read? Jot down your questions. Ask questions, talk to the text!" is a powerful tool for re-engaging with reading. Most teens are free-flowing with their wonderings—there is no "right" or "wrong" question. One student may wonder about a word meaning; another may wonder about the causes of poverty when reading an article about water shortages; another may wonder about the general meaning of a sentence. Mary Keeling described the value of this process:

Table 1. Questions designed to personalize learning.

STANDARDS-BASED QUESTIONS	THINK-LIKE-A-TEENAGER ESSENTIAL QUESTIONS
What are the basic tenets of democracy?	Who has authority over me? Who really has any authority?
What are the core values of democracy?	Do the people serve the government or does the government serve the people? In what ways do restrictive laws allow us to have freedom?
What are the causes of the Civil War?	Is anything worth fighting for?
What is microgravity?	Where would you rather live: in a world that is unpredictable or predictable? What would you like about being weightless? What opportunities would it afford? What might be challenging? Is being weightless in space an "altered" state?
What are the factors that influence solubility?	What is the difference between magic or mystery and science?
What is the significance of cell specialization?	When is being different an advantage? What differences that exist between you and your siblings or cousins are significant?
Who are the significant leaders in the ancient world?	What makes someone worth remembering?

> Inquiry…engages students in framing their own questions and provides structures to help them make sense of information, synthesize ideas, and communicate their findings to a real audience. Designing for inquiry requires a shift in practice—hard work that motivates students to dig deeper into the learning experience. (2014, 7)

Student-initiated questions, while apt barometers of teens' comprehension, are so much more. They are roots that deeply connect students to their learning, and should be used to create crosswalks between their experiences and the rest of the world.

Long Projects: Keep the Fires Burning

Several years ago, when I first started thinking about the quality of my students' learning experiences from *their* perspective (instead of exclusively focusing on what I wanted them to know), I implemented my first true student-centered learning experience. My librarian partner Lisa Gunther and I put an array of books on each table in the library to kick off an inquiry project related to ancient civilizations. Students were required to stop at four out of the seven tables where print and digital resources were sorted by civilization and respond to the book covers, pictures, captions, and text by asking questions in response to the prompt "What are you wondering as you peruse each resource/topic?" The technique was a success. Stopping by to visit us in the library, a biology teacher asked about the chaos, "Why are all of the books and signs on the tables?" We described the activity to her. She embraced it and then created an impactful activity for the following fall. She proposed doing a similar activity, filling the library tables with resources aligned with the nine science units she would be covering during the school year. Students, upon entering the library, would be asked to peruse the resources and "wonder" about every topic. Each question or "wondering" would be entered on a sticky note, collected, and hung around the perimeter of her classroom. At the beginning of each unit, her plan was to remove the relevant questions and stick them on the whiteboard or into a Google doc and let the students know that they were going to be answering their own questions over the next six weeks. Brilliant!

Invigorating the Research Process

Effective inquiry, regardless of how high the engagement and personalization factors are on the front end, has moments when students lose interest as they work through the inquiry process. These can be the moments when students go on to develop grit and resilience. Providing them with a strategy to manipulate these lackluster moments by asking them to wonder about their work again and again scaffolds their lifelong learning skills. Ask them

to "step back and wonder" about what they've just read, about the problem they are trying to solve, about the issue or topic. Step back and wonder. In this moment, you connect them not to your work, but to theirs.

Prompt for Success

We are accustomed to asking students, "Do you have any questions?" That prompt does not achieve the same end goal as asking teens, "What do you wonder?" or "What are you curious about as you look at these pictures/this text?" For many teens, "What questions do you have?" is a prompt that is loaded with social constraints and challenges. Hearing this prompt, their inner narrative defaults to, "I should know this. What will others think when I ask a question? Maybe I should have heard or read this already." The list of their inhibiting concerns goes on. Prompting with, "What do you wonder?" and then listening to or reading their questions is a strategy that gives credence to teens' thinking. Wondering is, in fact, a critical-thinking skill that opens their minds to new learning.

Conclusion

It's important for teens to share what they intuit, how they feel, and what they know about issues and topics before engaging with specific content. It is critical for them to have opportunities to share responses to open-ended, compelling prompts. Even more important, every teen needs a voice. Prompting students to wonder and providing open-ended questions are great equalizers. When these protocols become routine in your library, students will *expect* to have a voice. You will be nurturing future citizens with a love of learning. These are young adults whom you are preparing to make a difference in the world. Let them speak!

Ellen McNair *is an education specialist, secondary library program, at Fairfax County Public Schools in Falls Church, Virginia. She is a member of AASL and is a member of the AASL Standards and Guidelines Implementation Task Force. This is the third year she has served as co-leader for a disruptive pedagogy cohort that includes teachers and librarians in her district. Focusing on inquiry in a blended learning environment, the cohort, founded by Michael Cieslak, another education specialist in the district, develops blended learning units using Guided Inquiry Design. These units are intended to disrupt "sage on the stage" pedagogy. Additionally, she coordinated the district-wide Global Issues Inquiry project for all ninth- and tenth-grade English as a Second Language Learners in her district. Ellen presented at the 2017 ALA Annual Conference on inquiry-rich learning experiences in a blended learning environment. She is active on Twitter and hopes to see you there.*

Recommended Reading about Personalized and Student-Centered Learning:

Blended Learning in Grades 4–12: Leveraging the Power of Technology to Create Student-Centered Classrooms by Catlin R. Tucker (Corwin 2012)

Engaging the Rewired Brain by David A. Sousa (Learning Sciences International 2016)

How to Personalize Learning: A Practical Guide for Getting Started and Going Deeper by Barbara Bray and Kathleen McClaskey (Corwin 2017)

Knowledge Quest Issue: Power to the Pupil: Student Agency in the School Library 45 (4): March/April 2017. Available to AASL members at <www.ala.org/aasl/pubs/kq/v45no4>.

Make Just One Change by Dan Rothstein and Luz Santana (Harvard Education Press 2011)

Students at the Center: Personalized Learning with Habits of Mind by Bena Kallick and Allison Zmuda (ASCD 2017)

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Yenawine, Philip. 2013. *Visual Thinking Strategies: Using Art to Deepen Leaving across School Disciplines*. Cambridge, MA: Harvard Education Press.

Yuhas, Daisy. 2014. "Curiosity Prepares the Brain for Better Learning: Neuroimaging Reveals How the Brain's Reward and Memory Pathways Prime Inquiring Minds for Knowledge." *Scientific American* (October 2). <www.scientificamerican.com/article/curiosity-prepares-the-brain-for-better-learning> (accessed August 11, 2017).