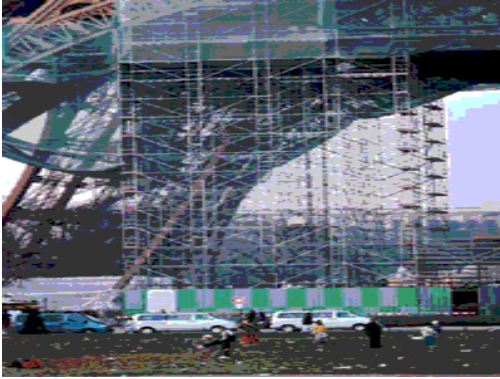


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## *Scaffolding for Success*

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This article is an excerpt from Jamie McKenzie's new book,  
Beyond Technology:  
Questioning, Research  
and the Information Literate School Community  
due in January. ([click to learn more](#))

### ***Chapter 19 - Scaffolding for Success***

Some (but not all) schools and teachers have been trying for decades to engage students in challenging research projects. The history of such efforts extends back prior to the efforts of John Dewey and more recent leaders such as Hilda Taba and John Fenton.

The best of all of these efforts always made significant use of **scaffolding** to organize and support the student investigation or inquiry, to keep students from straying too far off the path while seeking "the truth" about whatever issue, problem or question was driving the project.

The least successful efforts assumed too much about student skills, organizational abilities and commitment. Young ones were sent off on expeditions with little in the way of structure or guidance.

We should have learned by now that exploration by students progresses most effectively when those students have been well equipped, well prepared and well guided along the path. In this chapter, the focus is upon the scaffolding techniques that have proven especially worthwhile in an electronic context.

## ***Matters of Definition***

What do we mean by **scaffolding** in the context of student research in school?

There is no appropriate (educational) definition in a dictionary. The term is relatively new for educators, even though the concept has been around for a long time under other names.

We tend to think of structures thrown up alongside of buildings to support workers in their skyward efforts.

"Structure" is the key word. Without clear structure and precisely stated expectations, many students are vulnerable to a kind of educational "wanderlust" that pulls them far afield.

The dilemma? How do we provide sufficient structure to keep students productive without confining them to straight jackets that destroy initiative, motivation and resourcefulness?

It is, ultimately, a balancing act. The workers cleaning the face of the Washington Monument do not confuse the scaffolding with the monument itself. The scaffolding is secondary. The building is primary.

The same is true with student research. Even though we may offer clarity and structure, the students must still conduct the research and fashion new insights. The most important work is done by the student. We simply provide the outer structure.

## ***Characteristics of Educational Scaffolding***

There are at least eight characteristics of scaffolding:

### ***1) Scaffolding provides clear directions***

Web based research units offer step-by-step directions to explain just what students must do in order to meet the expectations for the learning activity. Instructional designers try to anticipate any problems or uncertainties, writing user-friendly directions in ways that minimize confusion, place a premium on clarity and speed students toward productive learning.

The operating concept here is the "teflon lesson," a learning experience that has been well tested in advance so that anything that might go wrong is considered in advance and eliminated if possible.

We don't want our students wandering about like prospectors on the desert.

### ***2) Scaffolding clarifies purpose***

"Why are we doing this?"

Scaffolding keeps purpose and motivation in the forefront. Rather than offering up one more empty school ritual like the state report, the scaffolded lesson aspires to meaning and worth. Built around essential questions, the scaffolding helps to keep the "big picture" central and in focus.

"We are looking at this question because it is central to being human."

No "trivial pursuit" here.

Students are let in on the secret early. They are told why the problem, issue or decision is important and they are urged to care about it. They do not lapse into simple collecting or gathering. They are not caught up in mindless activity traps. Their work remains purposeful and planful. Each time they act, it is in service to the thought process, the discovery of meaning and the development of insight.

Traditional school research placed too much emphasis upon collection, while scaffolding requires continuous sorting and sifting as part of a "puzzling" process - the combining of new information with previous understandings to construct new ones. Students are adding on, extending, refining and elaborating. It is almost as if they are building a bridge from their preconceptions to a deeper, wiser, more astute view of whatever truth matters for the question or issue at hand.

### ***3) Scaffolding keeps students on task***

By providing a pathway or route for the learner, the scaffolded lesson is somewhat like the guard rail of a mountain highway. The learner can exercise great personal discretion within parameters but is not in danger of "off road" stranding. Each time a student or team of students is asked to move along a path, the steps are outlined extensively. No need to wander, stray or stumble. Students may "take the curves" without fear of going over the edge.

This is more than a matter of clear directions that could just as easily be printed out on paper. The Web based lesson provides structure and guidance coincident with each step of the journey. The progression of activities is liberating yet controlling at the same time. The student moves through something like a garden, taking each Web page like flag stones. There may be more than one path wandering through the garden, but none of them leads into the jungle or a swamp or a tiger pit.

### ***4) Scaffolding offers assessment to clarify expectations***

From the very start, scaffolded lessons provide examples of quality work done by others. Right from the beginning, students are shown rubrics and standards that define excellence. In traditional school research, students were often kept in the dark until the product was completed. Without clearly stated criteria, it was difficult to know what constituted quality work.

Is it a matter of length? the number of sources cited?

Does originality count?

Does the logic and coherence of my argument matter?

What constitutes adequate evidence?

There are a dozen issues, all of which deserve attention and elaboration. As an example, consider the online rubrics for successful multimedia reports available at <http://www2.ncsu.edu/ncsu/cep/midlink/rub.multi.htm>

## **5) Scaffolding points students to worthy sources**

Most educators complain that the Internet suffers from a low "signal to noise ratio" - the confusing, weak and unreliable information (noise) outweighs and threatens to drown out the information most worthy of consideration. Wary of wasting time, teachers have little tolerance for "data smog" and "Infoglut." They want to see students putting their energy into interpretation rather than wandering.

Scaffolding identifies the best sources so that students speed to signal rather than noise. Looking for the best Web sites on Columbus, Drake or Magellan to decide which would have been a better leader, the scaffolded lesson created by fifth grade teacher, Gretchen Offutt, identified 4-5 sites for each captain.

### **[Explorer Homeport](http://wwwsil.bham.wednet.edu/Curriculum/Explorers_Time_Machine/homeport.htm)**

[http://wwwsil.bham.wednet.edu/Curriculum/Explorers\\_Time\\_Machine/homeport.htm](http://wwwsil.bham.wednet.edu/Curriculum/Explorers_Time_Machine/homeport.htm)

Knowing that the Web is filled with sites not worth visiting because of quality, bias or reading level concerns, the teacher visits 100+ sites per captain before winnowing the list down to 4 or 5 per captain.

Does this mean the student has no options? It depends upon the teacher. And it depends upon the school. In some cases, students must stick to the sources pre-selected by the teacher. In other cases, the student may use these sites as a starting point, extending further out into Cyberspace in search of something unusual. The scaffolding serves as an introduction, not as a corral.

## **6) Scaffolding reduces uncertainty, surprise and disappointment**

The operating design concept for scaffolded lessons is the "teflon lesson" - no stick, no burn and no trouble. Lesson designers are expected to test each and every step in the lesson to see what might possibly go wrong. The idea is to eliminate distracting frustrations to the extent this is possible. The goal is to maximize learning and efficiency. Once the lesson is ready for trial with students, the lesson is refined at least one more time based on the new insights gained by watching students actually try the activities.

## **7) Scaffolding delivers efficiency**

If done well, a scaffolded lesson should nearly scream with efficiency. Teachers and students should shake their heads in disbelief.

"It felt like we completed ten hours of work in just two!"

"How did we get so much done?"

This perception is achieved, in part, by virtue of comparison with the old kind of school research that was mostly about wandering and scooping. Boredom fed by irrelevance slowed the passage of time. It took forever to get the job done.

Scaffolded lessons still require hard work, but the work is so well centered on the inquiry that it seems like a potter and wheel. Little waste or wobbling. Scaffolding "distills" the work effort.

Focus. Clarity. Time on task. The student is channelled. No mud flats, shoals or other navigational hazards.

## **8) Scaffolding creates momentum**

In contrast to traditional research experiences, throughout which much of the energy was dispersed and dissipated during the wandering phases, the channelling achieved through scaffolding concentrates and directs energy in ways that actually build into momentum. It is almost like an avalanche of thoughts, accumulating insight and understanding.

In resolving the dissonance described in Chapter 4, "Students in Resonance," the work gathers speed. The drive toward meaning is accelerated. The essential question and its subsidiary questions create suction, drive, urgency and motivation. The search for understanding inspires and provokes. One loses sleep. One awakens in the middle of the night, wondering, pondering, considering.

### **Examples of Scaffolding**

#### **[Explorers' Homeport \(5th grade\)](http://wwwsil.bham.wednet.edu/Curriculum/Explorers_Time_Machine/homeport.htm)**

[http://wwwsil.bham.wednet.edu/Curriculum/Explorers\\_Time\\_Machine/homeport.htm](http://wwwsil.bham.wednet.edu/Curriculum/Explorers_Time_Machine/homeport.htm)

#### **[Fifth grade science \(Planets\)](http://wwwsil.bham.wednet.edu/Curriculum/Planetary_Adventure/scenario.htm)**

[http://wwwsil.bham.wednet.edu/Curriculum/Planetary\\_Adventure/scenario.htm](http://wwwsil.bham.wednet.edu/Curriculum/Planetary_Adventure/scenario.htm)

#### **[Grand Prairie, Texas, Research modules](http://www.gpisd.org/gpisd/modules/modulepage.html)**

<http://www.gpisd.org/gpisd/modules/modulepage.html>

#### **[Baltimore County Research modules](http://www.bcps.org/offices/lis/models/index.html)**

<http://www.bcps.org/offices/lis/models/index.html>

#### **[New South Wales Research modules](http://www.cap.nsw.edu.au/bb_site_intro/bbcap_intro.html)**

[http://www.cap.nsw.edu.au/bb\\_site\\_intro/bbcap\\_intro.html](http://www.cap.nsw.edu.au/bb_site_intro/bbcap_intro.html)

**[Module Maker](http://questioning.org/module/module.html)** - Offers a step-by-step method for the construction of online research modules with an emphasis upon scaffolding.

<http://questioning.org/module/module.html>

**[WebQuest](http://webquest.sdsu.edu)** - Offers pages describing a step-by-step method for the creation of WebQuests with an emphasis upon scaffolding.

<http://webquest.sdsu.edu> and **[WebQuests and PBLs](#)**

#### **[Blue Web'n](http://www.kn.pacbell.com/wired/bluewebn)**

<http://www.kn.pacbell.com/wired/bluewebn>

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