



EDGE

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Contact Us

VSTE World Headquarters:
vste@vste.org

VSTE Edge Editor:
edge@vste.org

VSTE Edge Submissions:
edge_submissions@vste.org

Desperately Seeking Scaffolds

Greg Sherman, Ph.D.
VSTE Edge Managing Editor



When was the last time you wanted (or needed) to learn something important but were not given enough support to succeed in the learning environment? Perhaps it was an abstract math concept buried within an abstract chapter of an abstract math book. Or maybe you were trying to follow a recipe, and certain steps were missing or not illustrated clearly. Likewise, perhaps you were following the directions to learn a new game, but some of the rules were unclear. And speaking of games, consider something a little more serious. Learning how to cultivate healthy and happy interpersonal relationships represents a rather daunting instructional goal that most people must accomplish in order to be happy and successful. How complete was your *handbook* the last time you entered into a serious relationship?

Most people need some measure of help acquiring new skills, knowledge, or attitudes, especially when the learning environment is defined by information and experiences that are relatively new and/or unknown. Tutoring, mentoring, and apprenticeships represent some of the more common ways in which individualized help is provided to learners. Indeed, the amount and type of support offered within a learning environment probably constitutes the biggest indicator of potential learner success. Excellent teachers provide many different types and amount of support (or "scaffolds") for individual learners who are immersed in instructional tasks that require a certain degree of individualized guidance.

But providing support for individual learners as they negotiate complex learning environments is not always easy for teachers. With limited resources and large class sizes, teachers must often rely on existing support structures to help learners succeed in the classroom. These resources might include tutors (classroom aids, parents, or advanced students who already possess the skills to be learned), book resources (if they are well designed), and the clear presentation of examples, nonexamples, and other lecture-type information designed to facilitate the learning of specific skills. Today, teachers might also use available technology such as networked computers to help provide support for individual learners. But teachers

may under-utilize technology as an instructional support mechanism if it represents something that learners must also be supported in using! However, by closely examining a variety ways in which technology can help support learners, professional educators might be encouraged to learn more about the different ways they can improve the effectiveness of their instruction. The chart below presents some specific ways in which technology (specifically, computer-based and video resources) can be used to scaffold students throughout a learning experience. These support mechanisms are categorized by type of scaffold. Links to articles that elaborate on the different types of scaffolds are included beneath the chart.

Scaffold Type*	Description	Technology-Supported Examples
Procedural	Procedural scaffolds provide guidance on how to utilize instructional resources and tools.	<p>"How-To" sheets created with a word processing program</p> <p>Computer-based tutorials, video-delivered directions</p> <p>Maps, overviews and diagrams obtained from the Internet</p>
Process	Process scaffolds help learners figure out where they are within an instructional experience. They also help learners figure out what they need to do to get where they want to go within an instructional experience.	<p>"Big Picture" developed using concept-mapping software</p> <p>History of user path throughout program or website</p> <p>Clear menu structures and site maps help learners organize web-based information</p>
Conceptual	Conceptual scaffolds provide guidance over what the learners should consider or reflect upon throughout the learning experience.	<p>Visual advance organizers presented using PowerPoint</p> <p>Course concept maps and "Big Pictures" created using concept mapping software [i.e. Inspiration]</p> <p>Moderated chat and bulletin board discussions about specific topics</p>
Metacognitive: Planning	Metacognitive scaffolds represent mechanisms for learners to receive guidance on how to best think about problem(s) under study. Planning scaffolds allow students to set goals and objectives, chart benchmarks and deadlines for projects, create concept maps, etc.	<p>Concept maps</p> <p>Organizational schemes supported with computer-based file management [i.e. "Activities & Materials" folder: "In-Progress" folder and "Completed" folder]</p>

Metacognitive: Regulating	Regulating scaffolds help students monitor their progress and receive feedback on their performance	Peer feedback via web-based discussion groups Video-delivered modeling for comparisons Computer-based quizzes Interactive practice exercises
Metacognitive: Evaluating	Evaluating scaffolds allow students to critique one another's work, exchange documents to-from the instructor for revising, etc.	Rubrics and checklists created using word-processing software E-mail with attached documents
Strategic	Strategic scaffolds help learners figure out various approaches to solving problems.	Moderated chat and bulletin board discussions about specific topics
Interpersonal	Interpersonal scaffolds provide guidance for facilitating constructive collaboration and interpersonal interactions.	Modeling/examples provided via video examples Interaction checklists developed for debriefing interpersonal interactions following group activities Charts displaying specific role assignments Mediated discussion and chat environments in which roles are assigned to members of online groups

*The following links present web pages with excellent information about different types of scaffolds:

<http://www.edtech.vt.edu/edtech/id/interface/help.html>

<http://edweb.sdsu.edu/people/bdodge/scaffolding.html>

http://www.indiana.edu/~idtheory/chapter_6_summary.html

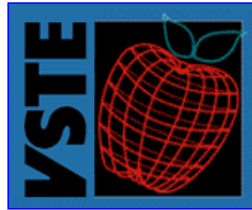
<http://curry.edschool.virginia.edu/go/edis771/webquest2000/student/ssusandigiac/scaffold.htm>

http://www.kie.berkeley.edu/transitions/scaffold_principles.html

Including adequate support mechanisms within any given learning experience is essential for those teachers designing instruction that addressed individual learner needs. Taking advantage of available technology resources in the design and implementation of learner support mechanisms is one way teachers can continually improve their effectiveness. Additionally, teachers examining existing lesson ideas presented in textbooks or lesson archives should carefully consider what types of scaffolds will need to be available to individual learners in order for them to

successfully negotiate the entire learning experience. Hopefully, the information presented in the chart above as well as the linked articles can be useful tools in this effort.

If you are interested in learning more about instructional scaffolds as well as other strategies and resources connected with the use of technology in the classroom, consider attending *VSTE's 2005 Annual State Technology Conference!* This year's conference will be held in Norfolk at the Waterside Marriott from March 13-15, 2005. This conference represents an excellent professional development experience for Virginia teachers. For more information, visit the conference website:



<http://www.vste.org/conference/2005>

And for those of you planning even further ahead, this year's *National Educational Computing Conference* will be held June 27-30 in Philadelphia. For more information about this professional development experience, click on the link below.



<http://www.iste.org/necc>

Next Month...

One of the scaffold types indicated in the chart above represents support for groups of students (interpersonal scaffolds). January's issue of the VSTE Edge will focus on the different role computer-based technologies can play within cooperative learning environments. If you have successfully used computers to facilitate group learning activities, why not share your stories with our readers! E-mail your stories and strategies to edge@vste.org by January 1, 2005.

