

# Paper to Light

Alan C. November [alan@anovember.com](mailto:alan@anovember.com)

---

## Preparing Students for the Digital Economy

*“Children have the chance to reinvent communications, culture, and community. To address the problems of the new world in new ways. To do better than we did. Instead of holding them back, we should be pushing them forward. Instead of shielding them, we should be taking them by the hands, guiding them to the gates and cheering them on.”* — John Katz Contributing Editor *Hot Wired* magazine.



# Planning for Freedom

Imagine a student writing as high as he can on the blackboard. In order to extend his reach, he is standing on top of a PC. The Wall Street Journal provides this graphic on the cover of a special insert on the impact of technology on American education. The Journal is poking fun of how education has planned for and implemented technology. It is not a pretty picture.

If there is truth in this graphic, (I believe it is more true than false) then what has gone wrong? Is the technology too difficult to use? Is staff development missing? Is education boxed in by state regulations which limit the creative use of powerful machines? Is the structure of schools, prescribed by the industrial age, too rigid, too hierarchical? Or does it just take a long time to ramp things up?

While all of these issues probably contribute to the relative minor impact technology has had on improving learning, it is possible that we have been asking the wrong questions. Rather than planning for technology, perhaps we should be planning for what flows through the technology, information and communication.

In order for educators to free ourselves from a technocentric mindset, we will need to realign our goals and objectives:

- replace computer literacy with information and communications literacy
- prepare for a shift of control of information to students and families
- imagine everyone is connected to everyone – sharing knowledge and wisdom
- focus on teaching students how to manage the freedom that access to information and communication enables

People naturally desire more access and control over their own lives once the process of easily accessing information and communications begins. You need only to look at the rapid expansion of Internet usage for examples of this explosion in connectivity. Our students and teachers and families now have access to music, museums, novels, art, ancient scrolls, listserves of Holocaust survivors, graphics of WW II posters, and even climate indicators from Mars and a lot more to come. While there are fantastic learning resources, the Internet is also a place where you can find “proof” of any version of any truth. Children naturally crave connections. They love to explore everything from the Beanie Baby Website to meeting people in chatrooms. Every industry and every age group of America is feeling the impact of the Internet. These new relationships will inevitably lead to a shift of control.

The major issue for schools is to directly face this shift of control and create a new culture of learning that prepares students to be successful in an economy that demands access to information and the skills of creating knowledge products. What may at first appear to be threatening, for example online courses, can become new opportunities for schools to expand their services. We need to move beyond the relatively low-level concept of planning for technology to one that is much more complex: planning for freedom.

This handout is organized into three sections:

Section I -----	The Big Picture -----	pp 1-5
Section II -----	Framework for Planning -----	pp 6-12
Section III -----	Next Steps -----	pp 13-16

# The Big Picture

- I. Defining the Problem:** Clearly defining the role of technology in support of learning is the challenge. While we have labeled “the problem” technology, (it looks like technology and feels like technology and costs a lot of money) the real problem schools face is to prepare students to be successful in an emerging economy. In many applications, technology is a distraction from the real work of preparing our children.
- II. The New Economy:** The rules of the digital economy are very different than the rules of the industrial. An industrial worker applies for a job and the work is highly structured and managed by the organization. In the Digital Economy the worker is directly responsible for managing the flow of problem solving and in many cases he or she also defines the problems to be solved. Industrial machine driven technologies such as the tractor enabled/forced millions of people to migrate off the land and get a job. The digitally driven technology of the Internet will enable/force millions of people to work outside of the structure of an organization such as an office, factory or university and create their own work.
- III. The Culture of Learning:** The current model of schooling was designed to prepare our children to be successful in the industrial economy. Unfortunately, bolting technology on top of the industrial age schoolhouse will not completely prepare all children for work, citizenship, and success. Being self-directed, self-motivated and interdependent are the new basic skills required by the digital economy. Access to information and communication technologies creates new levels of freedom if you know how to access information and to work with people from all over the world.
- IV. Planning:** While every school needs to install the internet connections, the essential work of schools is to examine the culture of learning. At the core of this work is a shift of control—from dependent relationships between teachers and students to interdependent relationships between educators, children, and the community. The most difficult part of the work before us will be to “unlearn” or let go of some of our basic beliefs about the design of learning. The opportunity technology enables is to plan for information literacy and communications literacy.
- V. Change in the Role of Children:** The role of children changes from isolated knowledge consumers to connected knowledge producers. Ultimately, children learn that they can add value to the world as an individual and as a member of a community.

We can no longer simply ask children to “trust us” about the relevancy of what they are learning. Now that we can connect our students to real problems with real people, they can directly experience the importance of their work. We will have more opportunity to celebrate and value our students contributions. This transformation of the role of children suggests that basic skills remain important and are expanding.

## Action Item:

If you have a technology planning committee, thank them for their contributions to date. Re-engineer the process to plan for information and communications instead of technology. Let go of the technocentric focus.

## **VI. Transformation of School Culture: Every cultural aspect of education may encounter change as a result of digital technologies.**

- a) **Architecture** becomes more flexible and adaptable and designed for the whole community. There are more intimate spaces for small group work. In a sense, we are “going back to the future” to the one room school house.
- b) **Relationships** become more varied and global. Students increasingly take responsibility for managing their own learning and teachers may have more opportunities to collaborate with one another, the community and families.
- c) **Curriculum** is aligned to standards and supported by real problems.
- d) **Testing and Assessments** become more diagnostic, more authentic and more applied. In addition, more people know how to access the data, they know what the data means, and they know how to apply it. Students take on more responsibility for being self diagnostic and creating authentic opportunities for testing their knowledge.
- e) **School Schedule and Calendar** — The internet makes it possible to access learning 7 days a week 24 hours a day. Consequently, students have access to information and relationships as needed.
- f) **Equity** — As we do with paper we will do with digital. Every student will be guaranteed digital access in their home.
- g) **Teacher Evaluation** shifts from the teacher’s ability to directly manage learning to creating capacity within students to co-direct their own learning.
- h) **Leadership** shifts from maintaining order and boundaries, to managing change and enabling access to information and knowledge. More people are given the opportunity to exercise leadership and for enhancing teamwork and community.

## **VII. Ultimately The Challenge involves A SHIFT OF CONTROL:**

- ❖ Information
- ❖ Communications
- ❖ Access/Equity
- ❖ Managing learning

# CHANGING ASSUMPTIONS

<b>INDUSTRIAL</b>	<b>DIGITAL</b>
<p><b>Work or learn:</b> at this time, in this place, in this way, with these people . . . . your work evaluated by others</p>	<p><b>Work or learn:</b> at anytime, anyplace, anybody, anywhere . . . . your work evaluated by yourself and an authentic audience</p>
Classrooms as closed information communications boxes	Classrooms as information communications hub
Hierarchical and departmentalized organizations, controls are centralized	Flat organizations, controls are distributed
Boundaries are impermeable	Boundaries are permeable or missing
Central control of information and communications	Distributed control of information and communications, increasingly smaller and less expensive technology
Education is decontextualized	Education has many contexts
Students add value to the world after graduation	Students add value to the world now

## WHAT IS OUT ? >>> WHAT IS IN ?

### OUT

### IN

Wires	➤	Wireless
“Sage on Stage”	➤	Networks of teachers and learners
Technology Committees	➤	Information Communications Committees
Everyone working for the district	➤	Collaboration and outsourcing
Families as invited guests to schools	➤	Daily family access to schools
Students as passive learners	➤	Students as self-directed learners
Computer labs	➤	Ubiquitous technology
Textbooks as dominant media	➤	Internet as dominant media
Desktop PC's	➤	Laptops and Palmtops

## QUESTIONS

1. Do you agree with this list? If not please make changes.
2. Which transformation do you think will have the biggest impact on learning?
3. Which transformation has the potential to be the most challenging to manage?

## ALAN'S HISTORY OF EDUCATIONAL TECHNOLOGY

<b>Time</b>	<b>Technology</b>	<b>Configuration</b>	<b>Impact</b>
<b>1960 – 1980s</b>	COBAL Basic Pascal	Math departments own all the machines	Technology skills are temporary
<b>1970 – 1980s</b>	Logo	Elementary schools get computers	Little relevance to everyday life
<b>Mid 80s – present</b>	Visicalc AppleWorks Multiplan	Computer literacy, computer labs	Technology Ghetto
<b>Late 80s – present</b>	Integrated technology across curriculum	Many labs, class- room machines, mini lab stations, many departments	Too much automating — “make the horse run faster” — The Pony Express
<b>Mid 90s – present</b>	Online Learning	Anywhere, Anytime, Anybody . . .	This is transformational “We’re predicting one more time.”

❖ **Lesson Learned:**

*Do not get excited about the stage you are in — learn to let go of technology.*

## Automate/Informate Narrative Explanation

Have you ever wondered if all of the money we are spending on technology really makes a difference? Years ago, Shoshana Zuboff, a professor at the Harvard Business School, asked this same question and she discovered that results are more elusive than commonly understood. In fact you can spend a great deal of money, train everyone, correctly install the network, and actually **lower** the quality of organizational operations and outputs. She noticed two very different approaches to the use of technology, automating and informing. One led to incremental improvements; the other led to transformational improvements.

Automating, the more common approach and the easier of the two to manage, means “bolting” technology on top of current processes and procedures. Largely, the work remains the same, the locus of control remains the same, the time and place remain the same, and the relationships remain unchanged. The result of automating leads to incremental improvement, but, in some cases, the quality of work actually declines.

In schools we have automated the report card, the card catalogue, the pencil, various science lab instruments, and many other traditional assignments. We now use computers to print report cards faster, to look up library books faster, to edit the “Five Paragraph Essay” faster, and to collect data faster.

However, as Zuboff discovered time and again, faster does not necessarily mean better. For example, a high school librarian once asked me to review term papers students had written before and after the card catalogue was automated. She was concerned that the new and expensive automated system was lowering the rigor of student work.

As I scanned student papers, I could not tell the difference, but she could. She pointed out a pattern in the books referenced in each bibliography. Students who used the automated catalogue had primarily selected books appearing in the top half of the alphabet. Students who had used the traditional card catalogue had chosen books that spanned the entire alphabet. It is not uncommon for the ease of use of the technology to lower the quality of work.

Zuboff observed a more powerful way of thinking about technology than improving current processes. This is called informing. While informing can lead to a much more powerful and successful application of technology, it can be very difficult to do. It is not that the technology is more difficult to learn. In fact, very often, an “informatted” application uses the same technology.

What makes informing difficult is that the organization must fundamentally change the flow and control of information. Informing begins by giving more people timely access to information. For example, parents and students now have access to report card data every day instead of once a quarter. This means responsibility can be given to the student for monitoring his/her progress. Also, more timely access to student information can lead to more parent involvement.

Eventually, traditional boundaries of time and space become obsolete. New relationships emerge. There is increasingly more team responsibility as more people gain access to information and are empowered to make decisions. Ultimately, roles change when informing takes place, but do not change when automating.

## **QUESTIONS**

**How much of your investment in technology is for automating, and how much is for informing?**

**Can you describe examples of informing both in management and curriculum?**

**Are there more opportunities to informate?**

# AUTOMATE/INFORMATE

<b>Automate</b>	<b>Informat</b>
Technology is bolted on top	Technology is integrated
Efficiency	Re-engineering
Same information	New information, more information, more accessible
Same culture Behavior changes	Cultural shifts Value changes
Same organizations	Learning organizations
Same schedule	Schedule changes-real time Any time, 5x8 to 7x24
Same relationships	New and more relationships
Same control/policy	Boundaries permeable, flexible and adaptable policy

## BIG IDEAS

## WEB ADDRESSES

## ACTIVITIES

### 1) Online learning explodes

[www.caso.com](http://www.caso.com)  
[www.Unext.com](http://www.Unext.com)  
<http://vhs.concord.org>

Explore the Internet and the learning sites available to all age learners. Create an "Online Course Club." Invite 12 members of your school community, teachers, students, parents, administrators to sign up for an online course of their choice. In weekly meetings ask participants to evaluate various aspects of their courses.

### 2) All teachers have web sites

[www.blackboard.com](http://www.blackboard.com)  
[www.educationplanet.com](http://www.educationplanet.com)  
[www.thinkquest.com](http://www.thinkquest.com)  
[www.funbrain.com](http://www.funbrain.com)  
[www.4teachers.com](http://www.4teachers.com)

Encourage teachers to set up a web page either through a commercial web site or through the school district's web site.

### 3) All families are connected

<http://www.pta.org/index.stm>  
<http://www.cyberangels.org/>  
<http://www.funbrain.com/parents/index.html>

Set up a web cam so that you may share student work with mentors, parents, and community. Explore the use of video tape as an easy, cheap, and powerful medium for sharing student work with parents. Replace quarterly report card schedules with daily access to student work..

### 4) The web is a very dangerous place

[www.schoolsucks.com](http://www.schoolsucks.com)  
[www.schoolbytes.com](http://www.schoolbytes.com)  
[www.hatewatch.org](http://www.hatewatch.org)

Read "Teaching Zack to Think" ([www.anovember.com](http://www.anovember.com)). Explore the links from Aurthur Butz's web site

### 5) Students add value to the world.

[www.energynet.net](http://www.energynet.net)  
[www.freethechildren.org](http://www.freethechildren.org)

Visit the suggested sites and see what ideas they generate for your students. Are any of the projects replicable in your school?

Generate a list of ways your students can add value to your school, an area business, other schools in the district, a community project, or a statewide initiative. Stay away from ideas like being quiet in the school's library or picking up trash in the hallways, while these are ways our students must contribute they are not big enough. Aim for overwhelming your students with big ideas, hopes, dreams!

### 6) New basic skills

[www.bestpraceduc.org/Technology/index.htm](http://www.bestpraceduc.org/Technology/index.htm) <http://www.ala.org>

All teachers can hold all students accountable for becoming information and communications literate.

# Elements of a Teacher's Web Site

**Links:** For example, **The Nobel Channel:** <http://www.nobelchannel.com>, **The Smithsonian Institute:** <http://www.si.edu>, **NASA:** <http://www.nasa.gov>, **National Academy of Sciences:** <http://www4.nas.edu/nas/nashome.nsf>, **National Archives:** <http://www.nara.gov>, **School libraries on the web world wide:** [www.voicenet.com/~bertlands/lib.html](http://www.voicenet.com/~bertlands/lib.html).

**Curriculum:** See **Apple K-12 Curriculum:** <http://ed.info.apple.com/education/techlearn/ccenter/curriccenter.html>, **The Virtual High School:** <http://vhs.concord.org>, **Judi Harris:** <http://cowf.cc.utexas.edu/~jbharris/virtual>

**Homework:** See <http://schoolnotes.com/60093/aharper.html>, [www.schoolsucks.com](http://www.schoolsucks.com)

**Activities:** See <http://isaac.williamsport.wa.k12.md.us/~ctrout/sciproj/STELLA/index.html>, **50 Extraordinary Experiences for Internet Kids:** (<http://www.well.com/user/polly/ikyp.exp.html>), **Berkeley Public Library Kid Sites:** (<http://www.ci.berkeley.ca.us/bpl/bkmk/kids.html>), **The Lego Page: Legos never looked so good!** [www.lego.com](http://www.lego.com), **Yahooligans: The Web Guide for Kids:** [www.yahooligans.com](http://www.yahooligans.com)

**Parent's Corner:** See [www.family](http://www.family), [www.projectappleseed.org](http://www.projectappleseed.org), [www.ed.gov/pubs/parents/internet](http://www.ed.gov/pubs/parents/internet), **American Library Association:** [www.ala.org/parents/greatsites/50.html](http://www.ala.org/parents/greatsites/50.html), [www.ala.org/parents/greatsites](http://www.ala.org/parents/greatsites), **Internet Tutorial Page:** [www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html](http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html)

**Student Work:** See <http://www.gradenet.com/>

**Schedule of Tests/ Calendar of Events:** See [www.highwired.com](http://www.highwired.com)

**Video Cam:** See [www.cuseeme.org](http://www.cuseeme.org)

**Email Buttons:** See [www.libertynet.org/lion/web-pages.html](http://www.libertynet.org/lion/web-pages.html)

**Teacher's Biography:** See Hobbies, dog, favorite food, volunteer organizations

**Teacher's Staff Development:** See [www.school.discovery.com](http://www.school.discovery.com) **ASCD Online:** [www.ascd.org/](http://www.ascd.org/)

**Forms Parent/Student:** See [www.schoolnotes.com](http://www.schoolnotes.com)

**Report Cards:** See <http://www.bigwave.com.au/reports/>, <http://www.gradenet.com>

**Best Practices/ Standards:** See **MCREL:** [www.mcrel.org](http://www.mcrel.org), [www.bestpraceduc.org](http://www.bestpraceduc.org)

**FAQ's:**

# WEB QUIZ 1.0

For help go to:

[www.searchenginewatch.com](http://www.searchenginewatch.com) or [www.lib.berkeley.edu/TeachingLib/Guides/Internet/Tools](http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Tools)

- 1) What is the difference between a Directory designed site, such as Yahoo and a Search Engine site such as Alta Vista?
- 2) This search engine lists results by the number of links pointing to the site \_\_\_\_\_.
- 3) If you want to find the movies playing nearby your house, you would use which Directory?  
\_\_\_\_\_
- 4) What would you type in the search box to find every reference to Arthur Butz without finding every Arthur and every Butz? \_\_\_\_\_
- 5) Recently you noticed your daughter was spending several hours a day at a site called <http://worldkids.net/girl/>. You've grown concerned about what she does online for so long. You ask a friend about this and she suggests you enter on one of the \_\_\_\_\_'s to check out what goes on at the site.
- 6) If you want to find out if any teachers have developed activities related to the web site [www.nara.gov/classroom](http://www.nara.gov/classroom) what do type in the search box of Alta Vista to find the work?  
\_\_\_\_\_
- 7) You are wasting too much time waiting for downloads over the modem line at your home. You want to use your plain old telephone (POT) copper wires. You call your local \_\_\_\_\_ provider and ask if they can install a \_\_\_\_\_ connection so you can gain speeds of up to 1 megabyte by using your existing telephone lines.
- 8) Which search engine shows the results organized into "Custom Search Folders"? \_\_\_\_\_
- 9) Federal Government documents are most easily searched through which search engine?  
\_\_\_\_\_
- 10) If you wish to simultaneously search several engines, and you don't mind wading through several pages of links, log on to \_\_\_\_\_.

## ANSWERS:

<a href="http://www.altavista.com">www.altavista.com</a>	ISP	<a href="http://www.netsearch.com">www.netsearch.com</a>	<a href="http://www.govsearch.com">www.govsearch.com</a>
<a href="http://www.yahoo.com">www.yahoo.com</a>	<a href="http://www.google.com">www.google.com</a>	DSL	<a href="http://www.northernlight.com">www.northernlight.com</a>
<a href="http://www.dogpile.com">www.dogpile.com</a>	<a href="http://www.goto.com">www.goto.com</a>	<a href="http://www.netscape.com">www.netscape.com</a>	<a href="http://www.searchking.com">www.searchking.com</a>
browser	Directory Guide	<a href="http://www.lycos.com">www.lycos.com</a>	<a href="http://www.about.com">www.about.com</a>
chat rooms	<a href="http://www.yahooligans.com">www.yahooligans.com</a>	AOL.com	<a href="http://www.excitenews.com">www.excitenews.com</a>
	"Arthur Butz"	<a href="http://link:www.nara.gov/classroom">link:www.nara.gov/classroom</a>	

# Planning Activity

## Worst Fears Best Hopes

Scenario: Imagine that every student has an internet-ready cell phone every teacher has a web site, and every textbook company provides 24 hour/7 day a week feedback for homework and quizzes online. The entire high school curriculum is available at Virtualhigh.com, including every AP course. Video cams are available and live on the Internet from every classroom. What are your WORST FEARS and YOUR BEST HOPES for this scenario?

<b>WORST FEARS</b>	<b>BEST HOPES</b>

**About this Activity:** Research shows that it is essential to provide adults with an opportunity to express their fears and hopes. While doing this exercise it is possible to link the set of fears to the set of hopes. For example, a common fear is the “loss of social skills” and a common hope is the “opportunity for increased communication.” It is essential to validate people’s fears. Once the list of fears and hopes is generated, it can be used as a reference to make sure that the fears are minimized and the hopes are maximized.

# Staff Development:

We are now in a transition from paper to light. It is only natural to use digital technologies in the same ways that we used paper and pencil. For example, when we teach teachers to use wordprocessing, the result is that students are sent to the computer lab to use computers as \$2,000 pencils. Or, science students use \$600 probes to manually record graphs. In Zuboff's words, we are automating.

Our teachers come from a "paper trained" mentality while our students are entering a world that will rely on instant access and the movement of information at the speed of light. Training teachers to use technology is not the problem. Technical skills are easy to teach.

What is more difficult and important to do is to help teachers develop new practices and new challenges for students. For example, in a world that provides overwhelming amounts of information on a wireless handheld, the corresponding practice is to "walk away" when a student asks for an answer. We also need to help our colleagues learn to shift the responsibility of learning to students in order to prepare for an economy where many people will never apply for a "job" but will create their own. Preparing every student to have the discipline and rigor of managing learning over the web is a challenge we will have to give to the majority of our students.

The most powerful staff development models include:

- ◆ Teams of teachers and students learning together
- ◆ Teachers managing their own staff development over the web
- ◆ The role of leaders in establishing clear goals in advance of staff development
- ◆ Follow up to staff development events and accountability of applying new skills
- ◆ Opportunity for teachers to identify critical areas of the curriculum where technology can be applied
- ◆ Teachers who are sharing their best practices over the web
- ◆ Real-time staff development where teachers have support while they are teaching (More of this will become web based.)
- ◆ Teaching teachers how to manage authentic problem solving with authentic assessment

# New Relationships Activity

Emerging technologies are enabling new relationships among various school officials, parents, teachers, community members, students and others. If we can really access people instantaneously, what kinds of experiences can schools nurture where these relationships add value to both the individuals involved and the quality of the school program?

Relationships	Mutual Benefits
<b>Teachers and family service providers:</b> <a href="http://www.edc.org/">http://www.edc.org/</a>	
<b>Teachers and students on a one to one basis:</b> <a href="http://www.studyweb.com/">http://www.studyweb.com/</a>	
<b>Teachers and parents daily communications:</b> <a href="http://www.familyeducation.com/home/">http://www.familyeducation.com/home/</a>	
<b>Community members and schools:</b> <a href="http://www.asbj.com/magna/a8.html">http://www.asbj.com/magna/a8.html</a>	
<b>Business and schools:</b> <a href="http://www.eduventures.org">www.eduventures.org</a> <a href="http://www.aolfoundation.org/">http://www.aolfoundation.org/</a>	
<b>Alumni as mentors and students and teachers:</b> <a href="http://www.eschoolnews.com/">http://www.eschoolnews.com/</a>	
<b>Staff Development with staff from other places:</b> <a href="http://www.21CT.org/">http://www.21CT.org/</a>	
<b>Kids developing new relationships with kids:</b> <a href="http://www.thinkquest.org/impact/">http://www.thinkquest.org/impact/</a>	
<b>Kids and government:</b>	
<b>Kids and local and national professionals:</b> <a href="http://www.cisco.org">www.cisco.org</a> , <a href="http://www.microsoft.org">www.microsoft.org</a>	
<b>Parents and parents:</b> See <a href="http://www.parentech.org">www.parentech.org</a> , <a href="http://www.pta.org/index.stm">http://www.pta.org/index.stm</a>	
<b>Parents and curriculum and learning:</b> <a href="http://www.connectforkids.org">www.connectforkids.org</a> , <a href="http://www.ncpie.org/">http://www.ncpie.org/</a>	
<b>Administrators and Education Researchers:</b> <a href="http://www.iel.org">www.iel.org</a> , <a href="http://www.edc.org/">http://www.edc.org/</a> , <a href="http://www.ed.gov/prog_info/ERIC/index.html">http://www.ed.gov/prog_info/ERIC/index.html</a>	
<b>University Professors, Veteran Teachers, and Pre-service Teachers:</b>	

# Essential Questions

## *For the Next Generation of America's Schools*

1. How do we align our technology resources with the standards? Can we focus resources specifically in the areas where our students are demonstrating the most difficulties?
2. How can we provide parents with the information they need to become engaged partners? (for example, video tape, email, real time report cards, web cam)
3. Does the school's utilization of technology create equity or division?
4. What are all the new services schools can offer as they become the learning brokers for the entire community?
5. What are the new relationships created? How do teachers share work, fun, information, learning? What new relationships can we provide for children?
6. What impact on learning does a 7x24 model have?
7. Which boundaries can we make more permeable?
8. When will students get introduced to real world problems?
9. Where and how can authentic assessments be created?
10. How is real time staff development created?



Alan C. November  
Renaissance Learning, Inc.  
P.O. Box 812380, Wellesley, MA 02482-0018  
781-631-4333 / Fax: 781-235-5332  
Copyright 2001