Using Web Resources to Enhance Professional Development
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The physical limitations of a book restrict the amount of space that a writer can devote to any topic, but the World Wide Web has no similar limitations. I encourage you to use your favorite search engine (Google, Yahoo, Excite, etc.) and begin to assemble a collection of sites dedicated to your professional development. Here are three steps that you can take to make this a rewarding experience:

- *Organize*: Create a professional development folder on your browser.
- *Evaluate*: Practically anyone, from an esteemed educator to a leader of a hate group, can create a Web site. As you locate Web resources, make the effort to determine whether the site has the quality to be in your bookmarks or list of favorites. For advice on this activity, download the ERIC Digest, *Guidelines for Evaluating Web Sites* (http://www.ed.gov/databases/ERIC_Digests/ed426440.html).
- *Share*: Over the years I have observed that outstanding educational leaders develop their high levels of expertise in part by borrowing and sharing ideas and materials with each other. Follow those models and share high-quality Web resources with other students and professors.

The development of a good beginning administrator into an expert administrator is surely a learning process. It is also a process of enculturation in which the beginning administrator becomes a member of a community of practice. A key element of this enculturation is professional development. Once often a lonely, haphazard effort that received scant attention, educators and policy makers now realize that sustained, high-quality professional development is an essential component of programs to develop expert administrators and teachers.

The World Wide Web has become a force in the professional development of teachers. Many authoritative Web sites exist that provide instructional resources, information about educational research and theory, answers to questions about classroom problems, and opportunities for members of the community of educators to exchange ideas and viewpoints.

I invite you to explore Web sites that can help you develop your expertise as an educator. For a first exploration it seems appropriate to examine basic principles of professional development. *The Knowledge Loom... What Works in Teaching & Learning* (www.knowledgeloom.org) has a set of pages devoted to those principles. For each of the eight principles listed in the site, there are questions to help you consider the implications of a principle, examples of successful implementation of a principle, research summaries, and links for more detailed information.

Enhancing Expertise in Teachers: Language and Literacy Development

In one way or another nearly every educator is a "language teacher" although the mix of concerns may vary by subject matter, grade/age level, or specialty. The important roles of language in the classroom make it clear to expert teachers for the need to enrich their understanding of language development and their knowledge of effective techniques and strategies that enhance literacy skills.

There is presently a national policy to "leave no child behind" in school. This policy is resulting in a heightened emphasis on the development of literacy skills. If no child is to be left behind, then teachers will have to know and be able to implement a wide variety of effective classroom practices and techniques, to be current with research in literacy development, and to recognize the milestones and major trends of language development. This area is so crucial to plans for educational reform and improvement that you will find it useful to build a set of bookmarks or favorites related to it. Start with these three sites and use the questions as cues for exploring each one.

Effective Classroom Practices: Education Place® (http://www.eduplace.com/rdg/res/literacy/)
- What is emergent literacy?
- What strategies can students use to construct meaning from text?

Research in Literacy Development

The National Research Center on English Learning & Achievement (http://cela.albany.edu/research.htm)
- What does research tell us about the relationship between computer-technology and literacy?
- What role does language play in learning in academic subjects?

Language Development

The American Speech-Language-Hearing Association
(http://www.asha.org/speech/development/lang_lit.cfm)
- What are the major milestones in language development?
- What advice can teachers give to parents to enhance children's language development?

Enhancing Expertise in Teachers: Emotional and Social Development

When you consider the amount of time that students spend in school from the years of early childhood through adolescence, you see why teachers need a high level of knowledge about human development and expertise in the application of that knowledge. For example, are the ill-kempt appearance and surliness of a 13-year old typical within the bounds of normal behavior or are they signs of possible depression? How should you handle the tantrum of a first-grader, and what could a tantrum indicate? Teachers at all levels, preschool through high school, face several challenges. They need to create classroom and school climates that promote students' social and emotional growth. They should be able to identify student behaviors and attitudes that undermine that growth. They require the knowledge and skills to address such problems effectively in conjunction with the appropriate support professionals (e.g., guidance counselor, psychologist, psychiatrist).

You will find it valuable to collect and maintain an organized set of bookmarks or favorites about social and emotional development on your Web browser. Use the sites listed here as a foundation for your collections. The topics associated with these sites are examples of those that you can investigate at these sites. To judge the quality of the information offered at these sites, you might try to take the perspective of a first-year teacher who encounters these situations. Many sites have forums, ask the expert tools, bulletin boards, and newsletters that will help you stay current with research about emotional and social development.

Early Childhood and Middle Childhood
- Shyness
- Separation anxiety
- Fears/phobias
- Making friends
- Nightmares/sleep problems
- Reluctant speakers

Child Psychology Development Index (http://psychology.about.com/cs/child/)
drSpock (www.drspock.com)
KidsHealth for Parents (http://kidshealth.org/parent/emotions/)
Parent Soup (http://www.parentsoup.com/)

Adolescence
- Depression
- Suicide
- Substance abuse
- Parent/child tensions
- Delinquency
- Eating disorders

American Academy of Child & Adolescent Psychiatrist (http://www.aacap.org/)
Center for Adolescent Studies (http://education.indiana.edu/cas/)
Child Development Institute (http://www.childdevelopmentinfo.com/)
Connect for Kids (http://www.connectforkids.org/)
Resources on Adolescent Development (http://www.indiana.edu/~iuepsyc/topics/r_ado.htm)

Enhancing Expertise in Teachers: Learning Disabilities

Future teachers will be expected to be far more knowledgeable about learning disabilities than teachers in the past. LD Online (www.ldonline.org) can provide help with these challenges. It has a variety of resources that will elaborate your knowledge about this important topic. You will find descriptions and characteristics of specific learning disabilities, autobiographical accounts by people who have experienced learning difficulties, a bulletin board where people exchange information and questions, an archived column in which a child psychiatrist answers questions -- and more. Here are a few questions that you might explore at LD Online:

How can teachers' attributions about academic achievement affect the ways they interact with students with learning disabilities?
How can teachers structure the classroom environment to enhance the academic achievement experiences of their students with learning disabilities?
What can a teacher do to facilitate home-school collaboration for students with ADHD?
What are the main issues involved in the use of assistive technologies to support the learning of children with learning disabilities?
What instructional strategies can my teachers use to assist students with various specific learning disabilities?

Enhancing Expertise in Teachers: Memory Techniques

At some point in the semester my hunch is that you will be busy taking exams, writing term papers or reports, and working on a long-term project or so for your various courses. If that's the case, you will probably enjoy a brief diversion from your workload, and you'd appreciate some help remembering efficiently and effectively what you are learning in those courses.

Set aside your class notes, study guides, and textbooks, and navigate to NASA's Applied Cognition game page (http://human-factors.arc.nasa.gov/cognition/tutorials/index.html). Here is a set of five memory games. Take a few minutes and play with each game. After you've played them, try to match a game on the left with a principle of human memory on the right:

1. Penny Recognition	A. Reconstruction
2. The Mnenomicizer	B. Organization
3. Human Memory: Recall	C. Interference
4. Interference	D. Meaningfulness
5. Short Term Memory: Encoding and Rehearsal	E. Elaboration

These games demonstrate several of the characteristics of memory: reconstruction, organization, meaningfulness, interference, and elaboration. Knowledge of these characteristics, and their implications for learning and teaching, will enhance your own expertise as a student, and benefit the students that you teach. Insights into the nature of memory have led to the development of many techniques that are highly effective for enhancing the storage and retrieval of information. Medical students, for example, need to remember thousands of physical structures, processes, diseases, drugs, and pathogens (just to mention a few) – and understand the relationships among them. It would be nearly impossible to learn this information by simple rehearsal, so these students often rely on memory techniques for that purpose. (To see what I mean, go to a search engine and enter "medical mnemonics" in the search box.)

Enhancing Expertise in Teachers: Thinking Skills

Most of today's college students went to elementary and high school during a period of reform in the major curricular areas (e.g., science, mathematics), and efforts to reform these areas continue to the present. A common theme of these reforms has been an increased emphasis on the development and use of *higher-order thinking skills*. Some caution should be used when using this term. For some educators the term primarily refers to inquiry skills, for others it means problem-solving skills, and for some it emphasizes critical thinking skills. Nevertheless, the essential problem is that too often teachers devote too much attention inadvertently to *lower-order thinking skills* (i.e., knowledge, comprehension, and application skills).

The Center for Critical Thinking (http://www.criticalthinking.org) provides a variety of resources to support teachers' efforts in elementary, secondary, and college classrooms to enhance students' higher-order thinking skills. (The site divides elementary and secondary resources from college resources. Whatever your level, be sure to explore each set of resources.) These resources include easily implemented instructional tactics and assessment strategies that can promote a culture of thinking in the classroom. Of particular interest is a set of lessons that have been restructured to encourage the students' higher-order thinking skills.

In addition to the Center for Critical Thinking site, you might find the following sites valuable as you build your expertise about thinking skills:

- AEA 7 (http://edservices.aea7.k12.ia.us/framework/thinking/)
- NEA Works4Me Tips Library
  (http://www.nea.org/helpfrom/growing/works4me/teachtec/thinking.html)
- NRWEL (http://www.nwrel.org/scpd/sirs/6/cu11.html)
- ERIC Digests (http://www.ed.gov/databases/ERIC_Digests/index/) (Type "thinking skills" in the search box.)

Enhancing Expertise in Teachers: Problem Solving

If you look at the teacher's guide for any recently developed mathematics or science program, you are certain to see a pair of words: problem solving. (And you will see this pairing often.) This encounter between you and these two words is not by chance. Forces and innovations in our culture are often reflected in school curricula. Changes in the nature of work and business, the potential benefits of emerging technologies, and research in psychology have increased the press on teachers, beginning as early as preschool, to nurture the inquiry and problem solving skills of their students in all academic areas.

Problem solving, of course, is far more than a mere term. It represents a rich body of research and classroom practice. There is a major debate about whether effective problem solving strategies are general or domain-specific. In order to develop your expertise in the area of problem solving, it would be useful to examine problem solving in more detail from a domain-specific perspective - or more accurately from two domains. Mathematics and science are domains in which educational psychologists have extensively researched basic processes of problem solving, and teachers have traditionally designed strategies to enhance problem solving skills in these areas.

The Eisenhower National Clearinghouse (http://www.enc.org/topics/inquiry/) provides rich sets of resources and information about problem solving in mathematics and science. When you reach its home page, you will notice that problem solving is one of the major sections of the site. As you navigate through that section, you might find it refreshing to see that the clearinghouse incorporates knowledge from two major sources: practitioners (i.e., expert teachers) and researchers (i.e., educational psychologists).

The ENC section about problem solving illustrates that point well. Here you will find articles and information about problem solving and:

- questioning techniques.
- problem-based learning.
- peer learning.
- creativity.
- thematic units.
- communities of learners.
- student discourse.
- learning with technology.

Problem solving is not the sole domain of mathematics and science educators, of course. Each discipline has unique contributions to make toward solving the problems of contemporary life. Yet you are likely to find that the topics that the ENC associates with problem solving in mathematics and science is also likely to be associated with most other disciplines.

Enhancing Expertise in Teachers: Motivation to Learn

The letter stunned Judy, and she was not sure how to respond to it. A parent wrote a letter complaining that one of Judy's teachers was not "a good motivator of her students." This troubled her because, if anything, Judy saw the teacher as someone who got most of her students to enjoy learning for its own sake. The parent's major complaint was that the teacher "failed" to participate in two reading incentive programs that year. (A pizza chain sponsored one program, and a nearby theme park sponsored the other.) Teacher participation in these programs was voluntary. Judy believed that these programs emphasized the quantity of reading materials over the material's quality. "I agree with you," Judy told the teacher, "and I'll back you up. Let's have him in for a conference, but be prepared to counter his points, and explain how you deal with motivation."

An administrator or teacher in this situation would find some immediate help with Web resources. In Web interviews, two educational psychologists Carol Dweck (http://www.education-world.com/a_curr/curr197.shtml) and Alfie Kohn (http://www.webtools.familyeducation.com/article/0,1120,3-281-0-1,00.html) discuss motivation to learn, and they provide a rationale for emphasizing the values of learning itself in contrast to the value of tangible rewards often associated with learning. The Northwest Regional Educational Laboratory (http://www.nwrel.org/request/oct00/index.html) offers a concise, authoritative Web "booklet" about motivation to learn. This booklet is essentially a novice's guide to student motivation. It contains sections about research related to the topic, affective and cognitive strategies designed to enhance intrinsic motivation to learn, suggestions for the design of engaging class activities, tips for creating motivating homework assignments, and suggestions for involving parents in those assignments.

There is one element of student motivation to learn that Judy did indeed fail to see until there was a problem: the role of parents. Parents and a student's family life have a profound impact on how that student values learning. Whether Judy agrees with the parent or not on the issue of motivation, it is clear that she is dealing with a caring parent. These parents can be valuable allies in boosting motivation. Judy might turn this parent into an ally if she employs the suggestions for parents offered by the National Education Association (http://www.nea.org/helpfrom/connecting/tools/motivate.html).

Enhancing Expertise in Teachers: Questioning Techniques

Effective questioning techniques may be among the most powerful tools that teachers can employ during lessons. Many educators have become enthused over innovations such as cognitive apprenticeships, peer learning techniques, and authentic learning activities - and much of the enthusiasm is justified by research in the use of these tools. An essential element of each of these techniques (and nearly all other contemporary learning techniques) is keeping students cognitively engaged - and that is where skillful questioning strategies are especially effective. Questions play several roles in cognition. They can help students rehearse information for effective recall. They can work to identify gaps in one's knowledge base, and provoke curiosity and long-term interest. They can initiate cognitive conflict, and promote the disequilibrium that results in a changed knowledge structure. They can serve as cues, tips, or reminders as

an expert guides a novice in a learning experience. And the use of questions can and should be employed students as well as teachers.

The complex nature of questions and questioning techniques and strategies is reflected in the number of potential "hits" a search engine will provide for those terms. (You will also find that many of the pages and sites are designed for the corporate world. Questioning techniques are important for the employee selection process, planning business strategies, and for determining the needs of customers.) The two sites discussed here focus on different aspects of questioning, and they complement each other well. The Questioning Toolkit (http://www.fno.org/nov97/toolkit.html) sponsored by *The Educational Technology Journal* defines and illustrates the many types of questions that arise in classroom discourse. It examines the different tasks that different kinds of questions can accomplish. For example, in a stimulating learning environment students and teachers are likely to pose a variety of organizing, hypothetical, probing, planning, and provocative questions. Expert use of the different types of questions can significantly enhance the level of cognitive activity of all those involved.

The University of Illinois at Champaign-Urbana offers an online booklet titled *Effective Classroom Questioning* (http://www.unl.edu/teaching/teachquestions.html). This booklet focuses on the use of questions as they pertain to Bloom's Taxonomy, explains the differences between open and closed questions, and higher and lower order questions. It has an excellent section that considers important components of questioning such as wait-time, instructor attitude, and tips for maximizing student participation.

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Enhancing Expertise:
The World Wide Web and Teacher Evaluation

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For resources on teacher evaluation, see these sites.

http://ericae.net/db/edo/ED315431.htm

http://ericae.net/db/edo/ED364926.htm

http://www.teacherevaluation.net

http://www.teacherevaluation.net/PrincipalRoles/monitor.html

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Enhancing Expertise in Teachers:
Classroom Management

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Natalie, exhausted and exasperated, went across the hallway to speak with her more experienced colleague. Natalie had been hired as a substitute for a teacher who was out because of a long-term illness. Two other substitutes had filled in on a short-term basis prior to Natalie's appointment. "It's almost as if law-and-order has broken down in that classroom," she explained. "I'm not sure where to begin. No one seems to know any rules or procedures for anything. The students have little respect for me or for each other. I dread walking down the hallway with them - it's like I'm escorting a tornado! When I try to establish a routine or a procedure, they complain that it's not Ms. Naples way." The veteran responded, "Don't worry about Ms. Naples. We don't know when or if she'll be back this year. Consider it your class, and move forward from there."

Like Natalie, many teachers experience anxiety over their classroom management skills. "Lay down the law on the first day!" and "Don't smile until December!" are among the more common examples of teacher folk wisdom that these teachers often hear. The message in such bits of advice (i.e., Strong disciplinarian = good teacher) is one that may strongly appeal to a novice who is being challenged to establish a classroom environment that is conducive to learning. Effective classroom management, however, requires a broad set of skills and techniques for which folk wisdom seems to offer little guidance.

The Center for Talented Youth (CTY) (http://www.jhu.edu/gifted/teaching/classroom.htm) sponsored by The John Hopkins University defines classroom management as "... creating and maintaining a safe, supportive, and challenging learning environment." A discipline system is part of such an approach to classroom management, but it is not enough by itself. The CTY suggests a variety of techniques and strategies that a teacher, whether a novice or highly experienced veteran, would find valuable.

- creating rules with the class.
- working with learning disabled students.
- using brief activities to promote a sense of community among students.
- understanding the problems of gifted students.
- employing cooperative learning to foster a positive classroom atmosphere.
- preventing classroom problems.
- enhancing the flow of a lesson.

The CTY also includes an extensive set of outside links about classroom management. Perhaps the most interesting of these sites is one that challenges you to discover your classroom management profile. Take the brief self-quiz at this site (http://education.indiana.edu/cas/tt/v1i2/what.html), and see how the results compare to your perception of yourself as a classroom manager.

Enhancing Expertise in Teachers: Teaching Tolerance

The incident was a small one, but it exemplified many of the issues that teachers face as a result of the nation's demographic changes. Emrah, who qualified for the free lunch program, told his principal that he could eat neither of the two offerings in the school cafeteria that day: sausage with pancakes or deli sub sandwich - because of religious reasons. The teacher contacted the cafeteria manager. The manager said that no accommodations could be made because no other foods were available. (One of the cafeteria workers remarked that "they" should learn to eat what "we" eat.) The principal finally reached the school district dietician who resolved the dispute by pointing out that the "ham" in the deli sub sandwich was actually turkey ham that Emrah could eat. "I am glad we were able to take care of that problem," said the dietician. "But we can't make accommodations for every ethnic or religious group in the district."

As the nation's school population continues to diversify, incidents like this one (and others far less easily resolved) will certainly arise more and more often. Teacher with expertise about and respect for cultural differences will be able to face these challenges in ways that help students experience genuine acceptance by the school community, leading to increased ethnic pride and motivation to succeed in school.

The Southern Poverty Law Center sponsors the Teaching Tolerance education project (www.tolerance.org) that helps "teachers foster equity, respect and understanding in the classroom and beyond." It major concern is fair treatment of all people regardless of religious affiliation, gender, race, age, ethnicity, sexual orientation, or physical status. Teaching Tolerance takes a comprehensive approach to achievement of that goal. Here you will find information and resources including:

current events.
classroom lesson plans.
activities to foster teacher self-reflection about tolerance.
a teacher's forum to share ideas about fostering tolerance in the classroom.
guidelines and tips for responding to intolerant incidents inside the school.
links to other Web sites that promote tolerance.

Perhaps Teaching Tolerance's most interesting - as well as unsettling - feature is its set of **Implicit Association Test**s (IAT) that measure unconscious bias. These tests might offer you some insight into your own possible hidden biases about race, homosexuality, age, gender, and body image. Teachers alone, of course, cannot create an atmosphere of equity and respect. The sponsors of Teaching Tolerance also provide numerous resources to engage parents and students in efforts to foster tolerance and equity.

Enhancing Expertise in Teachers:
Assessment

Robin was one of several teachers from her high school (and the only first-year teacher) to be invited to serve on the special district committee for assessment and evaluation. The superintendent created the committee in reaction to a report by a team of monitors from the state department of education. The report was generally favorable, but the team criticized the district's high schools for their near-exclusive use of traditional tools for assessing and evaluating students. (The monitors noted that modern preparation for many professions, including teaching, incorporated a variety of traditional and non-traditional assessment techniques.) The committee would make recommendations for revamping the district's approach to assessment and evaluation.

Assessment is one of the most complex tasks of teaching. Just as innovative instructional techniques have enriched the scope of how students learn in school, innovations in assessment can provide teachers rich insights into the complexity and sophistication of what their students have learned and can do with their knowledge. Just an architect needs to be knowledgeable of materials, construction techniques, client needs, and aesthetics - and understand how they affect the use of a building, an administrator needs to be knowledgeable of the purposes, uses, and values of different assessment techniques - and understand how they affect the learner.

At the first meeting of the special committee on assessment Robin would find it valuable to introduce other committee members to the section of Edutopia Online (http://www.glef.org) that is devoted to assessment. The sponsor of this site, The George Lucas Foundation, has tapped into the expertise of many of the leading scholars on assessment to provide a rich set of resources devoted to the knowledgeable use of alternative forms of assessment in the classroom. A list of the assessment topics examined by Edutopia could serve very well as the committee's agenda:

- Classroom, school, and district-wide examples of alternative assessment programs
- Interviews with assessment experts
- Portfolios (including the use of digital portfolios)
- Using exhibitions for assessment
- Assessing project-based work
- Current research on assessment and testing
- Using performance-based assessment
- The teacher's role in assessment
- Student reflection

Strategies and resources that parents, policymakers, teachers, administrators, and community members can use to educate the public about K-12 assessment.