
CHAPTER 3

BUILDING DEEP UNDERSTANDING IN THE LIBRARY BY BANNING BIRD UNITS AND REPLACING THEM WITH HIGH-LEVEL THINKING EXPERIENCES

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Introduction

The evolution of the school library from a support/supply center into a force for learning has been a goal of school library leaders for half a century. Frances Henne had such dreams for the field and wrote them into the 1960 standards for school library media programs. Looking back half a century, a collaborative role, a leadership role, and a force for achievement has been difficult for the bulk of our professionals. My own theory of the reasons for this situation lie in the fact that the warehouse duties of the librarian are so overwhelming and take so much time during a typical day, that our professionals do not take the time to collaborate.

We do have outstanding examples of librarians who have discovered the collaboration role, have a large enough staff to pursue that role, or just grit their teeth and put it as their highest priority no matter the crush of other duties. Obviously, enough of our professionals do some things right every day because their efforts show up in the Lance studies that link library media programs to achievement.

Two types of programs seem to be popular in the field today. The first are those professionals who emphasize reading as a foundational element of their library program. These professionals carry the torch of the "love of reading," leaving the skill of reading to be taught by the classroom teacher. Recently, more and more professional literature has been aimed at teaching librarians to become a part of the reading team and showing them how to integrate reading skills naturally into their literature programs. The other large segment of the field seems to concentrate on the teaching of information literacy skills as their central focus. This is largely the result of Michael Eisenberg's leadership in pushing information literacy to the consciousness of the field.

Two forms of information literacy instruction seem to predominate at the moment. The first is to teach information literacy skills as a course of instruction to be experienced by students in a systematic fashion at each grade level. Scope and sequence matrices have been published by many states and there are many professional guides that help the librarian build such a curriculum. This type of instruction is particularly popular in

elementary schools where fixed library schedules predominate. Doug Johnson, a prolific writer and speaker in the field advocates this approach.

The second but less popular form of teaching information literacy is to teach library skills "just in time" as assignments or projects make their way through the library during the school year. Touted as superior by the majority of writers in the field, this type of teaching rests upon the foundation advantages of integrated teaching and practice of skills at the time when they are beneficial.

This paper advocates that a third wave of interest become center stage in library media programs as a means to integrate the previous two into a holistic program. We refer to collaboration as the star-studded element and the central element into which both reading and information literacy fold in quite nicely. This means that a traditionally weak program element would be thrust into prominence with its tentacles reaching into every classroom of the school and recognized as a prized contributor to achievement.

The problem with collaboration, however, is that our professionals do not seem to identify it the same way. Many count cooperation or support, or service as collaboration when the professional literature defines it quite differently. Many authors could be quoted to define collaboration as a librarian and a teacher jointly planning, executing, and evaluating a learning experience – a team teaching effort done together, taught together, and evaluated together.

But what is an exciting learning experience that is collaboratively implemented? Our contention is that in the past, too many learning experiences in the library were much too low-level resulting in very little learning. We coined the phrase, "Ban Those Bird Units" referring to a process of replacing low-level learning experiences with much higher-level ones.

In the introduction to the book *Ban Those Bird Units: 15 Models for Teaching and Learning in Information-Rich and Technology-Rich Environments*, the focus is aimed at the teacher rather than the librarian. It explains in as clear a defense as the author could write what bird units are, and how to replace them with the help of the librarian to become exciting learning experiences.

We thought it proper to reprint that introduction here asking readers to test the clarity of its explanation and challenging them to do an even better job of communicating what the library can do to enhance teaching and learning. Here it is:

An Introduction to Bird Units

There are certain types of research assignments that contribute little or nothing to learning. Teachers should recognize such low-level activities and re-design to build achievement

What is a "bird" unit?

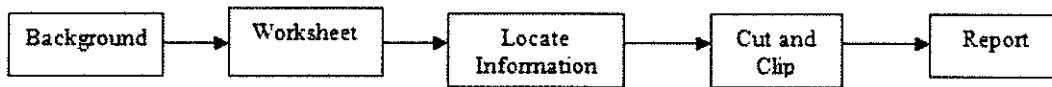


Figure 1: Pattern of a bird unit lesson.

As figure 1 illustrates bird unit usually follows this common pattern:

1. The teacher provides background to a topic in the classroom (could be birds, presidents, countries, states, people, etc.).
2. Textbook work is done.
3. The teacher asks the class to do a project in the library or computer lab and provides a worksheet for data collection. The worksheet contains fact questions.
4. Students pick a "bird" to research and go to the library or computer lab where the librarian or technology coordinator introduces them to a few resources.
5. Students copy information from information sources onto their papers.
6. Students report back to the class or turn the papers in for a grade.

Why is a "bird" unit generally a disaster?

When the majority of research in the library or computer lab is merely the cutting and clipping of information into some sort of report, little learning takes place. In the age of technology, students can easily cut and paste megabytes of information from the Internet or electronic sources and turn them in as a report. Obviously, time in the library or computer lab is underused and little progress toward educational achievement is made. In fact, assignments like these encourage plagiarism.

What is to be done?

1. Re-design the activities so learners must **THINK ABOUT** and analyze the information they collect in the library media center, thus increasing learning and achievement.
2. Re-design activities so that learners must **DO SOMETHING** (synthesize) with the information they collect (such as sense-making, performing, trying out, acting, building, etc).
3. Keep redesigning activities until number one and number two happen.

This book contains fifteen models to use, as the classroom and the library and/or computer laboratory are merged for a learning experience. Each model is designed to insure that students develop understanding and build knowledge. The design of each model requires

students to not just cut and clip or extract information, but forces them to use that information in a higher-level thinking activity. The objective of the Model is preparing students to achieve and learn more in the real world of information and technology. The models do not ask you to abandon any successful teaching method, but suggest simple changes to elevate the learning experience dramatically. The models are based on experience and educational research and are designed to work in an information-rich environment pictured below.

Reflecting on transformed learning experiences

As the collaborative team plans, transforms, or reinvents a learning experience into one of the models of the book, here are some reflective rubric-like statements to consider. The transformed unit:

- Was true to the model or was a creative adaptation of it.
- Caused students to use higher-level thinking resulting in deeper understanding. We are confident that the students learned more because of our new design.
- Made use of QUALITY information resources and APPROPRIATE technology.
- Integrated information literacy and technology skills into the learning experience.
- Was a true collaboration of teachers, librarians, and technology professionals.
- Was so successful that we plan to do it again, or we know how to tweak it to make it even better next time.

Introduction for Educational Leaders

Why such a crazy title? What are Bird Units? And why do you have something against birds?

For decades, school, public, and academic libraries have been plagued by “bird units.” Bird units come in two different species: Fill-in-the-Blank Worksheet Birds, and Report/Term Paper Birds. So ubiquitous are these two species that they have crowded out every other kind of beneficial species and are as welcome as a New York City pigeon or a crow in a garden patch.

Permit us to illustrate.

Story One:

Teacher X is faced with teaching the “bird unit” for the tenth time in a decade of teaching. The bird unit topic could be Civil War, California Missions, old/famous/white dead men...etc., ad infinitum. The unit is to last from Monday until Friday. Days one and two are taken up with a brief introductory lecture, the reading of a textbook chapter, and having students answer the chapter questions.

Wednesday. Time for a change of pace. Search the files. Find that sheet with all the purple writing on it (you have to be old to understand this joke). Take the worksheet to the copier and now you have a worksheet printed in black. Breeze past the library to inform the librarian of the impending invasion.

March the class to the library. Give each student a worksheet. Say: "Pick a bird—any bird and answer the questions." Hopefully, the librarian has had time to pull the bird books onto a cart for easy location. Students rifle through the books looking for "their bird" and the answers to their questions.

To young Susan's dismay, there isn't a whole book on the Rocky Mountain spotted woodpecker. She grumbles, adding to her tally that once again this library is a failure. Juan is disappointed because he did find a book on the ruby-throated hummingbird, but the answer to the first question was not on the first page, so he bops Susan on the head with the book and they both start fighting. Since teacher X has escaped the scene to the teacher's lounge, the librarian calms the troops and helps everyone find something to use.

The worksheet assignment is to locate a few facts, and we know them already:

- What does my bird eat?
- What color is my bird?
- Where does my bird live?
- Does this bird migrate? If yes, where?
- Etc.

Forty-five minutes later, the teacher re-appears, gathers the chicks, and for the next two days, students do reports in the classroom on their birds.

The last activity on Friday is the test, assessing what students learned from the lecture and the textbook but nothing from the "library" activity. The library activity was a goose egg—the tenth goose egg in fact. It has been a test of whether a student can find a fact and then copy it from one place to another: a first lesson in plagiarism.

Story Two:

Teacher Y usually spends three weeks on bird ecosystems. The first two weeks are filled with textbook/lecture activities. On Friday of the second week, the teacher announces that the next week will be used to do a library research paper. It has been difficult to get the class scheduled every day in the library for a week, but our teacher has planned ahead and gotten on the calendar.

On Monday, the assignment is given. "Pick a topic having to do with birds you are interested in and write a six-page report." During the research time in the library, the teacher has the librarian conduct the class but is available for questions while grading papers in the corner.

Andrew, one of the students in the class, has had this kind of assignment before and knows exactly what to do so that he can spend most of his library time flirting with Theresa, his latest flame. He seats himself at a library computer and finds that the Internet is down. No worry, he will connect from home on Thursday night to download a paper from his favorite "term paper site" and turn it in Friday morning. No use sweating this one out, particularly since he has two other papers due the same day and every night is taken up with his part-time job. Andrew doesn't know much about birds, but he knows a lot about searching the Internet (using it to cheat) and succeeding with girls.

Story Three:

Teacher Z has been feeling the pressure of both the state standards and the standardized testing and is trying to find a way to cover more material in the same amount of time. Needing more time to focus student attention on what will be tested, the library bird units of the past are cancelled, in favor of parsing sentences.

Our three scenarios are stereotypical but all too common. As a reader, you probably have lived through something similar when you were a student. Perhaps you have taught a bird unit at one time or another.

We propose the banning of goose egg—non-helpful—bird units as low-level learning experiences. They are counter-productive in today's emphasis on achievement and boring, boring, boring to students. To cut out the library experience, however, is no solution at all.

P.S. We have nothing against birds!

What do you mean by "Information-rich and technology-rich environments?"

Permit us a bit of background.

START WITH A TEACHER. Millions of children in the world today have very limited information systems to educate them. They have the wisdom and learning of their parents and their communities, but have only a teacher for more formal education: no fancy facilities, no books, no blackboards, no computers, no desks. To these students, the sum total of information is in the head of their teacher. As a result, rote learning is the primary activity of the school day.

ADD A TEXTBOOK. Millions of other children draw not only upon their culture and their teacher, but have the advantage of a textbook as an added information system. Textbooks have been wonderful inventions because they combine the expertise of many subject specialists coalesced through the eyes of a textbook author into a very versatile data storage mechanism. These information packages are very convenient and available for use both in and out of school, depending on the circumstances and affluence of the school.

The problem with the textbook culture as an information system is now becoming a major challenge. The textbooks of today:

- Are often bloated, as the amount of knowledge in many disciplines explodes.
- In addition to core knowledge, all kinds of exercises, side bars, supplementary materials (at additional cost) and every other imaginable resource that a teacher might use, including digital resources available on line.
- Often cost in excess of \$100 per copy and weigh so much that parents demand a copy at school and one at home.
- Can only be read by a percentage of the students in the classroom because of low reading level or language problems.
- Are not challenging enough for other students
- Become outdated because of replacement costs
- Often do not correlate well with state standards and state tests.

In the introduction of a recent college textbook, the editor said something to this effect: "All you need to know is in this book and its online supplement of thousands of digitized articles. No need to use the library." An attractive promise indeed. Since the conglomerate publishing company owns many periodicals, publishes many prominent author's works on the topic, and has the capability to deliver its products in any form and at any time, it seems logical to package a total information environment at the highest price the market will bear. From one vantage point, if standards, testing, and the textbook are controlled, then we only have to require teachers to be accountable for the prescribed material. "Here is what to teach. And, here is the schedule of the page you should be teaching from each day of the school year."

Given the problems with the textbook, many have asked: "Isn't there another solution?" While total packaging and regimentation is possible and workable in some countries, it hardly fits the model of a creative and innovative society. We believe that all students would thrive in the next stage of a rich information environment.

Turn on the information-rich and technology-rich environment.

In the eighteenth century, Dennis Diderot felt that the universe contained a finite amount of knowledge and that almost all of what could be known was known. Thus, he created an *Encyclopédie*, feeling that all knowledge could be captured and summarized in a single set of volumes. In the late 19th century, Melville Dewey also felt that his classification system would go through only a few editions before it could classify the sum total of all knowledge. The Dewey Decimal System is now in its 22nd edition and is being revised regularly to keep up with the expanding knowledge of the world.

With the introduction of the microcomputer and the Internet in the last decade of the 20th century, the world of information has changed dramatically. Suddenly the information pool has deepened to an ocean, and access through technology is ubiquitous. Schools are making progress toward wireless access—even Starbucks has hot spots. In such an information environment, everything changes, or at least needs to.

What is an information-rich environment?

The illustration in figure 2 details the components of information-rich and technology-rich environments, as we know them today. This evolves, of course, as various technologies and delivery systems evolve.

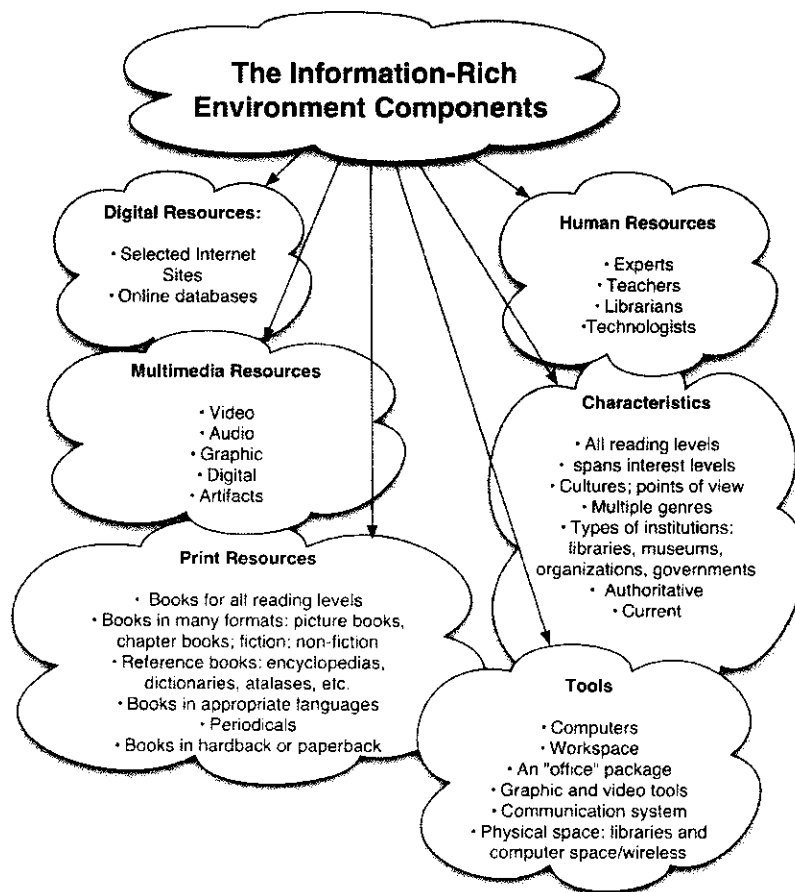


Figure 2: Components of an Information rich and technology rich environment.

What do we know about the Internet in its decade of major expansion?

- It has billions of sites and may crash under its own glut.
- Contains anything anyone wants to put up including pornography, advertising, chat spots of nefarious characters, and information from any kook who cares to post.
- Allows organizations of all types to post their official information or misinformation.
- Has become a powerful political tool around the world
- Contains more misinformation than accurate data.
- Is becoming outdated as sites are not kept up.
- Is becoming less and less "free" as authors try to recoup their costs of creation and maintenance.
- Is so overloaded with noise from unwanted email and other propaganda that its burden on the individual is almost unbearable.

More importantly, what DOESN'T the Internet contain?

- Almost all copyrighted materials, because authors expect to be paid for their work.
- Almost all fiction and nonfiction books published in the last 75 years—in other words, everything you'd expect to find in a Barnes and Noble.
- Virtually all children's literature published in the last 75 years
- Full-text articles in most magazines and newspapers.

However, FOR A FEE, one can access through the invisible Internet:

- Full-text magazine articles and newspapers, some extending back into the 1980s.
- Current audio books.
- Current music.
- Major databases critical for students and teachers.
- More and more digitized e-books (current copyrighted books usually in PDF format).
- Thousands of term papers and reports ready to download and turn in to a teacher.

And you thought the Internet was free. Well, there's Shakespeare, along with many of the other classics. And there's plenty of stuff at least a century old. But if you want current research, it's going to cost precious shekels.

Yes, I know we are in an information-rich and technology-rich environment, but what is your point?

The point is, in the last twenty years, teaching in a sparse information environment or in a textbook/lecture culture has become antiquated. The real world, and the world our students will live in for the foreseeable future, is a very information-rich and technology-rich world of information. Continuing to teach in an outmoded information space is to continue to use horse and buggy technology in the space age. Table 1 below contrasts both poor and rich information environments.

Table 1: Poor and rich information environments

Tightly Controlled and Smaller Information Environment	An Information-Rich and Technology-Rich Information Environment
<p>Advantages:</p> <ul style="list-style-type: none"> • Everyone on the same page at the same time. • Easy to tally “what has been covered.” 	<p>Advantages:</p> <ul style="list-style-type: none"> • Information and technology for each learner at their skill level/language level. • Interest level easier to satisfy. • Variety in itself a motivator. • Simulates the real world of work and life in general. • Can stimulate all learning styles.
<p>Disadvantages:</p> <ul style="list-style-type: none"> • Learners not on the level of the textbook/lecture/assignments. • Satisfies only one learning style. 	<p>Disadvantages:</p> <ul style="list-style-type: none"> • May get out of control. • Usually takes more time if not planned well.

Our second point is that few curriculum leaders, policymakers, school administrators, and teachers have taken any notice. True, we have spent billions on hooking kids up the Internet and turning it on, but we have paid less attention to what’s on the wires than the wires themselves.

What do you mean, “education has not taken notice?”

Consider our observations and challenge them if you can:

- National standards for the various curricular areas—such as social studies, science, or math—may refer to the need for computers but either ignore the issue or assume that a high quality information system will be provided.
- Programs at national professional educational associations rarely have sessions addressing how to teach or learn in the new information-rich environments. There are often sessions on how to use a piece of technology in teaching as a useful tool in information access, but rarely on what to do after the button has been pushed and the result is 7,254 web sites available on your topic.

- Few major authors in educational pedagogy take note that the world of information has changed. For example, a major book¹ on building background knowledge never recognized the new information world.
- Major movements, such as Understanding by Design,² have great pedagogical ideas. However, we must apply those ideas to the information-rich world where they would flourish.

To educators in information professions, the dismissal of the new world of information has been mystifying on one hand and saddening on another. It is as if the world changed but no one noticed.

Yes, but isn't the movement into this new information and technology environment implied by all the major educational thinkers?

Perhaps. But we are unconvinced that the main players really have considered the major shift in information and really have taken it seriously. We rarely see instructional models that help teachers and students live and work in anything other than a textbook environment or a contained classroom with perhaps a single connection to the Internet or a couple of hundred books in the classroom library. Do a survey yourself. Check any of your popular books in education and look in the index for words like *information, information literature, information skills, library, librarian, databases, Internet*, or any techniques that work only in high quality information environments.

So What?

There is a presumption that there is a library in the school with rich resources; that there are databases and high quality Internet sites selected for student use; and that these resources are available anywhere and at any time. In today's frantic funding scene, anything taken for granted is likely to disappear. Many school libraries have a very small budget and have not kept up in technology. Often, if a professional retires or moves, a clerk replaces the professional, as if a person with little educational background could build the kind of information system students and teachers desperately need.

Yes, there are stereotypical librarians who protect their ancient books and act like a dictator in their space. Yes, there are tech directors who act like demigods keeping everyone off their networks lest they crash. Those folks need to change or leave. Our point is that without competent professionals who are teachers in both libraries and tech

¹ Building Background Knowledge for Academic Achievement: Research on What Works in Schools. Robert J. Marzano.

² Fill in

centers, teachers and kids will suffer. In other words, we ignore libraries and tech centers at our own peril. Teachers and administrators who have experienced super school libraries and technology programs have experienced the great lift that quality programs have – non only on the collaborative design of teaching, but the impact these programs have on student learning. It is not surprising that quality school library media programs keep turning up in research studies as making a difference in academic achievement.³ For those who have not experienced these types of programs, search out and visit several to discover why they make the difference they claim. It's the same everywhere in education. It's people who make the difference.

Again, what's your point?

The premise of this book is that there are three teaching environments, which are all very different:

1. Teaching when there is nothing other than the teacher's knowledge;
2. Teaching in a textbook/lecture world;
3. Teaching in an information-rich and technology-rich environment.

The design of a learning experience and what works in each of the three environments is quite different. Our point is that all pedagogy must be redesigned or reinvented to work as the information and technology environment evolves. This will take good librarians and technology specialists to get the job done. Take the case of differentiation of instruction, a concept that is very popular. How can a teacher hope to meet the needs of every child in the classroom when only a few can understand the textbook? Do we assume the teacher is resourceful enough to compensate for a failing information system? Are we forced back into the teaching-by-rote era? Do we assume that the lecture will compensate for the tough textbook? Do we assume that children who are just learning English will understand the lecture? Do we just say to the teacher, "Speak more slowly and loudly and they will understand?" We hardly think any of those suggestions are realistic in a world expecting every child to succeed.

So what do you propose?

First, lets get a few things straight.

³ Since 1993, at least fifteen state studies have been conducted identifying quality school library media programs as one component contributing to academic achievement. Many of the studies have been conducted by Ketih Curry Lance in states such as Colorado, Minnesota, Iowa, Illinois, Pennsylvania, Alaska, etc. For a complete list of the studies and their findings, visit <http://www.davidvl.org> and look for the research link. Or visit the Colorado State Library web site for an additional bibliography of research studies on the impact of school libraries.

- A well-prepared lecture is hard to beat as a teaching technique, although a certain percentage of the students will either ignore it, not understand it, misinterpret it, or try to copy it all down since they expect to be tested on it.
- Textbooks and their supplemental materials are often useful outlines of what should be known and help teachers to structure learning over time. However, they are bloated, too expensive, and usually written for a different audience than "my class."
- Teaching in an information-rich and technology-rich environment is quite different than the textbook/lecture strategy, **BUT IT IS THE ONLY HOPE IF ALL STUDENTS ARE GOING TO BE GIVEN AN EQUAL SHAKE.**

We propose that each of the three major information environments be recognized by the major instructional designers in education and that teachers be trained to operate in each of these different worlds. Teachers should be taught to recognize the shift in information and technology environments and gain a repertoire of teaching and learning strategies that work best in each. This is no different than the flexibility we expect teachers to master as they confront different learning styles, different student sophistication levels, and the myriad rules and regulations for handling all types of students in an educational organization. It is another dimension to their flexibility, but it is an important one.

But isn't an information-rich and technology-rich environment expensive?

Yes. But compared to the expenditures every year on textbooks, it is very reasonable. Currently, spending for library materials and databases around the U.S. average around \$20 per student per year with states like California averaging about \$1.00 and others spending upwards of \$30.00 Expenditures on technology hardware vary widely from state to state and district to district. Initially, spending for technology was substantial, but as time has passed and budgets have shrunk, many districts have cut back dramatically. It is certain that many administrators often budget for hardware and educational software, but skimp on the information to go on the wires. Thus, librarians and technology specialists struggle to provide as much quality information as they can with limited funds.

Quality collections of materials can be maintained under \$25 a year per student. What a bargain! For the price of a single hardback book in a typical bookstore, students are beginning to taste a quality information system. We often give librarians the guideline that one book a year per student will maintain a collection, but the price of two books per year will be needed to keep collections of print, multimedia, and digital collections fresh. If we were to provide equitable spending for textbooks and the information system we are describing, spending for library budgets would have to quadruple in most districts and be increased a hundred fold in a state like California (more about this when we discuss our vision of the future).

More and more information—particularly databases and online periodicals—require schools to treat information as a utility. That is, if the bill is not paid, access to the database is cut off. School districts are going to have to learn that paying the information bill is akin to paying the electric bill. No power, no school. No information, no school. To turn off both is to retreat quickly into the 19th century—hardly a place where we'd like our 21st century children, who are supposed to be the best and brightest in the world, to be educated.

But even if we fund the information-rich environment, aren't kids lost in such a vast space?

Admittedly, students can surf, fiddle, and waste a great deal of time paddling around in information space so that in a normal hour of research they would not really get anything done except wandering.

The librarians of the nation have come up with a model to help students and teachers navigate a broad information space. Their strategy is to teach information literature and advocate that students who use the real world of information should be information literate. Information literacy is defined not only as finding information, but also as evaluating it very carefully before using it to build knowledge or do a task. Whereas librarians traditionally concentrated on helping patrons find information, their task has now switched to helping patrons judge, analyze, and use information.

We can all probably remember the days when we were doing research in the library and used the *Reader's Guide to Periodical Literature* to help us find magazines. We would laboriously copy out 20 citations, take them to the magazine room, and hope to find at least one that we could cite. Today, we type in a search term and are overwhelmed with information on our topic. It requires information literature skills to know what to use and whether it is worth using at all.

Librarians often teach the research process adapted from the scientific method. Figure 3 below is a generic model of the process librarians teach as students confront a problem in an information-rich environment.

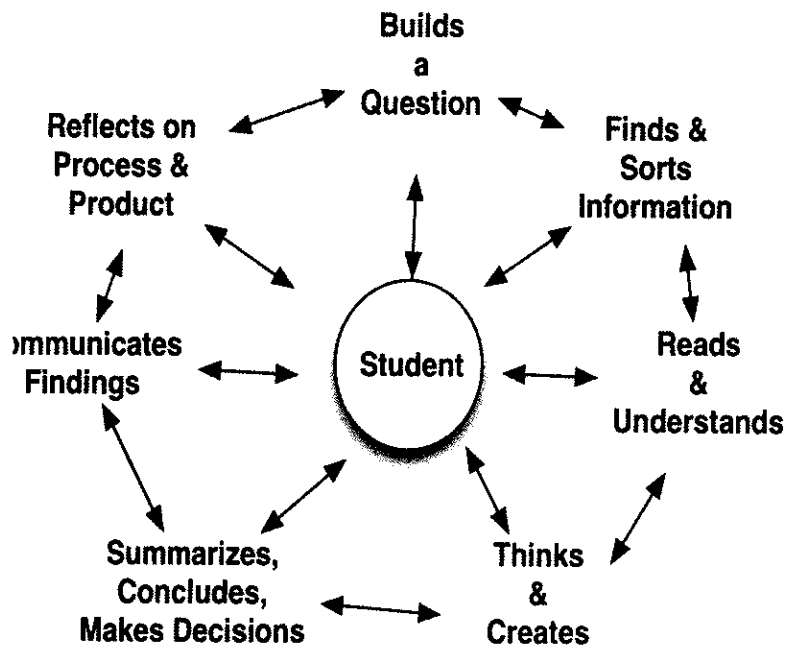


Figure 3: The information literacy process.

If you ask any librarian about information literacy and what they are trying to accomplish above and beyond the old library skills (of learning the Dewey Decimal System and reading catalog cards), expect an earful.

Enough of that! What are the 15 models for teaching and learning that are spoken about in the title of the book?

We created 15 models to teach and learn when information abounds based on our long experience with learners and study of many research reports spanning education, library science, and technology. They are presented in the appendix to this chapter.

We divided these models into three categories:

1. Appetizers
2. The Main Course
3. Dessert

Appetizers are fairly simple models and can be used easily within many other teaching strategies. The main course models might be the entire structure of a total learning experience. Dessert challenges the teacher to use all the models creatively as the occasion presents itself.

The models do not work well in an information-poor environment but are structured in such a way that students will have lots of choices in information, multimedia, and human resources.

Here are our assumptions about the models as a whole:

- The models do not ask teachers to discard any effective teaching technique that already works.
- Each model requires the student not just to cut, clip, or extract information from a wide variety of sources, but to use higher-level thinking strategies to accomplish the learning objective.
- The models demand that information and technology gurus (often known as librarians and technology specialists) collaborate with the teacher in designing learning.
- The models require every “bird unit” to be redesigned. Redesign is often a simple but very important tweak.
- The models require every school give more than lip service to the creation of a high-quality information system usually known as the library—but a library of very different proportions to the old one that stored a few tattered volumes and was visited once a week for a story and a “library lesson.” Such new libraries cost a substantial amount of money and not only have print materials, but also have the digital school library system that is available 24 hours a day, seven days a week from anywhere in the world a student happens to be.
- The models assume that the librarian and/or the technology specialist do more than just keep the wires or sort the books. They are either willing to participate in designing quality learning experiences, or their jobs are shifted to another spot in education.
- Not all learning experiences need to take place in an information-rich environment. It is quite appropriate to rely totally on a teacher’s experience or totally on a textbook/lecture format at times, but never as a steady diet. Variety is the spice of education and will likely lift boredom and increase motivation as expectations for learning are raised.
- Just because the information environment expands, the time for teaching a topic need not expand. It may, as students get immersed in a fascinating learning experience, but not always.

- None of the models are mandated in their exact form. Rather, they should be used with other creative ideas and judged on their impact on the amount learned in the time available.
- None of the models cast the total burden for teaching on a single individual, but presume that both the teacher and partner specialists be in the saddle to cut the teacher/pupil ratio at least in half. The notion is that two heads are better than one. All models presume collaborative planning, team teaching and joint assessment of the learning.

Perhaps a few examples would help here.

As you scan the list of models below in table 2 and read the tweaks suggested, you might catch a brief glimpse of what we are talking about.

Table 2: Examples of Higher Level Bird Units

Model	Sample approaches for information-rich environments
APPETIZERS	
1. Background to Question Model	Birding with digital cameras. Examine feathers under a microscope. Visit a bird sanctuary, museum, or art gallery.
2. Sensemaking Model	Research migration and create visual maps, charts, or graphs. Discover things that birds can do that are replicated in technology, and create a visual display (e.g. beaks-nutcracker or straw, claws-hooks or vice grip).
3. Read, View, Listen Model	Explore books, videos, or websites to discover: What are birds used for? What uses are harmful? What do legends and myths tell us about birds in different cultures? Read stories having a wise old owl character and discover the common characteristics.
4. Advice to Action Model	Consult expert advice on how to attract birds to the schoolyard and your own backyard.
5. Compare & Contrast Model	Research and compare: swamp birds and desert birds, nocturnal birds and diurnal birds, woodpeckers and hummingbirds, two birds with webbed feet such as a Canada goose and a puffin..., the structure and function of wings of birds and airplanes, or pigeons around the world.

THE MAIN COURSE	
6. Concept Jigsaw Model	How has art been influenced by birds? Examine painting, sculpture, plays, ballet, music, movies, or poetry.
7. Problems/ Possibilities Jigsaw Puzzle Model	Which birds are threatened or endangered? How can we protect them?
8. Matrix Model	Are all oviparous animals birds?
9. Timeline Model	Explore the evolution of birds. Document the history of ornithology. Hatch eggs in the classroom and document the process. Show location of a migratory bird, such as a hummingbird, during the period of a year.
10. History & Mystery Model	'Winged Man" How were early flying machines influenced by birds?
11. Take a Position Model	Do we need an international agreement to conserve and manage bird populations?
12. Recreate Model	Role-play waterfowl migrating from their nesting habitat in the far North to their wintering grounds in the South.
13. Re-invent a Better Way Model	Build a birdhouse or birdbath, paper airplane, or a peanut birdfeeder that squirrels can't eat from.
14. The Quest	Do a major study of birds whether in the form of an I-Search Paper, a formal research paper, a major WebQuest, or other sizeable research project.
DESSERT	
15. Mix It Up	Combine any of the models above creatively

What are the techniques that would help teachers the most in applying these models?

In many instances, the tweaks applied to create higher-level learning experiences are not just the groupings or structure of the model but the ability to ask good questions. A good question will be interesting and relevant to the students and will sustain that interest or curiosity throughout the learning experience. This is critical, since all the models will require the students to think harder and do more work than they would during a passive unit. A good question will not be able to be answered by cutting and clippings answers from an information source. A student will not be able to find their work already done for them from some website or reference book. The question will cause them to combine various information sources, think about the information, and build a fresh perspective,

idea, or reject everything they have encountered and be truly creative. For ideas on how to build better questions consult Jamie McKenzie's work at <http://www.fno.org/sept96/questions.html>

A second technique that will boost the likelihood of success is the teaching of group dynamics during the unit. All the 15 models can begin with individuals, but invariably end up in some kind of grouping as information is pooled, analyzed, and synthesized. Since teams or groups are so common in our workforce in laboratories, commercial enterprises, or many organizational structures, teaching group skills is a life skill that may as well be mastered early.

But are the models based on research?

It is true that the development of the models rests squarely on a body of professional experience. The authors have a combined experience of over 75 years in the United States and Canada. Together they have worked with teachers at all grade levels and in all disciplines; they have worked with librarians and technology directors across the continent; and they have spoken to educators at professional conferences and workshops in every province of Canada and in almost every state of the U.S.

But beyond that experience comes the support of research studies across the field of education. One of the authors conducted an extensive review of the literature of information literacy across the world⁴. All the models are based in research reviews done by Robert J. Marzano,⁵ and others in the Understanding by Design movement.⁶ We have also used reviews of research in technology⁷ and reviews of reading research done by Krashen and McQuillan.⁸ The work here has been affected by much of the literature in higher-level thinking, creativity, and the work in inquiry and constructivist education.⁹ This is true because the best ideas in education today link into an information-rich environment.

4 Loertscher, David V. and Blanche Woolls. *Information Literacy: a Review of the Research*. 2nd ed. Hi Willow Research & Publishing, 2002.

5 Our favorite works of Robert Marzano include his *What Works Series* published by ASCD. Individual titles are listed in the resources section at the end of this book.

6 Wiggins & McTigue. *Understanding By Design*. ASCD, 1999. And *Understanding By Design Handbook*. ASCD, 2004.

7 Center for Applied Research in Educational Technology (CARET) at: <http://caret.iste.org/>

8 Krashen, Stephen. *The Power of Reading*. 2nd ed. Libraries Unlimited, 2004.

9 See our list of favorite titles in the resources section at the end of the book.

Much of the skills-based approach to education is not a part of our foundation because the best of those techniques work better in a predominantly closed information system. We don't see that the practice of math facts—whether in the dirt with a stick, on the chalkboard, using a set of flash cards, or being presented with problems on the computer—is any different. The information space is equally narrow and appropriate for drill and practice. It makes little difference whether early learning of the piano is done on a \$20,000 Steinway grand piano or on a \$30 electronic keyboard. Thus, we have not been impressed with the body of technology research that has tried to compare learning the same facts, operations, or ideas via computer, written text, oral lecture, or any other comparative medium. Those studies have generally come out with “no significant differences” and we have not been surprised. It is not so important that technology delivers the same information that is in a book or a magazine; it is the fact that technology can deliver information in a myriad of different ways, in different sophistication levels, in varying genres, and with differentiation as its key strength. We do admire the efforts of a number of national organizations to promote technology in ways that truly enhance learning.¹⁰

If you authors had your wish, what would a likely scenario be for education in an information-rich and technology-rich environment?

Since you asked, here is a picture of a restructured school that we think would work.

1. Start with an information ticket. For every day a student is in school, the federal government would supply a \$5.00 information ticket. Thus, if a student moved from school to school, the current school would claim the money. If a child were home schooled, a public library or a school that agreed to provide the information support might claim the ticket. In no case would a single commercial entity be allowed to claim the information ticket (although they would be happy to do so).
 - a. A \$5.00 bill per day would pay for the following information services:
 - i. \$2.00 - All textbooks and accompanying consumables selected locally.
 - ii. \$1.00 - A library, both print and digital, including online databases, groups of carefully selected web sites, and multimedia selected locally. The digital portion would be available 24/7 and from any location worldwide.

¹⁰ Our favorites include: the Partnership for 21st Century Skills at <http://21stcenturyskills.org/>; The George Lucas Educational Foundation (GLEF) that publishes Edutopia at <http://www.glef.org/>; The various standards documents published by the International Society for Technology in Education (ISTE) at <http://www.iste.org/> and the enGauge 21st Century Skills project at <http://www.ncrel.org/engage/skills/skills.htm>

- iii. \$2.00 - A connection device (perhaps a cross between a PDA and a notebook computer and one that would last two years and then exchanged for an upgraded model).

The ticket would not pay for additional equipment, the wireless network system itself, or the salaries of the persons administering the system. In other words, like a utility such as gas or electric, the information system would be a basic component of the education system rather than an add-on as at present. Benevolent funding has never worked and never will.

2. Create an educational pod of four teachers and their normal quota of students. This group of four would have the following structure
 - a. A knowledge team leader qualified as an information/technology/curriculum/instructional designer
 - b. Three regularly-credentialed teachers

Such a team could be generalists, as elementary teachers are, and would have the same children for several years. Or, the team could be four specialists such as social studies, science, math, or fine arts, and students would rotate among the various pods of specialists.

The focus would be on the knowledge team leader who would spend approximately half the day in planning and assessment and half the day teaming with one or the entire group on educational units.

The knowledge team leader would have the following qualifications and training:

- a. Credentials as a master teacher before being allowed to apply for the job.
- b. Advanced coursework in instructional and curriculum design.
- c. Competence in information—selection, acquisition, use, and the teaching of information literacy from library and information science.
- d. Expertise in the use of technology as an educational tool
- e. Management and leadership competencies.

In Summary

We can't help but agree with the Committee on Developments in the Science of Learning in their expanded edition of *How People Learn*:¹¹

¹¹ *How People Learn: Brain, Mind, Experience, and School. Expanded Edition.* National Academic Press, 2004 Created by the Committee on Developments in the Science of Learning, Commission on Behavioral and Social Sciences and Education, National Research Council.

More than ever, the sheer magnitude of human knowledge renders its coverage by education as an impossibility; rather, the goal of education is better conceived as helping students develop the intellectual tools and learning strategies needed to acquire the knowledge that allows people to think productively about history, science and technology, social phenomena, mathematics and the arts. Fundamental understanding about subjects including how to frame and ask meaningful questions about various subject areas, contributes to individuals' more basic understanding of basic principles learning that can assist them in becoming self-sustaining life-long learners (p.5).

We believe that the models in this book provide effective strategies for teaching and learning in an information-rich environment rather than being crushed by information overload. Feedback to the authors is appreciated and can be addressed to David V. Loertscher at davidl@slis.sjsu.edu

A Few Notes for Librarians

Rivaling the "heartbreak of psoriasis" is the amassing of books, digital information, and multimedia and then having few customers. For half a century, school librarians have begged, cajoled, and smooth-talked monies to build resources for teaching and learning. And national standards have placed collaborative teaching and learning as a top priority in boosting achievement. The potential to contribute to teaching and learning has never been greater.

As the authors travel about North America, the number one complaint we hear from school librarians is that teachers are either unwilling or too busy to collaborate. And when they do, the "bird unit" ideas predominate. Our message in a world interested only in the bottom line of scores has been that the time has come to "strut our stuff."

Teaching and learning in an information-rich and technology-rich environment holds a great deal of promise because this environment is the real world of the 21st century. Armed with that knowledge, the authors have created models to replace the annoying and low-level library activities that are all too commonplace across the continent.

It is one thing to ban bird units from the library; it is quite another to have exciting alternatives that truly boost understanding and achievement. Teachers often avoid libraries because of time constraints, but they also fear that time spent doing research or encountering anything except what is tested will negatively affect scores. Furthermore, many librarians find that the time they have to collaborate is being cut as clerical help diminishes or as jobs are cut from full to part time.

The concern of administrators to economize by eliminating professional librarians but keeping the library open through clericals or volunteers presumes that access alone makes the difference. "If we just keep the computers plugged in, the books on the shelf, and the door open, it is sufficient." If this reasoning were used for the management of the

principal's office or the classroom, where would the school be? The professionals in the library play as significant a role as principals and teachers.

The authors are often asked which is better: "to have a teacher bring a class to the library doing low-level learning activities or not come at all?" We recommend the latter as shocking as that may seem. Our advice to every librarian is to link arms with principals and forward-thinking teachers in a resolve to maximize the contribution that the library makes to achievement. There is no time to allow nonsense or vacation time in the library. Librarians cannot claim a contribution to teaching and learning unless literacy and understanding are being built day in and day out.

The models presented in this book are, in reality, tweaks to good teaching practices. Their message is not that everything done previously is wrong and that our models are the only right way. Rather, they are that little extra boost that can push a learning activity to successful completion—to win the race, not merely participate in it. Experience with the models indicates that librarians go through two stages: first, the slavish application of a particular model to build repertoire. Second, librarians become creative at combining parts of models as they watch and gauge student learning, motivation, and excitement for the library.

It is impossible to improve or fine-tune "the dreaded worksheet" exercise. Copying facts from one location to another and passing them in or merely regurgitating them is counterproductive no matter how it is framed or implemented. It matters not whether the fact has been copied with a pencil or cut and pasted by computer. It is all the same nonsense.

For doubters, we recommend viewing the video "We are Information Literate!" available from LMC Source at <http://www.lmcsource.com>. When first graders experience high-level learning experiences and then are interviewed as fifth graders, what differences can a single learning experience replicated at each grade level make? As authors, we are convinced that given whatever time the librarian has to collaborate, it is more important to do a few model learning experiences than many mediocre ones.

Because excellence is its own reward, the challenge of experimenting, creating, honing, tweaking, and elevating learning experiences in libraries is worth accepting. And, it's all part of earning our keep and perhaps an extreme makeover of what libraries contribute to learning.¹²

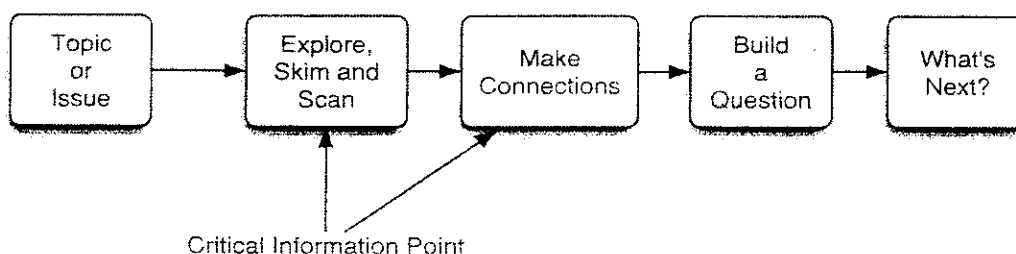
David Loertscher is a professor of Library and Information Science in the College of Applied Sciences and Arts at San Jose State University. He is an editor for *Teacher Librarian*, a past president of the American Association of School Librarians, and an international consultant.

¹² See: Loertscher, David V. "Extreme Makeover." *School Library Journal*, November, 2004.

APPENDIX: THE FIFTEEN THINK MODELS

Background to Question Model

Curriculum Topic and Objectives	Background Building Activity <ul style="list-style-type: none"> • Read • View • Listen • Survey • More is better 	Connect New and Old Learning	Build a Question <ul style="list-style-type: none"> • Narrow and focus a topic • Build a quest 	Plan a Project <ul style="list-style-type: none"> • Goals • Timeline • Resources • Strategies
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Why This Model?

- Compensate for uneven prior knowledge
- Use when prior knowledge is skimpy
- Help learners build engaging questions when they seem to lack interest
- Provide an opportunity for a "topic to select a learner"
- Use when the textbook is insufficient
- Help learners narrow a topic when struggling with generalities
- Turn a library orientation into an exploration

Possible Topics:

- Environmental issues
 - Genetics
 - Health and safety issues
- Political ideologies
 - Types of music
- Science fair projects
- Pet care and needs
- Media influence on behavior
 - Marine biology
 - Rain forests
 - Middle Ages
 - Middle East
 - Early settlers
 - Ecosystems

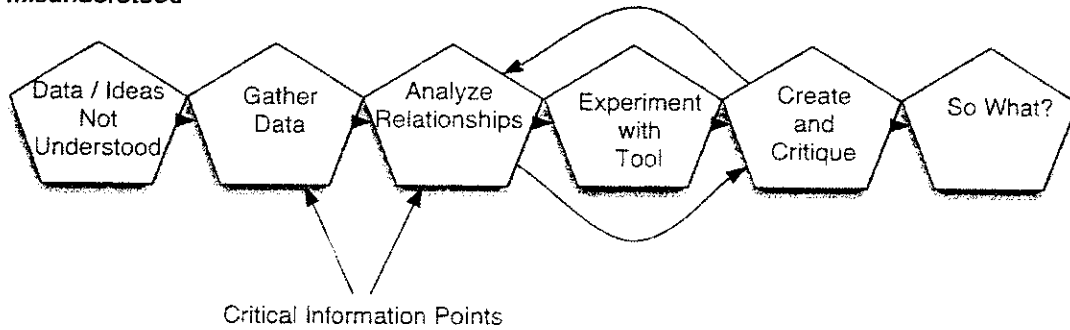
Critical Information Literacy Skills*

- Explore a Topic, K&Z, p. 4
- Search Strategies, K&Z p. 24
- Locate Resources, K&Z p. 26
- Select Relevant Data, K&Z p. 62
- Skim, Scan, Consider, K&Z, p. 32
- Make Connections, K&Z p. 116
- Reflect, Transfer, Apply, K&Z p. 166
- Develop Questions, K&Z p. 12
- Define a Research Topic, K&Z p. 8

* Koechlin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Hi Willow, 2003

Sensemaking Model Visualizing / Re-Conceptualizing

<p>Concepts, ideas, or data either not understood or misunderstood</p>	<p>Collect & validate data</p>	<p>Find Connections:</p> <ul style="list-style-type: none"> • Sort • Classify • Patterns • Missing Data? 	<p>Use Graphic Tools to Assist In Visualization</p>	<p>Create</p> <ul style="list-style-type: none"> • Re-Work • Re-Think 	<p>Share and Defend New Understanding</p>
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Why Use This Model?

- Take advantage of the adage that a picture is worth a thousand words
- Take advantage of learners who have high visualization abilities
- Add one more dimension to text and explanations
- Use when data cannot be understood in their raw form
- Try several visualizations of the same ideas
- Particularly useful for concepts where misconceptions abound

Possible Topics:

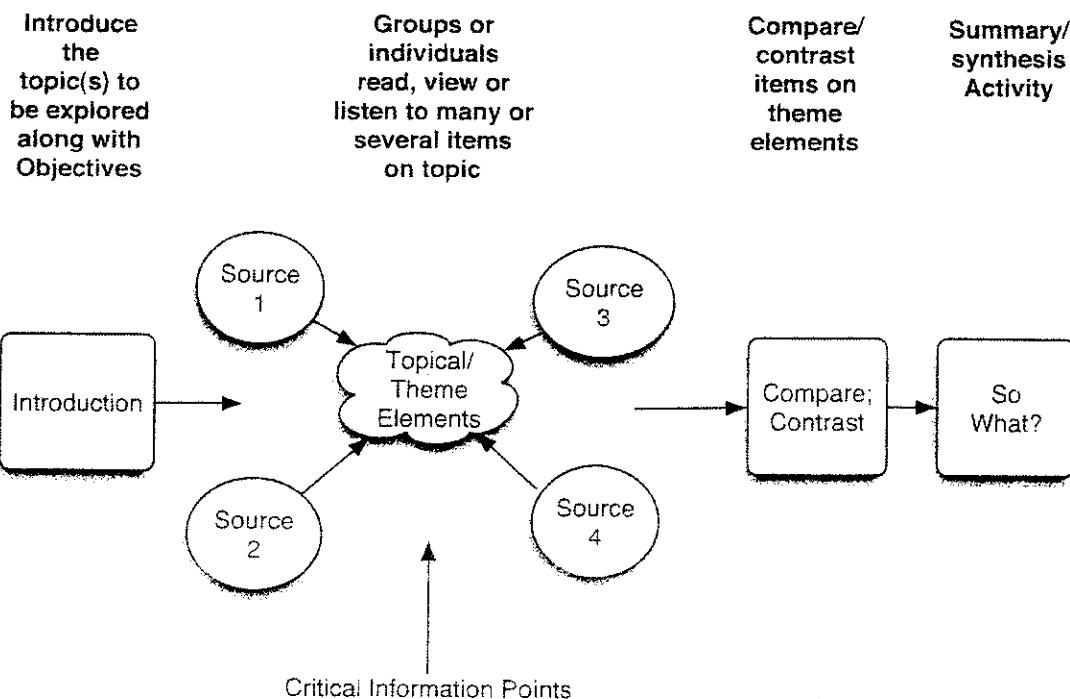
- Popular misconceptions
- Data in any discipline
- Large amounts of data
 - Population patterns
 - All types of maps
- Ideas and their connections
 - Cause / Effect
- Environmental / social issues
 - Difficult concepts

Critical Information Literacy Skills*

- Evaluate Resources. K&Z p.34
- Use Organizers, K&Z p. 90
- Sort, K&Z p. 94
- Compare, K&Z p. 98
- Classify. K&Z p. 102

* Koechlin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Hi Willow, 2003.

The Read, View, Listen Model



Why Use This Model?

- Experience many literary/ written works rather than a single text
- Allow all skill levels to concentrate on the theme rather than the difficulty of the text
- Concept map the big ideas across texts
- See big picture across cultures, authors, governments, time periods, ideas
- When you can't afford a textbook but have a library

Possible Topics:

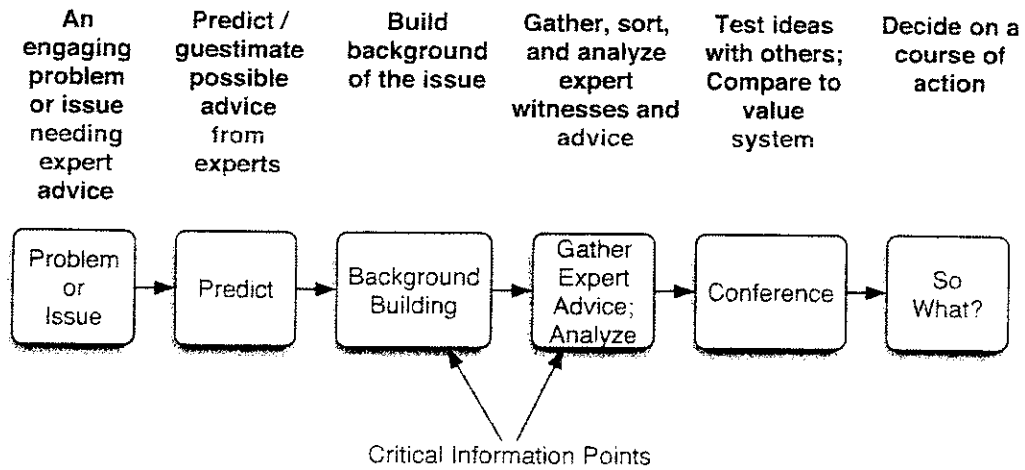
- Literary themes across books
- Similar literary themes across cultures
- Causes of wars across combatants
- News reporting across international newspapers & TV
- Teen angst across teen novels
- Comparison of cultures around the world at the same time period
- Lives of rich and poor - same time, same locale

Critical Information Literacy Skills*

- Pre-Reading Strategies, K&Z p. 52
- Skim, Scan, and Consider, K&Z p. 32
- Actively Read, View and Listen, K&Z p. 56
- Read Pictures, K&Z p. 70
- Compare, K&Z p. 98

*Koechlin, Carol and Sand: Zwaan. *Build Your Own Information Literate school*. H. Willow: 2003

Advice to Action Model



Why This Model?

- To solve real problems
- Judge between good and poor advice
- Affect behavior: judging the difference between personal wishes and prudence
- Understanding the consequences of taking advice
- To understand how historical events were shaped by advice both good and poor
- Making life-saving decisions

Possible Topics:

- Healthy lifestyles
- Selecting a college or career
- Succeeding in school
- Preventing, controlling forest fires
 - Urban sprawl
- Safe drinking water
- Vending machines in schools
- School fundraising initiatives
- School safety issues
- Helping the homeless

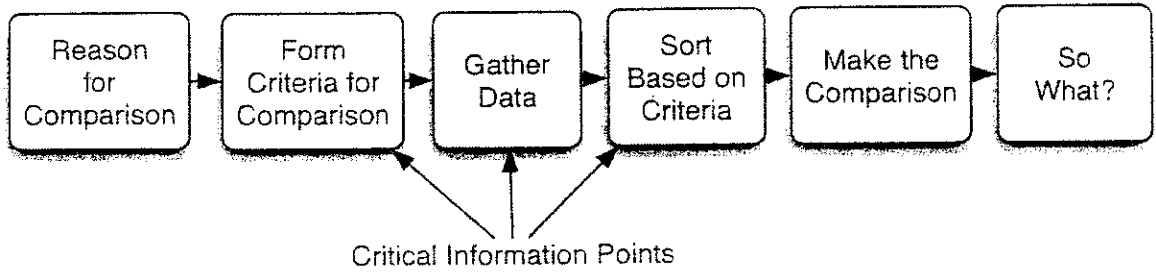
Critical Information Literacy Skills:

- Use Primary Sources, K&Z p. 46
- Evaluate Resources, K&Z p. 34
- Interpret, Infer, Predict, K&Z p. 130
- Understanding Perspective, K&Z p. 136
- Cause and Effect, K&Z p. 120

* Koechlin, Carol and Sandi Zwaar. *Build Your Own Information Literate School*. Hi Willow, 2003

Compare and Contrast Model

Identify purpose and items to be compared	Brainstorm and select the criteria for comparison	Use quality information sources; Gather data	Do the sort with tech assists if needed	Analyze the result	See the big picture
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Why Use This Model?

- A much-researched and powerful teaching technique
- Stress quality information to achieve an accurate comparison
- Teaches reason over subjectivity
- Requires tough thinking
- Becomes the basis of many other teaching techniques with large or small data sets, facts, or ideas

Possible Topics:

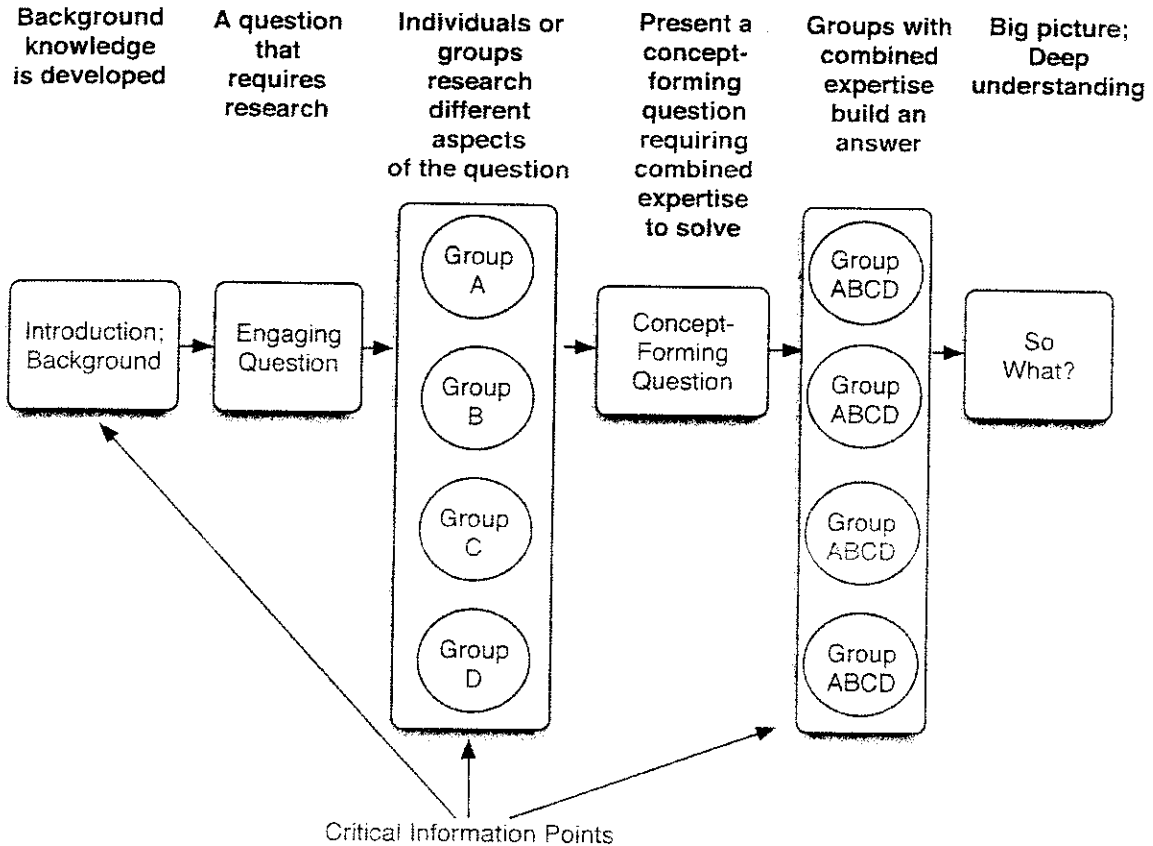
- Ideas
- Events
- Persons
- Cultures
- Governments
- Life skills
- Seasons
- Animals
- Plants
- Music
- Literature

Critical Information Literacy Skills*

- Use Primary Sources, K&Z p.46
- Evaluate Resources, K&Z, p. 34
- Note Making, K&Z p. 76
- Sort, K&Z p. 94
- Compare, K&Z p.98
- Synthesize, K&Z p. 145

*Koechiin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Hi Willow, 2003.

The Concept Jigsaw Puzzle Model



Why This Model?

- To develop deep understanding rather than surface knowledge
- To develop group skills
- Two heads are better than one
- A prototype of the real world of business and industry
- To stimulate each learner into making a contribution
- Use to introduce lots of material quickly

Possible Topics:

- Persons
- Places
- Things
- Events
- Ideas
- Movements

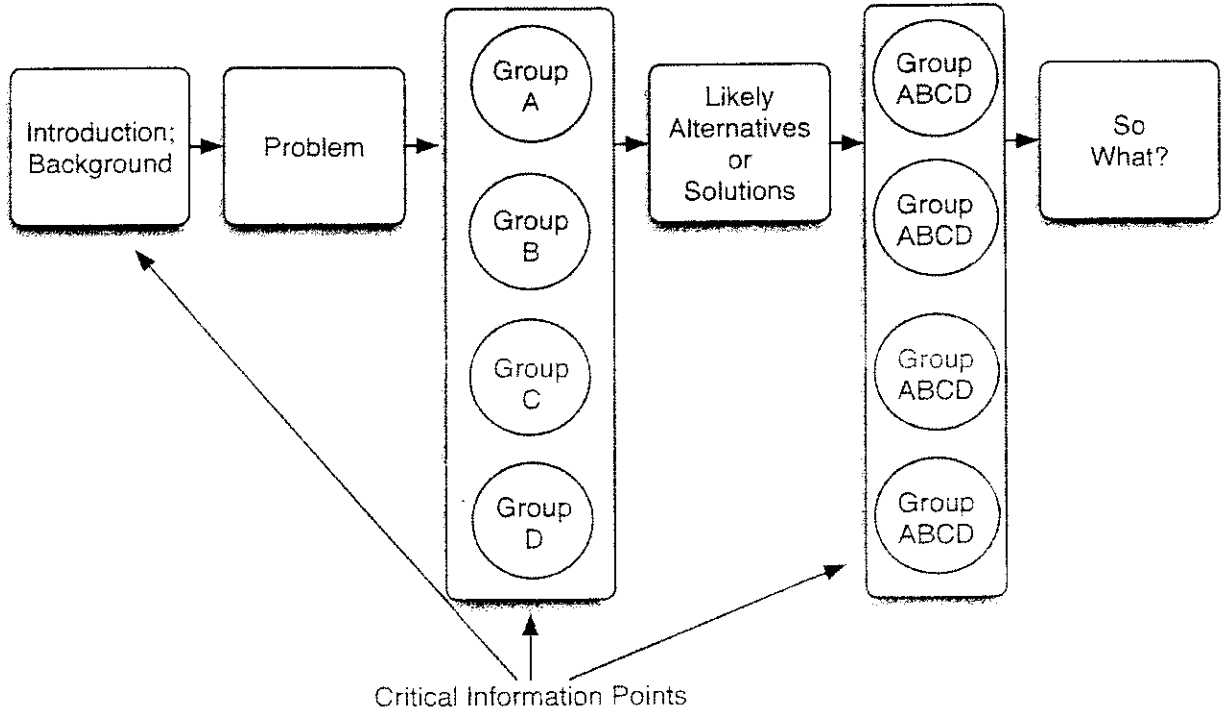
Critical Information Literacy Skills*

- Explore a Topic, K&Z p. 4
- Develop Questions, K&Z p. 12
- Locate Resources, K&Z p. 28
- Evaluate Resources, K&Z p. 34
- Collaborate, K&Z p. 140

* Koechlin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Hi Willow, 2003

The Problems/Possibilities Jigsaw Puzzle Model

Background knowledge is developed An engaging problem requires research Individuals or groups research different aspects of the problem Issue a challenge to find solutions Expert groups combine knowledge to build solutions Big Picture; Alternatives; Solution



Why This Model?

- To learn real-world problem-solving skills
- Build group problem-solving skills
- A prototype of the real world of business and industry
- To stimulate each learner into making a contribution
- To encourage investigation, determination, and perseverance

Possible Topics:

- Problems encountered at home, school, community, or nation
- Society problems such as poverty or health care
- Real problems created from learning experiences or projects

Critical Information Literacy Skills*

- Select Relevant Data. K&Z p. 54
- Note Making. K&Z p. 76
- Collaborate. K&Z p. 140
- Make Connections. K&Z p.116
- Synthesize. K&Z p. 145

* Koechlin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Ft. Willow, 2003

The Matrix Model

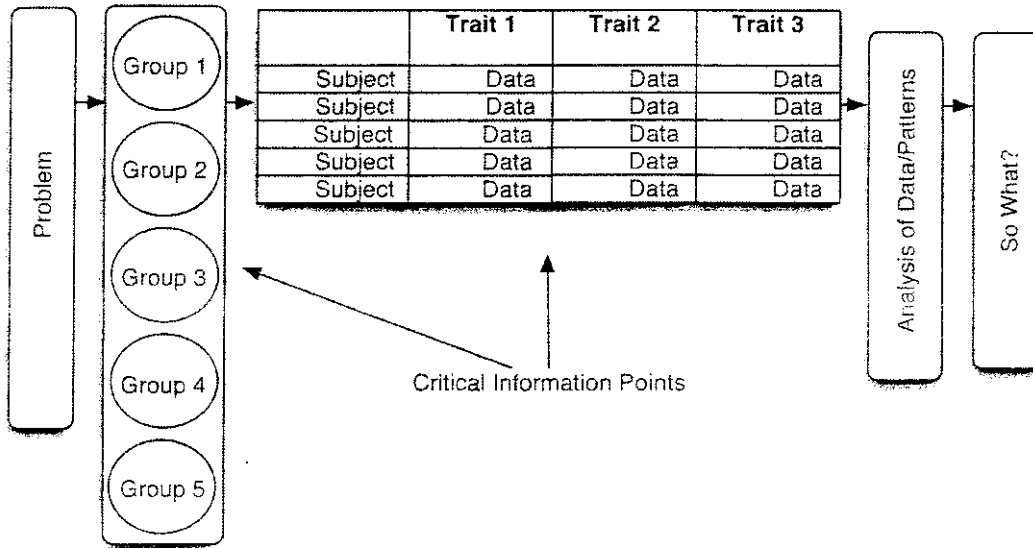
An engaging problem is created requiring data across subjects

Each group studies a subject to supply data on each trait

Place data on a large matrix or spreadsheet for comparison

Data are analyzed, contrasted, computed

The Answer/ Decision/ Conclusions



Why This Model?

- To promote accurate data gathering
- Organizing data for better decisionmaking or understanding
- Facilitating a look at patterns and trends
- Seeing the dangers of bad data in any cell
- Teaching complex issues: solving complex problems

determination, and
perseverance

Possible Topics:

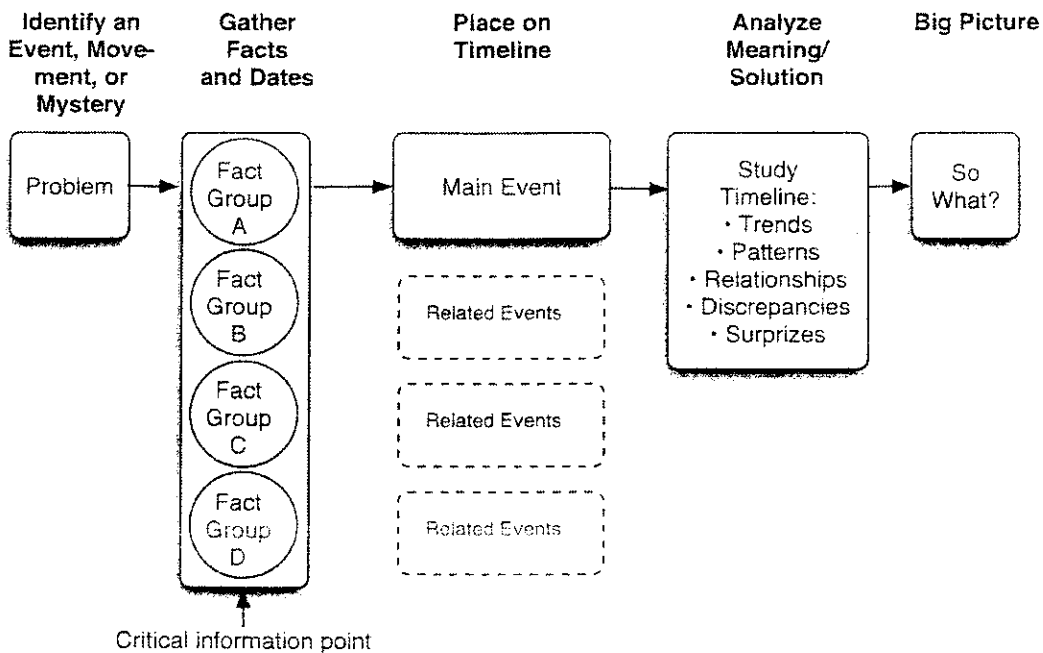
- Pick a pet for the classroom
- Are there weapons of mass destruction?
- Comparison of possible new highways
- Comparison of expert opinions about a topic
 - Comparison of candidates for office
- Comparing topics of interest

Critical Information Literacy Skills*

- Evaluate Resources, K&Z p. 34
- Select Relevant Data, K&Z p. 62
- Legal and Ethical Use of Information and Ideas, K&Z p. 82
- Share and Use, K&Z p. 156
- Reflect, Transfer and Apply, K&Z p. 166

* Keebolin, Carol and Sandi Zwisar, *Build Your Own Information Literate School*, Hi Willow, 2003

The Timeline Model



Why this Model?

- Show changes over time
- Determine why something developed the way it did
- Understand how inaccurate information will distort the analysis of sequencing
- Make comparisons of the past and the present
- Put some events in a larger perspective
- Trace the background to explore cause and effect
- Understand sequence
- Visualize sequential patterns

Possible Topics:

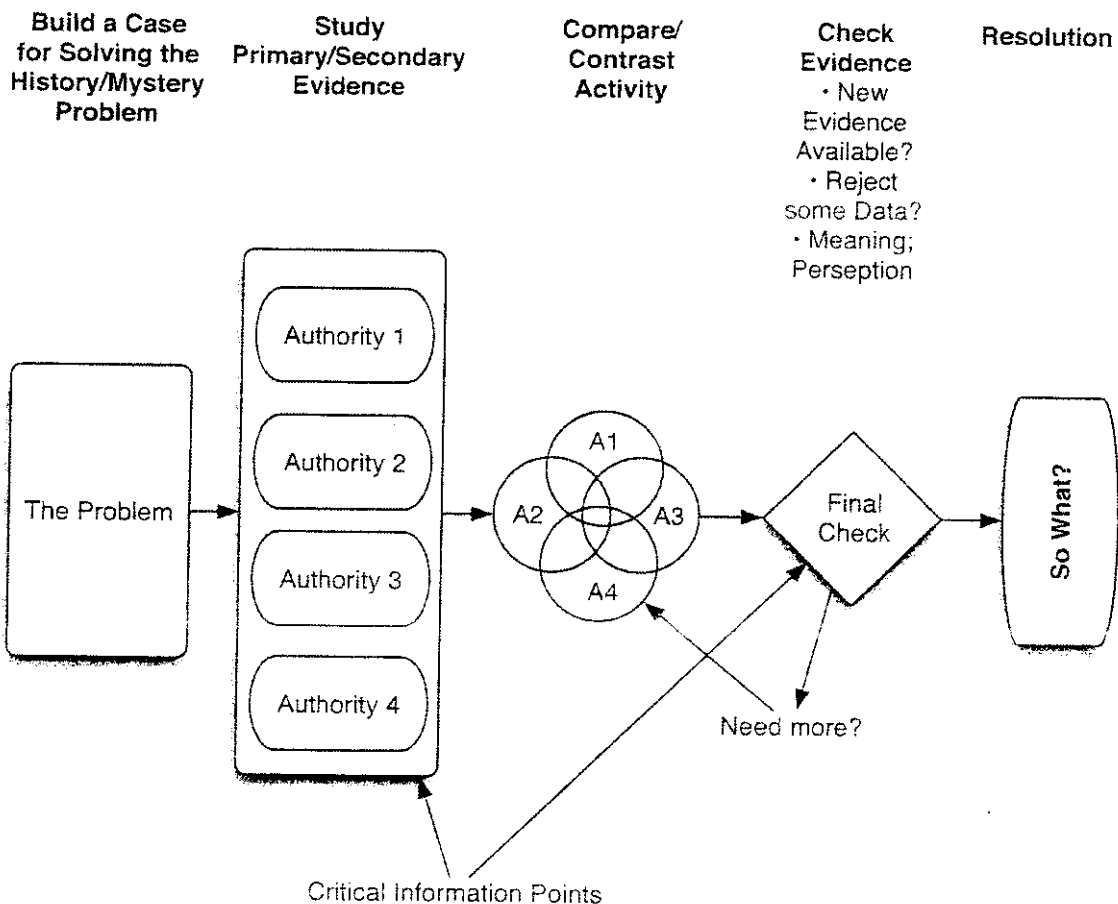
- Chart a political election
- Study a catastrophic event
- Compare various disciplines during a time period
- Reconstruct the events of a crime or event
- Chart the Middle East conflict
- Study the rise of terrorism as warfare
- Chart the plot of a novel or story
 - Study the structure of a symphony
- Put a period of art into its environment
- Study what made landing on the moon possible
- Chart the immigration of a family to the U.S.

Critical Information Literacy Skills*

- Actively Read, View & Listen. K&Z p. 56
- Select Relevant Data. K&Z p. 62
- Sort. K&Z p. 94
- Note Making. K&Z p. 76
- Identify and Investigate Patterns and Trends. K&Z p. 108

*Koechlin, Carol and Sandi Zwaag. *Build Your Own Information Literate School*. HI: Willow, 2003

History & Mystery Model



Why Use This Model?

- When, where, and what appears to have happened?
- What really happened?
- Why did it happen?
- What could have prevented it from happening?
- What can we learn based on what happened and why?

Possible Topics

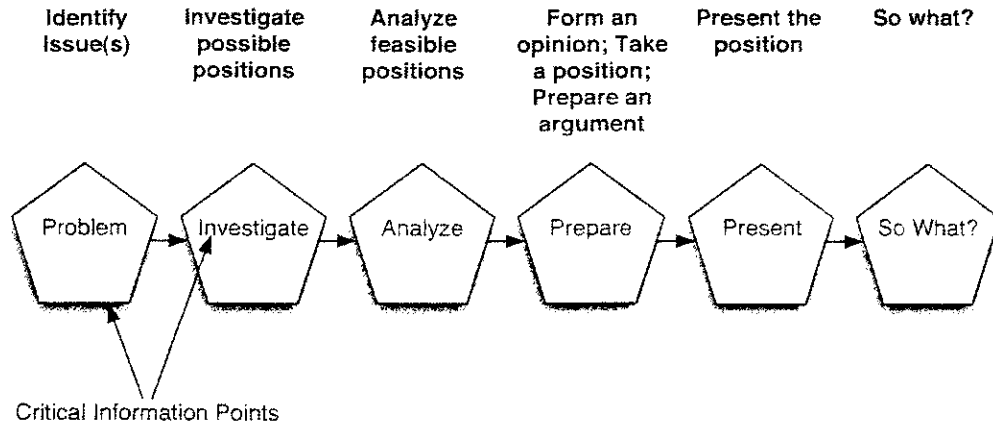
- Causes of war
- Change in government
- Natural catastrophes
- Advances in technology
- Influence of artists/ authors
- Development of art forms and genres

Critical Information Literacy Skills*

- Select Relevant Data, K&Z p. 62
- Sort, K&Z p. 94
- Determining Fact, K&Z p. 66
- Compare, K&Z p. 98
- Make Connections, K&Z p. 116

* Koechin, Carol and Sandi Zwaan. *Build Your Own Information Literate School!* Hi Willow. 2003.

Take a Position Model



Why This Model?

- Learn to take positions on sound ideas rather than on snap judgments
- Learn how to understand ideas much different than your own
- Develop critical analysis skills in the face of propaganda
- Build empathy for all positions, even as you take a stand
- Learn to articulate and defend a position taken
- Build the skills for living and participating in a democratic society

Sample Topics

- Political issues
- Controversial science problems
 - Historical issues
 - Moral issues
- Community problems
 - School problems
- Literary critical issues

Sample Products:

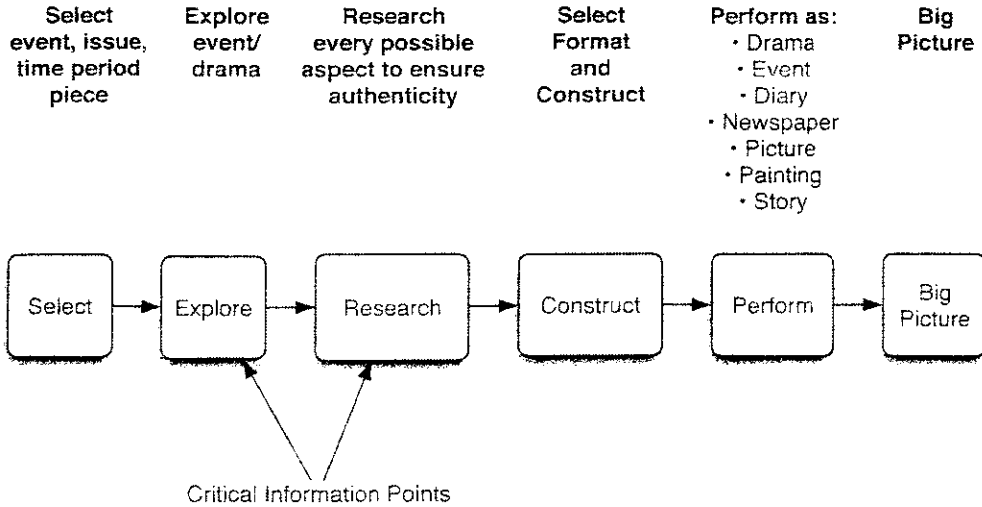
- Position paper
- Persuasive speech
- Video presentation
- PowerPoint presentation
 - Debate
 - Panel discussion
- Switch positions, then present
 - Action plan

Critical Information Literacy Skills*

- Actively Read, View, and Listen, K&Z p. 45
- Select Relevant Data, K&Z p. 62
- Determine Fact, K&Z p. 66
- Understanding Perspective, K&Z p. 136
- Share and Use, K&Z p. 155

* Kuechlin, Carol and Sandi Zwaan: *Build Your Own Information Literate School*, H: Willow, 2003

The Re-Create Model



Why This Model?

- Why do things, seemingly strange, make sense in context?
- What kinds of persons contribute or distract while a major event is unfolding?
- What can we learn from the unfolding of major events?
- How does excellence in the reconstruction of an event help in the understanding of that event?
- Can we develop empathy for people in their time and place?
- Can we walk in someone else's shoes?
- So we judge the difference between fiction and realistic fiction.

Possible Topics:

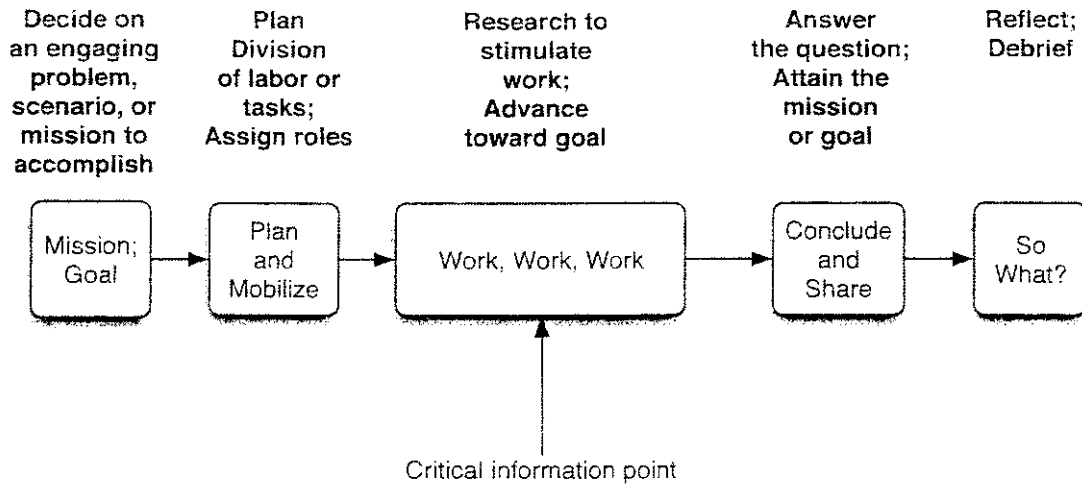
- Life in a place/time
 - Historical event
- Perform a play that requires authenticity
 - Pioneer life
 - Slavery
- Interview an historical personality

Critical Information Literacy Skills*

- Use Primary Sources. K&Z p. 46
- Read Pictures, K&Z p. 70
- Make Connections. K&Z p. 116
- Interpret, Infer, Predict. K&Z p. 130
- Respond to Text. K&Z p. 112
- Impact, K&Z p. 124

* Koechin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. HI Willow, 2003.

The Quest Model (The Well-Designed Research, Experiment, or Project)



Why Use this Model?

- Capture Realism; Build Expertise
- Build responsibility and independence
- Prepare for college or a profession
- Build a sense of achievement
- Capitalize on natural curiosities
- Make the curriculum relevant
- Develop deep understanding

Possible Projects:

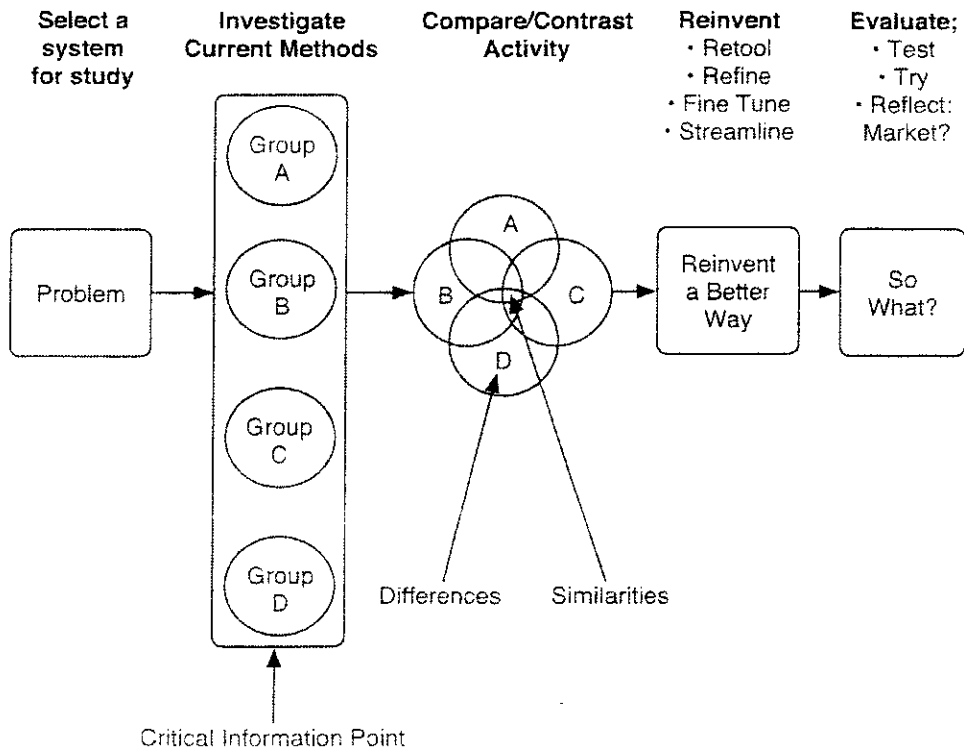
- Formal Research Paper
 - Web Quest
 - I-Search Paper
 - Simulation Game
- Scientific challenge/competition
 - Senior Paper
- Independent Study
 - Recital

Critical Information Literacy Skills*

- Define and Clarify, K&Z p. 1
- Locate and Retrieve, K&Z p. 23
- Select, Process, and Record Data, K&Z p. 51
- Analyze, K&Z p. 89
- Synthesize, K&Z p. 145
- Share and Use, K&Z p. 155
- Reflect, Transfer, and Apply, K&Z p. 165
- Adding It All Up, K&Z. p 173

* Koechlin, Carol and Sandi Zwaan. *Build Your Own Information Literate School*. Hi Willow 2005.

Reinventing a Better Way Model (Systems Analysis)



Why Use This Model?

- Much of our economy depends on efficiency
- Prepares for competitions (best ideas)
- Production and marketing plans and Patents
- Stimulates creativity
- Simulates authentic problems
- Builds group work skills
- Saves time, money, natural resources, and energy

Possible Topics:

- New ways to handle school problems
- Living within a family's means
- Ways to save money, time, and effort
- Create a labor-saving device
- Solving a pesky real-life problem

Critical Information Literacy Skills*

- Use Primary Sources, K&Z p. 46
- Make Connections, K&Z p. 116
- Use Organizers, K&Z p. 90
- Synthesize, K&Z p. 146
- Reflect, Transfer & Apply, K&Z p. 165

* Koechlin, Caro, and Sandi Zwaan. *Build Your Own: Information Literate School. Hi Willow. 2003.*

Mix It Up!

(Be Creative in Combining/Modifying All the Models)

Appetizers:

Background to Question Model
Sensemaking Model
Read, View, and Listen Model
Advice to Action Model
Compare and Contrast Model

The Main Course:

The Concept Jigsaw Puzzle Model
The Problems/Possibilities Jigsaw Puzzle Model
The Matrix Model
The Timeline Model
The History and Mystery Model
Take a Position Model
The Re-Create Model
The Reinventing a Better Way Model
The Quest Model

Examples:

- Do a Major Background to Question study before a Quest
 - Do a Matrix before having to Take a Position
 - Sensemake a problem before trying to Reinvent it
- Compare and Contrast as a History/Mystery Model unfolds
 - Begin with a Jigsaw and then culminate with a Matrix