



Presents

MINI-RESEARCH STRATEGIES & MODELS

Prevent Plagiarism & Develop Critical Thinking

- ***Mini-Research Activities Increase Student Achievement***
- ***Support the Mission of the 21st Century Librarian***

INCLUDES:

- LM_Net commentary on preventing of plagiarism vs. detection and punishment strategies
- The challenge to librarians of the Pew and N2H2 Study of student Internet use
- Doug Johnson strategies for Low Probability of Plagiarism (LPP)
- Mini-Research models and strategies curb plagiarism and develop writing and critical thinking
- Scientific-based research (SBR) supports the use of mini-research activities to increase student achievement

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Selected LM_Net Listserv Quotes on Positive Strategies for Preventing Plagiarism

The following quotes were selected from responses to the issue of **plagiarism on the LM_Net** librarian listserv. These responses emphasize **prevention and reform** as an alternative to **after-the-fact** Internet-based **forensic solutions** such as www.turnitin.com.

The **prevention philosophy** embodied in these comments also promotes **richer and more meaningful research activities** that result in **increased student achievement in reading, writing, and critical thinking**. ProQuest **mini-research strategies and models** integrate the prevention philosophy and **scientific-based research of the learning process** expressed by the comments of these librarians. More important, they enable teachers and students to use the power of technology combined with the natural curiosity of students to make research activities **easier, engaging, and more effective** as learning activities.

Implementing the prevention philosophy is an **opportunity for librarians** to help teachers to transition from **plagiarism susceptible topics** and then to create **new and more meaningful topics that require original thought**. These topics should be **less scholarly** and **more engaging** to students if their purpose is to **increase student achievement in essential 21st Century skills**. Teachers will **need training and models** for managing this new **mini-research process**. Librarians can use ProQuest resources to provide:

1. **models** that integrate technology effectively from searching to the finished report
2. **rubrics-based evaluation models** that focus on the research process, writing, and critical thinking
3. relevant resources collections that **save teachers and students valuable class time** in searching
4. **Lexile reading level support** in searching for materials appropriate for all student reading levels

Selected LM Net Librarian Comments



I think there are some important pieces of education/learning that are often missed during early teaching of research skills. Part is the 'on the shoulders of giants' concept that we do build, or at least work, from others' work. Part is that almost any writing will have some inherent POV or bias and that **part of the research process is to compare works to determine what those are**.

Part is that the research/writing cycle isn't a test of what you've learned, but is putting the student in charge and making them construct their own learning. And yes, sometimes we may, as librarians charged with the responsibility and trained in the skills needed, need to do some education about how that is taught. True story; Yesterday, during a 6th grade note-taking class, I pointed out that having one finger on the paragraph in the encyclopedia and rewriting the paragraph into the report while just changing a few words is basically the same as copying. Hand came up, **kid says her teacher last year said that was OK**. And other students had heard the same thing.....



It seems to me that if assignments were developed around "big" questions to be asked, such as "What examples of Ancient Egyptian influence do we find in modern society? What rationale can you give for these influences lasting to modern times?" Questions such as this require students to do research, but **there is no way they can plagiarize in their responding report/paper/thesis....**so I feel the way to help avoid plagiarism is to **work with classroom teachers BEFORE they make the assignment, encouraging higher order thinking research and response**.



But perhaps there is some place for debating why students find it necessary to plagiarize - that all-important grade/ score/ mark **that seems to be the only outcome of learning that is valued**.



While Jamie McKenzie, and many others, urge us that the "answer is in the question" - maybe we need to examine the fundamentals of setting assignments. **What are the lifelong learnings that we want our students to take away from having done a particular piece of work?** Should there be more than a letter or a numeral on a report card?



The reality, though, is that not everyone is yet in a position to be able to **collaborate with each teacher before assignments are set (from what I have read and know, some teachers trot out the same old, same old each year and would not be even willing to listen to suggestions for making it better.)** I can remember during library-school visiting a private school library where the librarian had the 'power' to have all assignments sent to her two weeks before they were set so she could vet them for resources, suitability and so forth and change them if required. **Not submitted? Not resourced! And the teacher got a blast and a half!**



I believe we need to create a mindset that has teachers asking themselves "**What lifelong learnings, skills, values, attitudes do I want my students to acquire by completing this task**" before they set the task, (and making this explicit to **the students**) and **students understanding that there is more in it for them than a grade on a piece of paper. We need to change the focus from the PRODUCT to the PROCESS and from a content-based curriculum to an outcomes-based one. We need to look at and articulate what our students can do rather than what they can remember.**



I have also given workshops entitled A is for Awful : F is for Fantastic to show how meaningless a grade is if the person using it to make judgments has no access to the learning that went with it. The **growing use of rubrics is changing things, so maybe there is a place for us to help teachers develop these too.** The site that I suggest people start with for these is <http://rubistar.4teachers.org/index.php> It's free and you can either use those that are already created or customize them to meet your needs.



Plagiarism is a major theme at our high school this year to the extent that every student (and their parents) had to sign an academic honesty code with clear examples of plagiarism and the possible consequences. I've been having all of the English classes come into the library for a "mock trial," in which they debate the guilt/innocence of various "defendants." The guilt offenses range from paraphrasing too closely to direct copying. The exercise is effective in getting students to think directly about **what is and what isn't plagiarism**, and helps to foster discussion. We also discuss **ways to avoid plagiarism**, and why it's wrong.



The plagiarism and No Child Left Behind discussions have been wonderfully stimulating. Just reading the education articles in the New York Times each week, you see how the whole **NCLB system is having interesting and unexpected effects on even top-rated schools.** If one group in the school tests badly, then the whole school is rated unacceptable. It's pretty scary to see, especially since **there don't seem to be too many resources forthcoming to help such schools.**



Re plagiarism: I recently pulled out my copy of Doug Johnson's new book, Learning Right from Wrong in the Digital Age: An Ethics Guide for Parents, Teachers, Librarians, and Others Who Care About Computer-Using Young People (Linworth, 03). (WHEW! That's a LONG title to type. After reading Doug's recent posts, I re-opened the book this morning and re-read chunks of it, and I so admire the way he's structured it, with real-

life scenarios and discussions on privacy, property, **appropriate use of technology**, and ethical behaviors. He's covered so many bases, and includes loads of references & resources.



≡ **Before computers**, wasn't copying out of books not allowed? Or is it just that technology has made copying easier?



≡ I would just like to suggest that the **real issue is in the nature of the assignments being made**. If the assignment facilitates regurgitation and does not require interpretation of the information gathered then that is what the finished product will reflect. **If the student is asked to "do a report on a capitol city" they will go to a web page and copy and paste what they find**. If on the other hand the assignment asks the student to identify shared common attributes of capitol cities they can not just go to one cite and copy and paste. **They have to interact with the information in a more meaningful way, generating their own understanding.**



≡ It seems to me what needs to change is the nature of the assignments being made. If the assignment asks the student to interact with the information in some way, to identify a relationship or pattern, draw a conclusion, make a generalization, inference or prediction, etc. rather than just collect it and give it back **a lot of the problems would disappear because there would not be a resource from which to copy and paste. Students would have to do some thinking of their own and generate the content of the final product.**



≡ Moving in this direction requires changes in **the mindset of current classroom teachers** as well as methods teachers responsible for training future teachers. Not an easy task but a necessary one.



≡ I don't think using, and even teaching, cut 'n paste is a direct lead to plagiarism. It can be taught as an organizational tool and as a /21st century version of the dreaded 3x5. C 'n P notes and cites stored by Topic or by date. And ready to incorporate into a working draft. A small, but practical, advantage is being able to print out the notes file to hand in before draft. A lot easier for the teacher handle than bundles of 3x5s and no rubber bands to break (or shoot). And if it is 'handed in' in files, **the citations can hot-link to the original material**. It would be pretty easy to note where quotes material isn't noted as a quote.



≡ While you certainly can rip an entire song or CD, you can also take a 30 sec clip for a powerpoint presentation. It is just teaching the tools and techniques needed. **Students should be adept at copy/cut and paste as an editing and organizing tool. Especially as more research is on-line (with databases, encyclopedias, and on-line texts) it makes sense to teach the full capabilities of the medium.**



≡ Then we took passages from books practiced plagiarizing them by directly copying the words and ideas. Next **we tried rephrasing them in an acceptable way, and finally we quoted/cited them properly** both within our sentence structure or in footnotes. The students actually enjoyed this exercise, especially when I gave them rather gruesome or whacky original passages. Students told me **no one had ever gone over the concept in such detail with them, and they didn't think some teachers really cared.**



≡ I applaud Sonya's efforts. However I really think that there are many **teachers who are using pre-Internet skills to teach research skills**. Couple that with the instructors who teach kids to "cut and paste" in an effort to save time and of course, paper. The result for many students can only be to do the easy thing and plagiarize.



I'm new to LM and new to school librarianship, but I wanted to share my thoughts on the plagiarism thread. I thank Doug for sharing the line from Brad Hokanson, "**The principal sin of plagiarism is not ethical, but cognitive.**" It holds true for me.



Yes plagiarism is theft and wrong is wrong. But yes there are circumstances where the less-than-holy may well be tempted to take a short cut to meet a need that is not critical to their lives. We are all guilty of "white lies". But **perhaps there is some place for debating why students find it necessary to plagiarize - that all-important grade/ score/ mark that seems to be the only outcome of learning that is valued.**



I have watched students whose teacher assigns many research papers/projects and books the computer lab and library computers (but not the "library per se") many times find web sites and cut-and-paste the information into a Word document, probably without the web citation. **They were taught to cut-and-paste to cut down on the pages and pages that they were printing from the web.** (They would just hit print for all sites they visited and printed 60 pages for one quotation.) This social studies teacher used to do very little face-to-face teaching and took her students to the lab just about every week for "research."



So I come home Thursday night at 7, tired from a rugged practice, and I've got about 4 hours before I need to crash. I have some choices what to do this evening: - spend all four hours researching and paraphrasing to write a paper assigned by Mr. Fuddy-Duddy on the **causes of the Crimean War which I know will never get out of Bloom's Taxonomy Skills basement**, but technically isn't plagiarism, and about which I could not possibly care less. (Wasn't this like way back with Vietnam and Desert Storm?)

- work on the more meaningful assignments in my other 5 classes.
- help my little brother with his science project.
- fill in at work for my best friend who needs the night off.

My choice _might be to take a "**short cut**" on the **Crimean War paper** which would allow me to do some things which **DO have meaning and value to me and others**. The "ethical choice" here is debatable in this rather silly and exaggerated scenario, but I think it one a lot of our students face every day. My dad used to say, "**A thing not worth doing, is not worth doing well.**" And while I do believe cheating and plagiarism are wrong, I also believe **there are cases in which it is understandable.**



If it is of interest, I have a pre-publication draft of an article that is supposed to be appearing in Phi Delta Kappan sometime this year available at <http://www.doug-johnson.com/dougwri/LPP.html> that offers **16 ways to design research projects that discourage plagiarism**. It puts Edmunson's ideas into realistic practice.



There are NO magic bullets that I've found in education - period. But there are strategies that we should exercise more fully. I hope the **methods that result in eliminating the cognitive sin of plagiarism are given at least as much attention as strategies that address its ethical sin.**



However, if her Library Media Specialist had had a conversation or, better, **in-service with the faculty about how to design projects with less chance of plagiarism opportunities, perhaps Mr. Fuddy-Duddy would have been less likely to have given that assignment.**



I don't think 'cut-and-paste' is really contributing to making plagiarism culturally acceptable. In a copying sense it is faster than the old way of retyping or handwriting from the encyclopedia article, but the big piece is deciding to do that sort of action in the first place. That is, of course, assuming that a decision to copy involves thinking about the choice being made... That would be where developing **an academic culture advocating fair and honest use of resources and developing research activities that focus on building skills and involving transformatative thinking fits.**

Strategies for Creating Low Probability of Plagiarism Research Activities

The following ideas and concepts are summarized from articles posted on Doug Johnson's web site www.doug-johnson.com and from the article cited below. They are listed to provide teachers and librarians with **strategies for creating a new breed of research projects** that deliver real learning to students and have a low probability of plagiarism. Plagiarism creates many problems for teachers and librarians and obviously does not contribute to student learning. By integrating some of the ideas listed, their **energies will be invested in learning and student enthusiasm for research**, rather than in detection work and confrontation that aggravates administrators, parents, and students alike.

Johnson, Doug. **Plagiarism-Proofing Assignments.** Phi Delta Kappan, Vol. 85, No. 07 (March 2004).). Adapted from a chapter in the book *Teaching Right from Wrong in the Digital Age* (Linworth, 2003)

1. LPP projects have **clarity of purpose and expectations**. As an example, Science Fair students undertake **projects worth doing, not just busy work**. An understanding of the scientific method on how to form a hypothesis and how to collect supporting data through experimentation **and research** is clearly stated as the purpose for Science Fair projects. These projects teach **life-long and usable set of skills**.
2. LPP research projects **give students choices**. Now here is the important concept: If the purpose of the assignment is to teach the scientific method, **it doesn't make any difference what the topic is!** Dig down and look at the core concepts your research assignments are trying to teach, and **let the students pick a specific subject that interests them**.
3. LPP projects are **relevant to the student's life**. For today's students, World War Two and the Trojan War both just seem "a long time ago." So many times we ask our students to research important topics – environmental issues, historical issues, health issues - **but fail to help them make the vital connection of why the findings are important to themselves or the people in town in which they live**. The delightful "I-Search" techniques used by Macrorie (1998), Duncan and Lockhart (200) suggest that **"the topic should choose you."**
4. LPP projects ask students to write in a narrative (**or persuasive: why, why not, how, what if**) rather than an expository style (who, what, when, where).
5. LPP projects stress **higher level thinking skills and creativity**. Think how different the results of a science project are than a paper that **simply asks an "about" question**. Hey, Mike, write a research paper about ice. Boring! Instead brainstorm an original theory, design a means of testing it, and find ways to effectively communicate your findings. Suddenly we've moved up on Bloom's taxonomy from the knowledge and inference levels right to **application, analysis, synthesis, and evaluation. More fun and impossible to copy.**

6. LPP projects answer real questions. **Unfortunately, teachers rarely ask questions to which they do not believe they know the answer.** Sort of sad, really. Diminishing to the student; boring for the teacher. **Projects should be worth doing, not just busy work.**
7. LPP projects involve a variety of **information finding activities.** As library media specialists, teachers and parents, we are comfortable with our familiar old primary sources of reference books, magazine indexes, and trade books. Yet the answers to many personal, local, and timely questions cannot be found in them. They can provide excellent background information, but often we need to talk to experts, conduct surveys, design experiments, or look at other kinds of primary and secondary sources (**from the Internet and educational databases**) to get precise information that is meaningful to the individual.
8. LPP projects tend to be hands-on. Students are learning by doing, **not just listening.** Notice too, how many corollary skills may be practiced in engaging “research” projects: **writing skills, interviewing skills, photography skills, layout and design skills, speaking skills, (technology skills and the interpersonal skills of collaboration).**
9. LPP projects use **technology to spur creativity.** Whether for planning, for research, or for communication, many students find the **use of technology motivating.** The challenge of designing containers that make good productivity tools like graphic programs, desktop publishers, and web page construction kits **virtually the antithesis of copying another’s work.**
10. LPP projects use formats that use multiple senses. Scanned artifacts like ration coupons, medals, and old photographs stimulated those **students who may not be verbal learners.** Our ability to digitize and present information is no longer restricted to the written word but now can include **drawings, photos, sounds, music, animations and even movies.** All are formats that carry important and often unique information.
11. LPP projects are often **collaborative and produce results that are better than individual work.** Joint problem solving, assigning and accepting responsibility, and discovering and honoring individual talents helps create a synergy that results in better, more satisfying projects than students working alone could produce. Not every project needs to be a joint effort, **but real-world work environments increasingly stress teamwork.** Teamwork in school is not only more enjoyable, but leads to the **application of practical interpersonal skills as well – and a reduced chance of plagiarism!**
12. LPP projects have results that are shared with people who care and respond.. These kinds of activities (any audience beyond the teacher) are common in scouting, athletics, dramatics, 4-H, and music organizations. **Knowing others will be looking and may detect plagiarism helps reduce its likelihood (and motivates extra-effort).**
13. LPP projects are authentically assessed. Quality indicators like **rubrics and checklists** that are given to students when an assignment is made can help guide learning and keep guesswork to a minimum. As students become more sophisticated in the research process, they should be expected to choose or design their own “rules of quality,” **one of the indicators of a genuinely intrinsically motivated person.**
14. LPP projects are encouraged by adults who believe that given enough time, resources, and motivation, **all students are capable of original work.** Research and real-life success stories have shown that it’s not just the talented and gifted student who can make choices, solve problems creatively, and complete complex tasks.

Another great source of ideas for combating plagiarism in the Internet era is the book written by Lathrop and Foss: *Student Cheating and Plagiarism in the Internet Age: A Wake Up Call*. Englewood, CO: Libraries Unlimited, Inc. 2000

Judging the Level of Critical Thinking and the Learning Value of Research Activities

Level One: My research is about a broad topic. I can complete the assignment by using a general reference source such as an encyclopedia. I have no personal questions about the topic.

Example: My research is about an animal.

Level Two: My research answers a question that helps me narrow the focus of my search. This question may mean that I need to go to various sources to gather enough information to get a reliable answer. The conclusion of the research will ask me to give a supported answer to the question.

Example: What methods has my animal developed to help it survive?

Level Three: My research answers a question of personal relevance. To answer this question I may need to consult not just secondary sources such as magazines, newspapers, books or the Internet, but use primary sources of information such as original surveys, interviews, or source documents.

Example: What animal would be best for my family to adopt as a pet and why?

Level Four: My research answers a personal question about the topic, and contains information that may be of use to decision-makers as they make policy or distribute funds. The result of my research is a well-supported conclusion that contains a call for action on the part of an organization or government body. There will be a plan to distribute this information.

Example: How can our school help stop the growth in unwanted and abandoned animals in our community?

Higher-Order Thinking Level	<u>BLOOM'S TAXONOMY—Bloom, B. S. (1956)</u> <i>Critical Thinking Skills Demonstrated</i>
KNOWLEDGE <div style="border: 1px solid black; padding: 2px; display: inline-block;">Student Testing</div> <i>(Lowest Level)</i>	<ul style="list-style-type: none"> • observation and recall of information • knowledge of dates, events, places • knowledge of major ideas • mastery of subject matter <p><i>Question Cues:</i> list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.</p>
COMPREHENSION	<ul style="list-style-type: none"> • understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences <p><i>Question Cues:</i> summarize, describe, interpret, contrast, predict, associate, discuss, distinguish, estimate, differentiate, extend</p>
APPLICATION	<ul style="list-style-type: none"> • use information • use methods, concepts, theories in new situations • solve problems using required skills or knowledge <p><i>Questions Cues:</i> apply, demonstrate, calculate, complete, illustrate, solve, examine, modify, relate, classify, experiment, discover</p>
ANALYSIS <div style="border: 1px solid black; padding: 2px; display: inline-block;">Research Activities</div>	<ul style="list-style-type: none"> • seeing patterns • organization of parts • recognition of hidden meanings • identification of components <p><i>Question Cues:</i> analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer</p>
SYNTHESIS <div style="border: 1px solid black; padding: 2px; display: inline-block;">Research Activities</div>	<ul style="list-style-type: none"> • use old ideas to create new ones • generalize from given facts • relate knowledge from several areas • predict, draw conclusions <p><i>Question Cues:</i> combine, integrate, modify, rearrange, substitute, create, design, invent, what if?, compose, formulate, generalize</p>
EVALUATION <div style="border: 1px solid black; padding: 2px; display: inline-block;">Research Activities</div> (Highest Level)	<ul style="list-style-type: none"> • compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity <p><i>Question Cues:</i> assess, decide, rank, grade, test, measure, judge, recommend, explain, discriminate, support, conclude, summarize</p>

ProQuest Mini-Research Strategies and Models Help Students to Turn Information into Knowledge Using Critical Thinking

Researched information *only becomes knowledge* when it is used to make comparisons, to predict consequences, to evaluate effectiveness, to form connections, and is then communicated to an audience with a purpose.

Elementary School or Beginners (Who, What, When, Where?)

Expand Knowledge--Reports should be mostly factual, require one good source (usually an encyclopedia article), and be delivered in a **summarized** (extracting the most important information) or a **paraphrased** (synthesizing and restating the most important information) report of less than 100 words. Students should be encouraged to attach an appropriate picture or map to the report.

Middle School or Some Experience Researching (Who, What, When, Where, Which, How and Why?)

Students should be required to use 2 or 3 sources. Reports can be written, oral, or created by teams. Reports should be between 100 and 200 words. Encyclopedic information is appropriate as one source only if it supports the 2 strategies listed below:

- **Compare/Contrast, or Which Is Better?**—Students research two similar leaders, authors, artists, countries, works, ideas, etc. and show how they are both alike and/or how they are different.

Examples: Low fat or low carbohydrate diets; more government regulation or greater competition; The Bible and the Koran; classical or contemporary music; Abraham Lincoln and Franklin Delano Roosevelt; the Greeks and the Romans.

- **Critique**—Students research a popular idea, custom, tradition, modus operandi, belief, or trend, and provide a logical argument for revising, eliminating, or expanding it.

Examples: Eating eggs and red meat is bad for your heart; no pain, no gain in fitness training; the growing deficit will into bankruptcy; to succeed, all students should go to college; affirmative action laws lead to lowering of standards, over time.

High School or Experienced (Who, What, When, Where, Which, How, and Why/Why Not, What If?)

Students should be required to use 3 or 4 sources. Reports can be written (200 to 300 words), oral (3 to 4 minutes) or in teams. With appropriate technology and training, a PowerPoint presentation or Web page should also be encouraged. Reports should require a summary document attached as a bibliographic reference to provide authentication. Strategies for mini-research should include predicting, evaluating, and persuading.

- **Persuade**—Students research a controversial issue, select a position (or teachers could assign the position), and then create an argument to support their opinion.

Examples: Students should have a right to free education through college; professional athletes are paid too much money; same gender schooling results in higher achievement for both sexes; euthanasia should be permitted under appropriate controls; some illegal drugs should be legalized; the federal government should pass and enforce new gun control legislation.

- **Predict**—Given a recent event, discovery, law, or invention, predict what will happen in the near future. Given a past event or series of events, create a scenario that may occur in the near future.

Examples: Predict what will happen if nothing is done about global warming by the year 2009 and why; predict what impact genetic cloning will have on human health in 10 years and why; careers and jobs are changing rapidly: what jobs will be most in demand 10 years from now, and why? How will the Internet affect business, social life, or education? How will the International Space Station affect science, politics, and economics; how will the new Euro affect the economies of Europe?

- **Evaluate**—Given a recent (in the last 5 years) change in a law, political leader, rules and regulations, organizational structure, invention, or discovery, summarize and evaluate the progress that may have been made in society because of that change.

Examples: The passing of the NAFTA treaty; the creation of the Dept. of Homeland Security; the introduction of distance learning courses by major colleges; welfare reform; doing business on the Internet; the launch and repair of the Hubble telescope.

1. A single research topic can provide a **range** of mini-research activities that can be **tailored** to the **reading and learning levels** of students
2. The same collection of resources retrieved from a single search (or BookCart) can be used to answer a variety of research problems and issues
3. Higher-order thinking strategies are **derived from the scientific-based research** of Benjamin Bloom and ***Bloom's Taxonomy***
4. Bloom proposes and recent research proves that permanent learning only takes place when students **engage higher-order thinking skills (HOTS)** in their school activities

TOPIC: GLOBAL WARMING

KEYWORD SEARCH: causes of global warming

CRITICAL THINKING STRATEGY: See the list below

PROQUEST MODEL BOOKCART: Global Warming

Mini-Research Strategy

Essential Questions for This Topic

- | | |
|--------------------------|--|
| Expand: | What is global warming? (<i>look up and paraphrase facts – lowest level HOTS</i>) |
| Compare/Contrast: | How do today's climate patterns compare with past patterns to decide whether or not there really is global warming? (<i>intermediate level HOTS</i>) |
| Critique: | What actions by society and/or nature have contributed to global warming? (<i>intermediate level HOTS</i>) |
| Predict: | What will happen in the future if nothing is done to reverse global warming? (<i>higher-level HOTS</i>) |
| Persuade: | What must the U. S. and world governments regulate and create incentives for action to help to reverse global warming? (<i>higher-level HOTS</i>) |
| Evaluate: | How effective have the past actions taken by governments and/or business been in reducing global warming? (<i>highest level HOTS</i>) |

MINI-RESEARCH *FORMAL* MODEL REPORT FORMAT

(This is a Model for an Optional Cover Page)

UPPER DUBLIN HIGH SCHOOL

You may want to include a graphic image here

The Ethical Implications of Genetic Cloning

Student: Tammy Weisman

Science—Biology II

Teacher: Mr. Carl Janetka

February 24, 2007

THE ETHICAL IMPLICATIONS OF GENETIC CLONING

This is a model of the **formal report format** used for a mini-research report . It summarizes how the cloning of a sheep named Dolly, in Scotland, opens up a new world of ethical controversy as well as wonderful opportunities for mankind. (**Schmickel**) It requires the student to (1) Search *eLibrary* or eLibrary **BookCarts** to get relevant information, (2) browse each article to determine its significance to the mini-research Essential Questions for Critical Thinking, (3) save the significant articles in *My List*, (4) copy and paste citations and *significant information* to a separate *Draft Summary* document, (5) get approval of the Draft Summary from the teacher, and then (6) create a final report, using *in-text references*, that connect the student's report/presentation to the *Works Cited* and information from the *Draft Summary*.

The teacher's Essential Questions ensure that the student uses critical thinking in the mini-research process to solve problems or form reasoned opinions on engaging issues such as the one on Ethical Implications of Genetic Cloning. The teacher will also have to provide some guidance in Searching *eLibrary* with key words, or assign custom BookCart resources for the research. (**Hotz**)

Saving information to disk, school server, or emailing it through My List is recommended rather than printing each article. Printing wastes paper and ink, and wastes time in retyping and introducing errors for citations and other selected information included in the final report. For schools who have computer lab(s) and/or library computer access for students, saved articles can be browsed off-line, freeing computers that are on-line for more student research.

Students will copy and paste *significant essences of each article* and citations to a *Draft Summary* document. The teacher then conferences with the student using the Draft Summary to judge whether the student has enough relevant information to address the *Essential Questions* assigned for the report/presentation. The discussion may include creating an optional outline. The teacher would

sign these documents and expect them to be attached to the final report/presentation as validation to prevent plagiarism. **(Norris)** The finished report could be an individual or team report. Mini-research reports could also be presented as oral, PowerPoint, or Web pages depending on the skills and experience of the students.

Written reports would be approximately 200 words. Oral reports would be about 3 minutes. All reports would require citing 3 or 4 resources from the teacher signed Draft Summary. **(Will)**

Reports are shown in *double spacing* so that teachers can utilize this space *for comments* if they choose to make them. A separate evaluation model with rubrics is included in this guide.

This is a model of a high school level formal mini-research report of approximately 200 words, using 4 sources, with in-text references, and a *Draft Summary* document attached in place of a *Works Cited* listing. Shorter reports with 2 or 3 sources are more appropriate for middle school.

Procedures for the **FORMAL** Mini-Research Model

1. Each citation is **copied and pasted** from the original document in eLibrary format, **avoiding complex style** transformations and saving time. These documents can come from independent student searches or from teacher/librarian BookCarts.
2. Paragraphs of *essential information* from 3-4 documents are **copied and pasted** from the original documents and combined with the citation for each. Essential information should address any or all **essential questions either brainstormed or assigned by the teacher**.
3. This collection of essence information and works cited form the **Summary Document**. This demonstrates the student's critical reading skills in about two pages of information.
4. The teacher evaluates the *Summary Document* **before the report is written** to determine the relevancy and adequacy of the information gathered by the student and how it can be use to respond to the **essential questions**. If approved, the teacher signs the Summary Document.
5. This *Summary Document* is **attached to the final report** to serve as an **informal Works Cited** and to help the teacher validate that the report represent original thinking and is **not plagiarized**.

Summary Document Model -- Significant Information with Works Cited

Previewed by teacher and then attached to final report (instead of a formal Works Cited)—
Helps to prevent *plagiarism* and used *instead of note cards*

Source: By ROBERT LEE **HOTZ** and THOMAS H. MAUGH II, TIMES STAFF WRITERS
Biotech: the Revolution Is Already Underway Dolly the cloned sheep made headlines. Los Angeles Times
Sunday April 27, 1997 Home Edition Part A, Page 1 Type of Material: Non Dup; Main Story; Series;
Chronology Series: IN OUR OWN IMAGE: Life in a genetically engineered world. * First; in a series

(Work Cited is unformatted to save classroom time on mini-research projects, unlike term papers. Works Cited included are copy/pasted and underlined to distinguish them from the significant information summary)

In creating Dolly from a single adult ewe cell, researchers at Scotland's Roslin Institute crafted the latest living invention to mark the crossroads of science and human values. These experimental creations are more than laboratory curiosities. Indeed, the seeds of the new biology are being sown across millions of farm acres this year, and its fruits are appearing on supermarket shelves and in medicine cabinets in hundreds of thousands of homes. The biological revolution is altering--in ways that we have yet to recognize--our image of ourselves.

For many scientists, cloning offers an unprecedented opportunity to engineer new life forms more efficiently, to revive endangered species and to explore treatments for a host of human diseases. However, critics in the United States and around the world have argued that cloning oversteps the bounds of morality, offering humanity too much power to manipulate living things. And the prospect of cloning human beings, they say, is repugnant.

"I am wondering if it is not time to set some limits on science," said Lori Andrews of Chicago-Kent College of Law at the Illinois Institute of Technology, an authority on genetic engineering and reproductive technologies.

Source: Copyright © 1997, St. Louis Post-Dispatch George **Will**; Washington Post Writers Group, CLONING CREATES MORAL AMBIGUITIES, St. Louis Post-Dispatch, 27 Feb 1997, pp. 07B.

Now, what if the great given - a human being is the product of the union of a man and a woman - is no longer a given? The news from Scotland could have immense consequences for mankind's moral life - for thinking about "ought" propositions.

In his essay "Making Babies: The New Biology and the `Old' Morality" Kass noted that technological corollaries to the pill - babies without sex - involve not just new ways of beginning life but new ways of understanding and valuing life. Connections with parents, siblings and ancestors are integral to being human, although not to being a sheep. Can individuality, identity and dignity be severed from genetic distinctiveness, and from belief in a person's open future? When Hiroshima occasioned anxious talk about the dangers of physics, Einstein replied that the world was more apt to be destroyed by bad politics than bad physics. Dolly raises the stakes of biology, but also of philosophy.

Source: Copyright © 1997, St. Louis Post-Dispatch, Patrick **Norris**, A NEW EWE OR A NEW YOU?, St. Louis Post-Dispatch, 2 Mar 1997, pp. 03B.

If the technology to clone developed human beings were to become feasible, would we justify its use? Although cloning involves a replication of genetic material, it does not "duplicate" the person. Environment plays a substantial role in the development of our abilities and personalities. Nevertheless, our genes contribute significantly to our talents, appearance and temperament. Would it be worthwhile for us to clone people with

exceptional intelligence or artistic genius? Moreover, as a result of reproductive techniques like in vitro fertilization, many single individuals have already used donor sperm or eggs to pass on their genes.

An ethical response to this latest scientific discovery and its future uses must mediate between two extremes. Some people believe that any dabbling in genetics usurps a role reserved exclusively to God; that is, only God should play God. However, God has endowed human beings with intelligence, ingenuity and creativity for a purpose.

At first glance, sheep cloning offers significant potential benefits. The technology may offer a way to mass-produce drugs to treat diseases at a lower cost. Though other ethical issues are associated with cross-species transplants, cloning experiments may yield genetically engineered animal organs that can be transplanted into humans with less risk of rejection. Better livestock and more efficient food production may also result from Wilmut's discovery. The technology may even offer a way to save endangered species.

Source: Sharon Schmickle; Staff Writer, Cloning controversy // Cloned people? Senate panel tackles debate // The scientist who cloned a sheep and created a debate in the process says there's no reason, Star Tribune

It is recognized as the first clone from a mature mammal cell, something many scientists doubted was possible. The stunning announcement propelled Wilmut into a whirlwind of debate over the practical, legal and ethical implications of cloning. Within 10 days, bills were introduced in Congress to prohibit cloning humans and to outlaw federal funding on research in human cloning.

'Playing God' "Human beings are not God and we should therefore not try to play God," insisted Sen. Christopher Bond, R-Mo., author of one of the bills.

"They accused Galileo of playing God, too," retorted Sen. Tom Harkin, D-Iowa, referring to the 17th-century astronomer who was condemned for heresy for arguing that Earth and the other planets revolve around the sun. "This is a constant, common refrain down through the centuries that somehow we are playing God."

SHOULD STEM CELL RESEARCH WITH HUMAN EMBRYOS BE STOPPED?

Executive Summary—by Tammy Weisman (the written report)

Stem cell research with human embryos has the potential to develop breakthrough cures for a host of genetic diseases that kill millions of Americans and other people in foreign countries. Stem cells are basic cells that develop first in human embryos after fertilization. All other specialized cells in the human body evolve from stem cells by a process that is not fully understood today. By understanding this process, scientists could grow new organs and other specialized cells to replace damaged or diseased cells in human beings, and thereby prolong and extend the quality of their life?

Why would this research not be acceptable and even be supported by everyone? Those who oppose this research argue that it is immoral to use human embryos because in the research process you are destroying a potential human being. Others who support the research argue that by not engaging in research, we are allowing the destruction of existing human beings.

I support the right to do research on existing embryos and if necessary, to have new sources of voluntary donations to increase the supply. If research in our country is stopped, then it will continue in some other country that may not have the best interests of our citizens in mind.

History has shown that when major scientific discoveries have occurred, they are always challenged by religious groups who predict all sorts of dire consequences for humanity. History has also shown, that when these discoveries are adopted and managed well, human beings have always benefited. Many examples of this are second nature to us now: blood transfusions, organ transplantation, vaccination, etc.

Information that Addresses Standard Essential Question 1: What is stem cell research?

Source: Stem-cell research: Drawing the line; Anonymous; The Lancet 07-21-2001; Page: 163

Embryonic stem cells are pluripotent, meaning they are capable of developing into any cell type in the human body. Animal research suggests stem cells may some day provide a way to repair or replace diseased tissues and organs and make it possible to treat people with a wide variety of conditions, such as diabetes, Parkinson's disease, and Alzheimer's disease, for which we currently have no cure. Embryonic stem cells are harvested from three sources: aborted fetuses, so-called cadaveric stem cells; embryos left over from in-vitro fertilisation efforts, so-called discarded embryos; and embryos created in the laboratory solely for the purpose of producing stem cells, so-called research embryos.

Information that Addresses Standard Essential Question 2: Who Opposes this research and why?

Source: Stem-cell research: Drawing the line; Anonymous; The Lancet 07-21-2001; Page: 163

Opposition to the use of embryonic stem cells from any of these sources comes mainly from those who hold that human life begins at conception and that destroying an embryo at any stage of development is tantamount to infanticide.

Some stem cells, however, have also been isolated from adult tissues, and opponents of human embryonic stem-cell research argue that research should be limited to such cells. But the general view of scientists working in

this area is that adult stem cells, while they may one day prove useful for treatment, are simply not as versatile as their embryonic counterparts, because they are already partly differentiated.

Source: Defending cloning and stem cell research against faith-based curbs; Hull, Richard T; Flynn, Tom; Free Inquiry 01-01-2002; Page: 27

The report expressed the concern of conservatives that "society (and not only the embryos) will suffer irreversible moral harm by crossing the boundary that allows nascent human life routinely to be treated as a natural resource." This view turns on seeing embryos at their earliest stages as identical with humans that will, if those embryos are allowed to develop, clearly exist. This key belief, as well as the tactics of some of its proponents, deserves careful investigation. For, if it cannot stand up to nontheistic philosophical analysis, basing governmental policy on it crosses the boundary separating church and state.

Information that Addresses Standard Essential Question 3: Who supports this research and why?

Source: Stem-cell research: Drawing the line; Anonymous; The Lancet 07-21-2001; Page: 163

Advocates of embryonic stem-cell research hold that while embryos certainly deserve respect they are not yet fully human and that the good that may result from medical research studies with their cells justifies their use.

Source: Defending cloning and stem cell research against faith-based curbs; Hull, Richard T; Flynn, Tom; Free Inquiry 01-01-2002; Page: 27

For, if it cannot stand up to nontheistic philosophical analysis, basing governmental policy on it crosses the boundary separating church and state.

In 1997, the Council issued "A Declaration in Defense of Cloning and the Integrity of Scientific Research." Thirty-one leaders in biology, philosophy, ethics, and other fields signed this document, which defended the inherent moral licitness of biotechnologies including human cloning.

Source: Several G.O.P. Senators Back Money for Stem Cell Research; Pear, Robert; The New York Times; 06-19-2001; Page: A.18

Two of the senators, Orrin G. Hatch of Utah and Susan Collins of Maine, said such experiments could be conducted safely and ethically under guidelines adopted by the National Institutes of Health.

Senator Hatch, a foe of abortion, told Mr. Bush that research with embryonic stem cells The president's advisers on science and health policy, including Tommy G. Thompson, the secretary of health and human services, see immense potential value in research with embryonic stem cells. But Karl Rove and other political advisers worry that support for such research would alienate conservative voters, anti-abortion groups and the hierarchy of the Roman Catholic Church.

Source: Ethicist weighs in on stem cell research; Jim Buckell; The Australian; 04-09-2003; EDITION: 1

Dr Young said stem cell research was progressing rapidly and if opportunities to extend stem cell lines available for research did not expand in the US, companies such as Genron would consider shifting overseas.

Already it was developing proposals to shift work to Canada, Korea, China or Singapore, where restrictions were not so great.

Source: Cancer, Up Close and Personal; Golden, Carl; The New York Times; 03-30-2003; Page: 14

I, and others like me, understand the position of those who oppose stem cell research on the ground that it represents destruction of human life. To us, it represents saving lives. We are not eager to engage in an abstract argument, probably never to be settled, over when life actually begins; many of us are painfully aware of when life actually ends.

Procedures for the **INFORMAL** Mini-Research Model

6. Each citation is **copied and pasted** from the original document in eLibrary--CE format, avoiding complex style transformations and saving time. These documents can come from independent student searches or from teacher/librarian BookCarts.
7. Paragraphs of *essential information* from 3-4 documents are **copied and pasted** from the original documents and combined with the citation for each. Essential information should address any or all the **three essential questions which are designed with help from the teacher or may be included with the BookCart description**.
8. This **Summary Document** of three or four citations and essential information demonstrates the student's critical reading skills (about two pages of information).
9. The teacher evaluates the this *Summary Document* **before the written report** to determine the relevancy and adequacy of the information gathered by the student in response to the essential questions.
10. This *Summary Document* is attached to the final report to serve as an **informal bibliography** and to help validate that the report represent original thinking and is **not plagiarized**.
11. Each **final report** includes an original **Executive Summary** that states **the reasoned opinion** of the student, the three essential questions, the citation(s) and the supporting evidence from the *Summary Document*.

EVALUATION MODEL FOR MINI-RESEARCH REPORTS

Mini-research reports **are not term papers**. They need to be relatively easy to evaluate. For this reason, this model will focus mostly on the research process (and the inherent *higher-order thinking skills--HOTS*), not solely on the traditional criteria of correctness of the ideas, or the mechanics and format of the content. Critical thinking elements are shown in (***red bolded italicized text***). Teachers can create their own system by varying the **Worth** factor or by including additional criteria or excluding existing criteria. Use the model below as a guide, but keep it simple!

Recommended Evaluative Criteria	Worth	Score
1. The essential questions for research were clear, relevant, and purposeful as they related to the question/issue/problem assigned. (<i>Brainstorming</i>) OPTIONAL with INFORMAL model or when teacher assigns essential questions to save time..	10	8
2. The search results related to the essential questions were effective in accessing appropriate information. (<i>searching skills</i>)	5	5
3. The <i>Draft Summary</i> of the research results provided a variety of viewpoints and was relevant and sufficient to answer the essential questions in step 1. (<i>analyzing and organizing</i>)	20	15
4. The report/project included recommended citation formats for 3-4 sources summarized and approved in the <i>Draft Summary</i> (<i>organizing</i>)	5	5
5. The report/project used recommended format models correctly (<i>organizing</i>)	5	5
6 The report/project demonstrated a high level of use of correct language arts mechanics (<i>drafting and editing</i>)	10	8
7. The report/project answered the essential questions effectively (<i>analyzing</i>)	10	10
8. The report/project flowed from an attention-grabbing introduction to development of important details, to a conclusion based on facts/expert opinions presented in the details (<i>synthesizing</i>)	30	25
9. The report/project was both meaningful and interesting to others	5	5
Totals	100	86

***** APPENDIX *****

**Advantages of ProQuest Mini-Research Strategies and Models
vs. Traditional Term Papers**

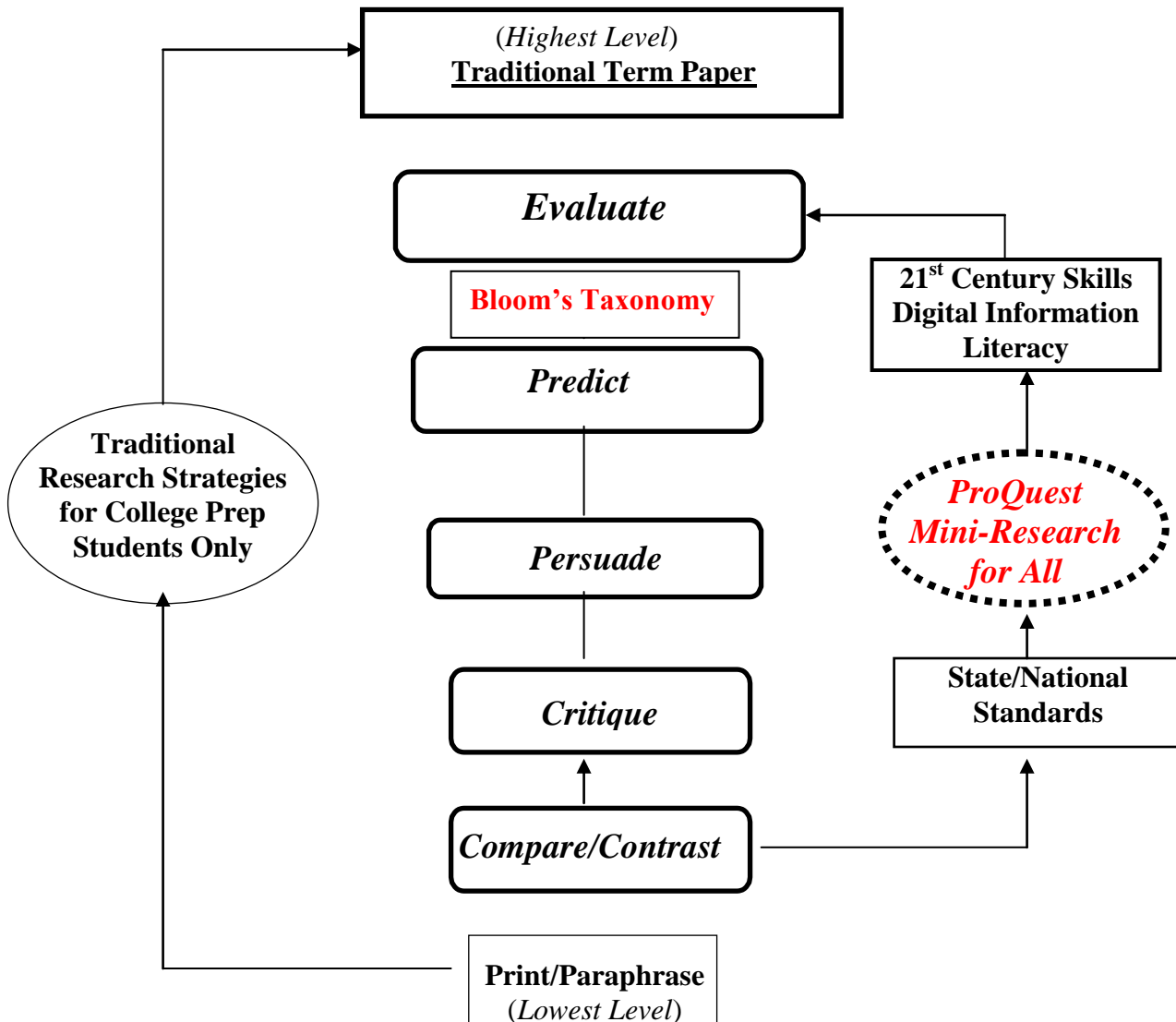
<i>Term Papers</i>	<i>Mini-Research Reports</i>
Formal—Written	Informal—Written, Oral, PowerPoint, Web Pages
Lengthy, Time Consuming and Infrequent	Brief, Three Class Periods, and More Frequent
Traditional, Scholarly, Often Stale Topics	Current, Relevant and Engaging Topic/Issues
Focus on College and College Bound	Focus on All Students--State Standards, Reading Levels, and Reading Connected to Writing Skills
Traditional Methods and Formats	Technology Enabled Methods and Formats
English and Social Studies	All Subjects and All Levels
Focus on Formats and Citations	Focus on Critical Thinking and Expression of Reasoned Opinion and Problem Solving. Auto Citations if Needed
Traditional and Stale Topics Prone to Plagiarism	Mini-Research Method and Engaging Issues BookCart Titles Help Prevent Plagiarism
Focus on Individual Effort, Print Output , and Teacher as Audience	Open to Collaboration with Team Reports, Multimedia and PowerPoint Presentations, Variety of Print Formats and Peer Audience
Students Generally Limited to Local Print Resources	Students Encouraged to Use a Variety of Media from Respected Sources
Emphasis on Note Cards and Manual Methods that Waste Time and Limit the Time for Writing and Presentation	Emphasis on Digital Methods to Save School Time for More Critical Thinking, Writing, and Presentation

ProQuest Mini-Research Process vs. Traditional Research

Advantages of Mini-Research Activities

1. Much **easier** for students to complete and teachers to assign than traditional research papers
2. Mini-research supported by **scientific-based research** on effective learning activities
3. Can be assigned in any subject area and extends the currency and value of textbooks
4. Shorter assignment can be assigned more frequently to reinforce **technology** and **information literacy** skills and support **state standards**
5. **Unique** mini-research strategies, ideas and models available **online** for teachers and librarians
6. Mini-research activities are based on **Bloom's Taxonomy** and HOTS
7. **Draft Summary** model and method **integrates technology** to help **prevent plagiarism**
8. Mini-research improves **21st Century** essential reading, writing, and critical thinking skills

Spectrum of Critical Thinking Skills Used in Research Activities



RENEWED EMPHASIS ON IMPORTANCE OF WRITING ACROSS THE CURRICULUM

Several new initiatives have occurred recently that recognize the renewed importance of **writing as an essential activity for student learning**. Writing is always a part of every mini-research activity.

- Research shows that the number of writing activities assigned in K-12 classroom has diminished and been replaced by increasing use of multiple choice assessments which require less teacher time and effort to grade.
- Research shows that narrative, expository, and persuasive writing require the use of higher-order thinking skills (HOTS). HOTS are essential for permanent learning vs. rote learning that is primarily temporary.
- Research shows that the most important factor for college success is the ability to write.

To motivate more writing activities across the curriculum because of their value

- The 2005 SAT will require writing samples that express student ideas on a variety of issues based on writing deficiencies discovered by an increasingly greater number of high school graduates.
- Colleges have recently put more emphasis on evaluating writing samples in the admissions process.
- The College Board revises the new SAT (2005) to include a major essay writing component to encourage more writing in the K-12 curriculum in all subjects
- The College Board indicates that strong writing skills are a reliable and essential predictor of college success

National Commission on Writing in America's School and Colleges activities in K-12

1. NCW – “Writing is essential to educational and career success”
2. NCW – “Writing allows students to “connect the dots” in their knowledge and is central to self-expression”
3. NCW – “Writing is how we teach students the complex skills of analysis, synthesis, and problem solving”
4. NCW – “Writing must become an important focus beginning with elementary school
5. NCW – “Assessment with only multiple-choice tests is not adequate”

ProQuest Comment: Every mini-research assignment **integrates writing** using critical thinking that results in the construction of original thought and reasoned opinion by the student. It stands to reason that the use of technology, the Internet, and library digital learning resources enable mini-research assignments to be **more frequent** than in the past when quality resources were limited and not as easily accessible.

Librarians can secure their future by embracing the challenge of the Internet and using their expertise to train teachers and students to use this flood on new information effectively. The new emphasis must be more on ways **to use information for learning**, rather than on searching for information.

A Summary of Scientific-Based Research (SBR) Supporting the Use of Inquiry-Based Teaching/Learning Strategies

The following collection of scientific-based research findings is intended to provide curriculum leaders in public and private K-12 schools with the motivation and evidence to integrate more inquiry-based teaching strategies into the curriculum. These strategies require student to seek and use relevant and authoritative information to solve problems and to make informed decisions based on “reasoned opinion.”

These mini-research activities encourage the use of reading, writing, and critical thinking (state standards and assessment skills) as the tools to explore relevant topics and issues that contribute to better understanding of academic content. The essential higher-order thinking skills developed will serve students well during school, in life, and in future careers. <http://www.proquestk12.com/lsm/pqelib/pdfs/SBReLibTeacherTraining.pdf>

These activities are ONLY effective in increasing student achievement when . . .

1. a variety of learning resources, both print and electronic, are available to students and teachers
2. teachers know how to structure these activities to engage student higher-order thinking skills (HOTS)
3. learning resources are customized to the needs and interests of the learners
4. Librarians are proactive in providing quality learning resources and creating customized collections of resources for teacher and student use

The benefits of inquiry-based learning are many including the lifelong ability of learning how to learn, information literacy, technology literacy, and deeper understanding of academic content. But this summary will focus **only** on the benefits that are currently recognized as **essential skills** and are tested on **state assessments**:

1. Reading, particularly *inferential reading*
2. Expository and persuasive writing
3. Critical thinking and problem solving

Each of the learning-related categories and the scientific research citations listed in this summary are applicable to the **unique content and features of eLibrary** when combined with **teacher training** in the **ProQuest mini-research process**. Working together, this combination of technology, learning resources, and proven pedagogy provides the tools for teachers to customize learning activities by state standards, and student interest and reading level. These are some of the strategies that scientific-based research has demonstrated will **increase student achievement**, especially in the three areas listed above.

PROQUEST COMMENT: Brain research shows that permanent learning only takes place when research activities are assigned **frequently enough** that students can exercise and develop the essential skills of critical reading, writing, higher-order thinking, and presenting ideas and opinions with a purpose. Brain research also shows that these activities must be related to **student interests about their world** and provide the opportunity for them to develop their own “reasoned opinions.” This desired learning is impossible to do for **all students** when schools depend on the “term paper” as their only research strategy.

The College Board has included a new **essay section** in the **new SAT** to encourage more writing in the curriculum based on their study showing the **poor writing skills of most college freshmen**.

A recent study of **Social Studies** teachers indicates that the **age of the term paper is rapidly disappearing** and **being replaced by shorter and more frequent** types of mini-research. Education Week – Nov. 20, 2002.

**eLibrary Tools & Content Plus the ProQuest Professional Development Model
Helps Librarians Meet the Challenges Google and 21st Century Skills for Students**

Essentials Needed for Librarians to Create an Inquiry-Based Learning Culture that Integrates Digital Information Literacy Across the Curriculum	Print Library	Google Surfing Alternative	eLibrary +BookCarts + Prof Dev
Library is always open and available when needed by students	No	Yes	Yes
Library has ample current learning resources and multimedia	No	Yes	Yes
Library has only authoritative, relevant, and kid-safe learning resources, not just websites	Yes	No	Yes
Librarian ensures school time is not wasted in finding and using relevant, authoritative, and decent K-12 appropriate resources	?	No	Yes
Library has ample collection of K-12 resources for the visual learner	?	Yes	Yes
Library has easy access to age-appropriate learning resources	?	No	Yes
Library has sufficient learning resources for all students to use simultaneously	No	Yes	Yes
Library resources are organized by appropriate reading levels	?	No	Yes
Librarian has created 100s of customized collections of learning resources on in-demand topics for student and teacher to use	?	No	Yes
Library resources include 8 media types including websites	?	No	Yes
Librarian provides digital lesson planning for teachers--BookCart	No	No	Yes
Librarian trains teachers to create mini-research activities that integrate essential questions for critical thinking	?	No	Yes
Librarian trains students in how to USE information for problem solving and decision making	?	No	Yes
Librarian trains teachers in how to create engaging assignments that integrate higher-order thinking skills with library resources	?	?	Yes
Librarian creates resources and models for students and teachers that motivate increased use of research activities	?	No	Yes
Librarian secures NCLB funding and other support for teacher professional development to increase teacher effectiveness in inquiry-based learning strategies	?	No	Yes
Librarian works with parents to support effective use of library resources for student research activities at home	?	No	Yes
Librarian correlates library resources and research activities to state standards	?	No	Yes
Librarian provides a variety of information to ensure a balanced viewpoints and minimal bias as outlined in state standards	Yes	No	Yes
Librarian organizes Internet websites by curriculum area and age appropriateness	?	No	Yes
TOTALS Yes = 2 points ? = 1 point, No = 0 points	18	9	40

GOOGLING FOR INFORMATION FOR RESEARCH ACTIVITIES ----- NOT FREE

School years average around 180 days. Student Time on Task for building essential literacy skills must not be sacrificed to time wasted surfing for relevant, authoritative, and K-12 learning resources.

Teacher time for working with students must not be sacrificed to supervision of student surfing for CIPA/AUP related problems and any ensuing parent and administrative issues. Compare the costs in time and aggravation.

PEW INTERNET STUDY AND STUDENT RESEARCH ASSIGNMENTS

Using the Internet is the norm for today's youth. A July '02 survey by the Pew Internet & American Life Project shows that three in five children under the age of 18—and more than **78% of children between the ages of 12 and 17—go online. Yet, little is known about student use of the Internet for schoolwork or about their attitudes towards the broader learning that can take place online.** Nor has there been much exploration of the consequences of those teenage views for educators, policy makers, and parents. **Key findings that impact on libraries and librarians include the following:**

1. **The Internet as virtual textbook and reference library.** Much like a school-issued textbook or a traditional library, students think of the Internet as the place to find primary and secondary source material for their reports, presentations, and projects.
2. **The Internet as virtual tutor and study shortcut.** Students think of the Internet as one way to receive instruction about material that interests them or about which they are confused. Others view the Internet as a way to complete their schoolwork as quickly and painlessly as possible, with minimal effort and minimal engagement. For some, this includes viewing the Internet as a mechanism to plagiarize material or otherwise cheat.
3. **The Internet as virtual study group.** Students think of the Internet as an important way to collaborate on project work with classmates, study for tests and quizzes, and trade class notes and observations.

Students report that there is a substantial disconnect between how they use the Internet for school and how they use the Internet during the school day and under teacher direction. For the most part, students' educational use of the Internet occurs **outside of the school day, outside of the school building, outside the direction of their teachers.** While there are a variety of pressures, concerns, and outright challenges in providing Internet access to teachers and students at school, students perceive this disconnect to be the result of several factors:

1. Even inside the most well connected schools, there is wide variation in teacher policies about Internet use by students in and for class. In individual schools, **teachers are the ones who choose whether to make assignments that require the use of the Internet** by their students, allow the use of the Internet (often as a **supplement to other sources and tools**), or even **forbid its use.**
2. While students relate examples of both **engaging and poor instructional uses of the Internet assigned by their teachers**, students say that **the not-so-engaging uses are the more typical of their assignments.** Students repeatedly told us that the quality of their Internet-based assignments was poor and uninspiring. **They want to be assigned more—and more engaging—Internet activities that are relevant to their lives.** Indeed, many students assert that this would significantly improve their attitude toward school and learning.

Students say they face several **roadblocks** when it comes to using the Internet at schools. In many cases, these roadblocks discourage them from using the Internet as much, or as creatively, as they would like.

1. Students want better **coordination of their out-of-school educational use of the Internet with classroom activities.** They argue that this could be the key to leveraging the power of the Internet for learning.
2. Students urge schools to increase significantly the *quality* of access to the Internet in schools.

3. Students believe that **professional development** and technical assistance for teachers are crucial for effective integration of the Internet into curricula.
4. Students maintain that schools should place priority on developing programs to teach keyboarding, **computer, and Internet literacy skills**.
5. Students urge that there should be continued effort to ensure that **high-quality online information to complete school assignments be freely available, easily accessible, and age-appropriate**.
6. Students think that teachers may be **reluctant** to assign Internet-based research activities because it would be **unfair** to students who do not have access at home.

ProQuest Comment: As the study indicates, most teachers do **not know how to create, manage, structure, and evaluate research**, including Internet-based assignments. This is the primary reason that more meaningful assignments are not made. Student use of the Internet is **mostly at the lower level of Bloom’s Taxonomy** simply because there is **little guidance** in how to use information for critical thinking and problem solving.

N2H2 Study of Internet Use by Students in Schools

This report presents disturbing implications related to the level of appropriate use of the Internet in schools. N2H2 studied the top 300 sites visited by number of page views and considers this data as being “representative” of typical use.

- 1. Instructional – Reference 17%**
2. News and Sports 16%
3. Business and Finance 15%
4. Commerce and E-Services 14%
5. Music, Games and Entertainment 13%
- 6. Portals and Search 13%**
7. Communities – Chat and Message Boards 12%

Categories 1 and 6 have the greatest probability of being connected with **curriculum and classroom** assignments. The other use categories suggest that students were **probably not** accessing information for curriculum use, **but for personal use instead**.

1. Haphazard searching for information is not a **standards-based learning activity**. Accessing relevant information quickly and **analyzing, synthesizing, and reporting** conclusions **is**.
2. The unique BookCart/QuizCart tool helps teachers and librarians **customize** learning resources for student learning, interest, and reading levels, saving time and ensuring quality for student projects and writing.
3. ProQuest has **500 model BookCarts** that are free to copy with an eLibrary subscription. http://www.proquestk12.com/productinfo/elibrary_bookcarts.shtml#4 Librarians can collaborate more effectively with teachers in creating research activities with correlated learning resources. http://www.proquestk12.com/productinfo/pdfs/BookCarts_Collaboration_Tool.pdf