

Action Research in Action: Doing It Better Next Time

Londonderry School District



Library Media and Technology Program

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Action Research: Doing It Better Next Time

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Contents:

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Action Research: What is it and why do we do it? (graphic “How it worked” and original proposal)

Londonderry School District

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Overview and Introduction

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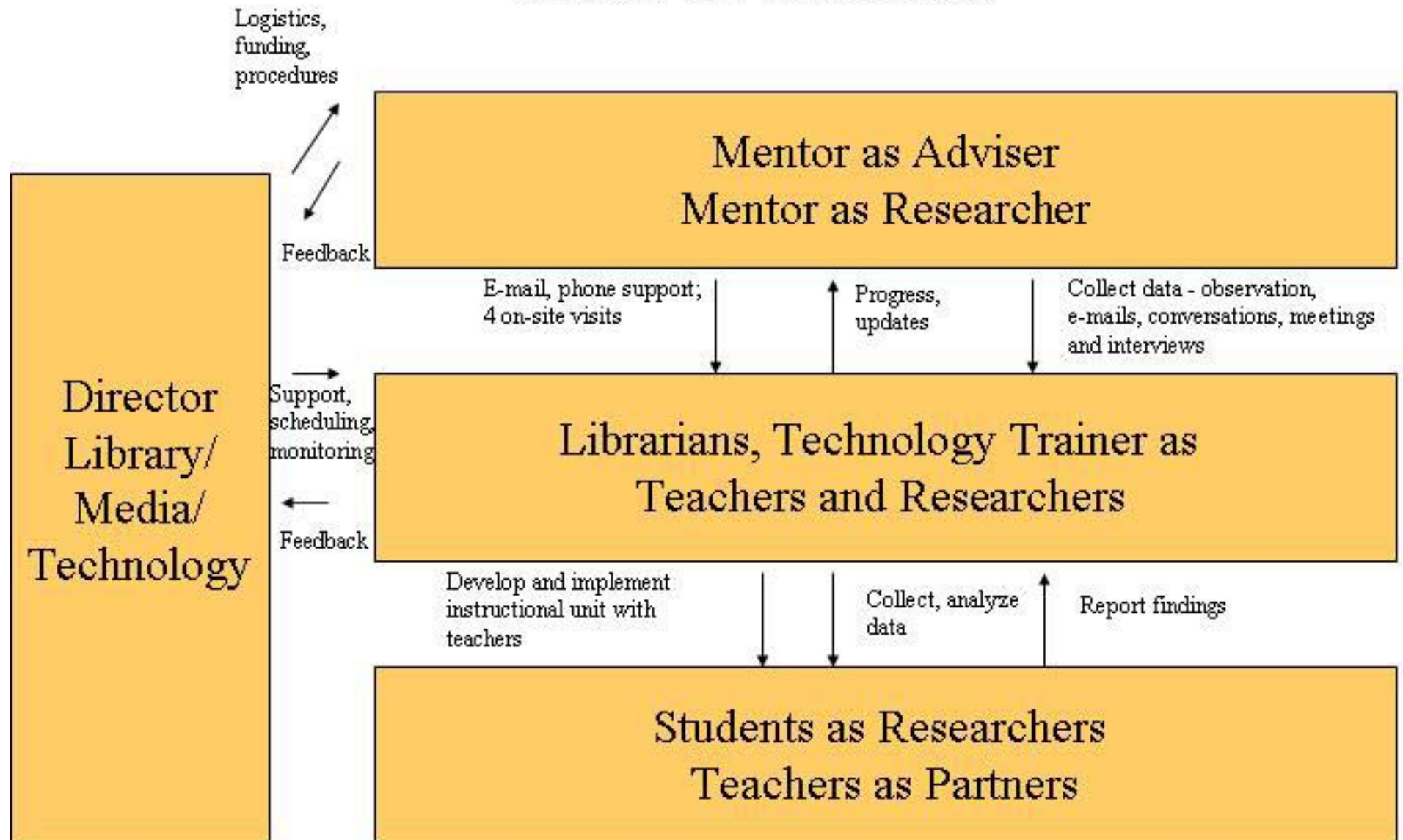
Higher Order Thinking
Electronic Resources

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Higher Order Thinking

How it worked



Proposal for an Action Research Project with the School Library Media Specialists of Londonderry Schools

The Project

Each school library media specialist will have the opportunity to work with a research mentor who is a practicing researcher trained in educational methods as well as school library information science. The focus of the research will be the effectiveness of interventions and support materials in the teaching of information literacy skills, including collaboration with teachers to design projects, the implementation of the project and the assessment of student learning.

Rationale for the Project

Evidence-based practice is accomplished through action research whereby the teacher collects data during the course of instruction for the purpose of improving instruction.

These data may be culled from interviews with students, questionnaires, observation and field notes, case studies and several other standard qualitative research methods. Distinct from the quantitative style of research, although numerical data may be collected and analyzed in qualitative studies, qualitative research probes why something happens, rather than documenting the frequency of occurrence, and involves smaller samples of participants for the purpose of gaining insight and depth of understanding. Rather than reporting results statistically, qualitative research is anecdotal, and therefore well-suited to studying the relationships among student achievement and teaching practice.

Action research helps the practitioner bridge the gap between theory and practice, and it provides feedback that is essential for revision of instructional practice.

Action research incorporates many of the qualities of an 'ideal' staff development program. It is individualized and can be used by a teacher at any developmental level. It assumes teachers are knowledgeable and gives them power to make decisions. It can be carried out collaboratively. It is an on-going process and for that reason can be more effective than a typical one day in-service presentation. One of the more significant qualities of action research is that it puts the teacher in the position of accepting more responsibility for her (his) own professional growth. (Wood, 1988, pp. 16-17)

Action research is a self-reflective process that helps to elevate the academic climate of a school as students see their teachers join them in doing research. Students see their teachers as learners who are willing to model the research process.

Little (1993) suggests six principles for professional development in schools that are addressed by action research, which suggest a rationale for using this process to improve instruction:

1. Offers meaningful intellectual, social, and emotional engagement with ideas, materials, and colleagues.
2. Takes explicit account of the contexts of teaching and the experience of teachers.
3. Offers support for informed dissent.
4. Places classroom practice in the larger contexts of school practice.
5. Prepares teachers (as well as students and parents) to employ the techniques and perspectives of inquiry.
6. Should involve governance that ensures a balance between the interests of individuals and the interests of the institution. (Little, 1993, pp. 138-139)

Action Research is well-suited to the teaching role of the school library media specialist (slms).

- Instruction in information literacy skills must hit the target each time the slms has the opportunity to teach these skills. School library media specialists can benefit from mentoring that advances their own research skills so that they can add rigor to the resource-based learning of their students who are often stuck in a “reporting” mode of doing research, rather than a rigorous exercise in inquiry.
- Best practice in library instruction has grown from the cognitive sciences, which seek to understand how we learn, resulting in research models that can be adapted to the diverse student needs. Revision and adaptation is a crucial element in successful library instruction.
- The school library media specialist has the opportunity to model reflective practice to colleagues as on a daily basis through collaboration and consultation. The resulting project-work that happens in libraries is an opportunity for all teachers to learn from each other and incorporate critical literacies, such as information-seeking and the use of technology, into their teaching. When the librarian shares action research with her colleagues, every collaboration becomes a staff development possibility.

Design of the Project

The role of the librarian-researcher is as follows:

1. Each school library media specialist will identify a project to be developed and implemented with teachers and students, as well as a research question related to instructional approaches involved in the project.
2. The slms will collect and analyze data during the course of the project.
3. The slms will present their research designs, methods and findings to each other and discuss the process.

The role of the research-mentor will:

1. offer workshops in action research methodology for collecting and analyzing data.
2. provide individual mentoring of librarians during the design and

implementation of their action research projects through e-mail and on-site visits.

3. provide readings and information relative to the theory, methodology, and best practice and specific to the instructional methods that are studied by each librarian.
4. lead the writing and publication of the research in a school library journal.

Timeline

The mentoring of three elementary, two middle, and three high school librarians will take place concurrently, to the extent possible, and will span four weeks to include workshops and individual mentoring. The professional article written by the participants will be accomplished, in part, during the project and will be completed within one month of the completion of student projects.

Evaluation

The research mentor will collect data on the action research support she provides from the librarians to assess the effectiveness of the mentoring and provide evidence for revision of her practice. These data will be included in the professional article authored by the librarians and research mentor.

References

Little, J.W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis*. 15(2), 129-152.

Wood, P. (1988, April). *Action research: A field perspective*. Paper presentation at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Submitted by:

Dr. Carol Gordon

Action Research: Doing It Better Next Time

In October of 2001, Londonderry Middle School Library Media Specialist **Cindy Turse** (now retired) and I had the opportunity to attend the 10th annual AASL Conference and Exhibition held in Indianapolis. It was there that we attended a session presented by **Dr. Carol Kuhlthau and Dr. Ross Todd**, Rutgers University, on the Research Process and Evidence-Based Practice that was truly transformational. As luck would have it, **Dr. Carol Gordon** was also in attendance and afterward, the three of us connected and began to talk aloud about our recognition of what was a missing ingredient in our program back in Londonderry. Although we were recipients of the *AASL School Library Media Program of the Year in 2000* (small school district), somehow, we intuitively sensed that we needed to take a next step. The “aha” moment generated by Dr. Kuhlthau and Dr. Todd of what “should be” was only reinforced by our conversation with Dr. Gordon and before we knew it, we were “sketching out” a possible plan of action, or rather of action research that just might help move our program to a dimension where it would truly be collaborative, authentic and help to ensure improved student achievement and success. In addition, this effort would help us to improve our practice, our resource collections and to become more reflective about instructional design, delivery and assessment.

My job was to go back home and marshal the resources – i.e. support from our always supportive superintendent, a funding mechanism (in this case Title V and II-A dollars), and an approval from the Londonderry School Board. After that, as **Lennie Ogden**, North School Library Media Specialist (retired), observed, we traveled the “bumpy road of action research.” But, we were sustained and guided in our effort by our knowledgeable and well-organized research mentor, Carol Gordon, and by support from one another. As a result, our practice is forever changed and over the past four years, this professional development model has explored questions such as:

- How can we get high schoolers off the Internet and into subscription databases?
- How do middle schoolers take notes and how can we teach this skill better?
- Can third graders reach higher order thinking skills through project work?

We have learned how to pose researchable questions and write proposals. Using diaries, questionnaires, interviews, and observation we have collected data that we shared with collaborating teachers, administrators, parents and the school board.

This package contains the artifacts and evidences of our travels and we hope that they may be of assistance to you in implementing your own action research agenda. Whatever that may be, I’m sure I speak for my colleagues in advising that you will find, with each step you take, there is always another needed in order to “do it better next time.”

Susan D. Ballard, Director

PROPOSAL FOR ACTION RESEARCH SUBMITTED BY: Paula Chessin & Lynne Jackson

1. Research question or hypothesis stated as a question:

Have students in the Health Education classes shown an increased understanding of web evaluation tools and applied this knowledge to their final research project?

2. Area of Investigation

Topic: Health Drug Project

Teacher collaborator: Rae/Brady/LaRotta

Timelines

Start: March 7, 2003

End: March 17, 2003

Description of the project or unit: Students will be required to research a drug category. They are responsible for discovering the effect of the drug, physical consequences it has on the body (both short and long term), its history, what it is derived from, addictive qualities, rehabilitation, if it had ever been used for a positive medical purpose and other relevant information (taken from teacher handout).

Our contribution to this unit consisted of:

1. Pre-Questionnaire on determining their knowledge of web site evaluation.
2. Power Point Presentation based on Web Evaluation Tools to 11 Health Education classes.
3. Day in the Curriculum Lab for 3 of the 11 classes to support information covered in the Power Point presentation. Each student responsible for filling out at least 4 website evaluation checklists on their assigned topic. We evaluated these suggested web sites that afternoon and compiled a list of reliable resources for all health education students to use in researching this unit.
4. While researching topics in the LMC students will fill out evaluation checklists.
5. The grade for the final project will include a completed website evaluation checklist for each web page cited in their bibliography.
6. Post-questionnaire distributed to all classes to compare with results of pre-questionnaire.

How will this investigation improve your practice?

Reinforcement of Information Literacy Skills, specifically the evaluation of information researched on the Internet.

3. Data Collection

- Pre and Post Questionnaires
- Project
- Checklist
- Observations

PROPOSAL FOR ACTION RESEARCH SUBMITTED BY: Paula Chessin & Lynne Jackson

4. Analysis

The three health education instructors were very responsive and open to our involvement with this collaborative project. They were enthusiastic about this unit and felt it would be a valuable learning experience for themselves as well as for the students.

Pre-questionnaire: Most students knew what the domain names stood for, but only had sketchy success in answering the other questions correctly. Post-questionnaire: improved success in answering questions correctly. Since questions were directly related to information provided in the PowerPoint presentation, the student results indicated that they were listening and learning. If we were to do this unit again, we would not distribute a pre-questionnaire. Instead, we would distribute the post-questionnaire as a quiz after the unit is complete.

The PowerPoint presentation provided a good opportunity to discuss and emphasize key points in evaluating web sites. The websites used to demonstrate bogus websites and bias websites was beneficial and instigated some good feedback from the students.

We found that the time spent in the curriculum lab compiling reliable websites was beneficial. The students found some excellent web sites for the bibliography, which gave them ownership in this project. If we do this project in the future, it would be worthwhile having a subset of the classes repeat this step in the curriculum lab.

Although most students used the website bibliography compiled by the students in the curriculum lab, many students were found to bypass this list and go indiscriminately into the Internet which sometimes led to locating unreliable web sites. This presented an opportunity for us to discuss some of the evaluation tools to these students on a one-on-one basis.

In our follow-up interviews with the health education teachers, the following comments were given:

- Assignment ran smoothly, better than previous assignments given
- The students were more focused while researching in the LMC
- Better quality PowerPoint presentations were submitted.
- Trouble opening up powerpoints saved on floppies or saved incorrectly on the network drive. (Next year, we need to spend some time with students going over correct method of saving)
- Noticed that most students used the website list. Greater use of the NIDA (National Institute of Drug Abuse), which is an excellent site.
- Were interested in repeating this unit next year. It would be best to present this unit each semester, in order to reach all freshmen.

Understanding bias in web sites proved to be the most difficult concept for the students. Bias can be obscure and takes experience to decipher. The other trouble spot was citing bibliographic information. As more teachers require a bibliography, this will allow for greater understanding of locating and correctly citing resources. We have discussed placing the website evaluation checklist on the back of the Internet Bibliography cards to encourage constant evaluation of web sites.

ACTION RESEARCH PROJECT

May 15, 2002
Gail March

RESEARCH QUESTION:

Would 9th grade students demonstrate improvement in evaluating, selecting and assembling information, as well as crediting sources, if provided with a choice of note-taking templates to assist in the research process?

SUMMARY:

Eighty-one ninth grade students in three World History class participated in a research project titled "Taking a Closer Look at Renaissance Art." Previous years' projects revealed students had difficulty putting ideas in their own words and crediting their sources of information. This problem of plagiarism, whether intentional or inadvertent, was the impetus for determining what interventions could improve students' skills in the research process. Students were offered a choice of four note-taking methods, to be submitted with the final project. The teacher modeled the use of two of the note-taking methods while analyzing several works of art. Students were then encouraged to use the note-taking method(s) of their choice for recording information about their artist and artwork. The Library Media Specialist evaluated the student projects against a rubric of information skills, and results were compared to the previous year's results. Students were surveyed to determine their perceptions of the project and their note-taking methods.

TEACHING UNIT:

Taking A Closer Look at Renaissance Art Barbara Marzik, Social Studies teacher

Class: 9th Grade World History; heterogeneous grouping

Product: Student choice --- poster, booklet, PowerPoint presentation, written report, etc.
(visual elements required)

Timeline: Feb. 4 – 20th (Three days in LMC)

Project Directions (from teacher's handout):

- Choose an artist from the Renaissance period to research
- Research the artist and three of the artist's works (only one can be one discussed in class)
- IN YOUR OWN WORDS, write a brief biography of the artist, including key events in his life, major accomplishments and his impact on the arts.
- Describe each of the works of art you have chosen. Tell about the subject, medium, the size and other details about the work.
- For each work, tell how it shows elements of Renaissance Humanism (classicism, religion, realism, anatomy, individualism, nature, youth and reason/learning.)
- Discuss your reaction to each work.
- In a paragraph, discuss which work is your favorite and why.

METHODS:

The teacher and library media specialist met to discuss improvements to the previous year's project. It was decided to design two templates for note-taking, and to demonstrate the use of these templates as part of the instructional process. The teacher used a graphic organizer style of template while analyzing a painting in class, using both data and overhead projectors. The library media specialist described and demonstrated the variety of sources available for project. The library media specialist discussed note-taking and the importance of putting information into the student's own words. Two different templates (sheet of paper style) for note-taking were provided, along with note cards and notepaper, with instructions for students to choose the one that suited their style.

Projects were scored against a rubric, which is part of the Londonderry School District's benchmark assessment process. Scores were compared to the scores earned by the previous year's classes. Students were surveyed at the end of the project to determine their perceptions of the project and whether the note-taking template was effective.

MAJOR FINDINGS:

More students completed the project in this study compared to overall freshman results from the previous year. (96% vs. 86%).

More students in this study met or exceeded the composite benchmarks compared to overall freshmen from the previous year. (59% vs. 55%)

Improvement was demonstrated in students' ability in search strategies and information selection (fewer students in "Does Not Meet" category), while ethical use showed no improvement, and synthesis actually declined.

The survey showed students displayed an indifferent attitude toward the research, even though much time was committed to it. Only half of the students reported that this project represented their best work, and there was quite a bit of resistance to the requirement of note-taking and reporting the sources used.

HOW THIS WILL CHANGE MY PRACTICE:

Younger high school students need structured guidance in the research process. Something as simple as a note-taking template can help students stay organized, and the emphasis on the process can help students avoid taking shortcuts that defeat the purpose of the project. Teachers often make assumptions about student skill levels, and the Library Media Specialist can provide supports that bridge the gap between expectations and actual capabilities. This research provides concrete data, and common discussion points, to bring to teachers on how to improve students' performance. Teachers can see how information skills affect their curriculums, and that projects must develop skills incrementally.

**Opportunities Call:
When presented with a choice in note-taking methodology, what will middle school students choose and why?**

**Ellen Romanowski and Cindy Turse
Library Media Specialists
Londonderry Middle School
Londonderry, NH**

Students at Londonderry Middle School have traditionally been taught to take notes on lined or unlined notecards requiring topics and sub-topics. Both Library Media Specialists are new to the LMC this year and have been slowly introducing change. During the first semester new notecards were formatted and printed requiring a question rather than a topic. Our prior experiences with other successful methods of recording notes, observations of student frustration, the introduction of "Inspiration" software for student use, and much professional reading prompted us to narrowly focus our action research on note-taking instruments.

For the purpose of our research, students were given the option of selecting one of the following to take notes for duration of their research: notecards, a research grid, information map, or divided page. Additionally, we developed a three part "rainbow sheet" for recording sources. All these changes are attempts to offer enough options for a diverse community of learners to enjoy success.

Our collaborating teacher, Mary Beth Kelly, provided us with five classes of sixth grade students researching individual inventors. She introduced the unit to her students, discussed goals, and helped develop questions to guide their pre-searches. Students were allowed the luxury of two reading days followed by a review of the "Trash or Treasure" method of taking notes. They reviewed and refined their questions before proceeding to take notes. Following the research in the LMC, students wrote a persuasive speech and created a visual display to "sell" the product to an audience.

Data for this project was collected using a questionnaire, a learning style survey, the teacher's grades, and a round-table discussion/reflection between the library media specialists and randomly selected students.

Plans for Inventor & Invention Project

Days 1-3

Discuss research process. Review questions and read, read, read - everything available on their inventor and invention.

Day 4

Review "Trash 'N' Treasure" notetaking

Introduce three new formats for taking notes and review bibliography cards. Ask students to choose one methodology for taking notes during this project.

Refine questions for research based on knowledge gained during the three days of reading.

Days 5-8

Read and take notes

Day 9

Students will complete a survey regarding their experiences in taking notes.

Students will take the "Learning Style Inventory" and discuss how their findings could help them in their studies. They will also correlate it with the method they used for taking notes.

Day 10

Some students will be involved in a circle discussion with us (2 students/methodology/class) while everyone else can continue working on their projects.

Name: _____ Date: _____

Social Studies, Mrs. Kelly, Zephyr Team, Period: _____

Research Questionnaire
Scale

1 ----- 2 ----- 3 ----- 4
Disagree Agree

1. The project instructions were clear.
1 2 3 4
2. I had enough time to do the project.
1 2 3 4
3. The Library Media Center resources were adequate.
1 2 3 4
4. Which note taking method did you use for this project? (May circle more than one answer, if appropriate.) Why? _____

Graphic Organizer Grid Organizer Note Cards Divided Paper
I have used this method before. _____
5. My note taking method helped me stay organized.
1 2 3 4
6. My note taking method helped me keep track of where I found my information.
1 2 3 4
7. I would use this method of taking notes for my next project.
1 2 3 4
8. Which method would you choose next time you need to take notes?
Why?
9. I enjoyed having a choice of note taking schemes.

1 2 3 4

Reflections

Students felt valued by the reflective process - they have credible views and often aren't asked - we tend to ask other professionals rather than the "practitioners"

We had hoped that student learning styles would have a positive correlation with their choice of notetaking instruments. However, learning styles appeared to have little to do with the selection of an instrument - could learning style be second in importance to risk aversion? If the students had been older and had more experienced taking notes, would they have been truer to their learning style?

Choice was important to the kids whether they strayed from notecards or continued with the "tried and true" method.

Mary Beth says that even though' her kids are at a lower level of achievement, the research projects were on a par with her past experience. She loved having her students use the "Inspiration" software to organize their thoughts after doing the research. They moved quickly and smoothly to a first draft.

Students enjoyed coming to the LMC and having time totally dedicated to research.

Next time we would like to help students develop researchable questions. The questions this year were developed in class and were not all geared to higher level thinking skills. All students seemed to use the same questions whether applicable or not. We also need more time to help students become better online researchers.

The "rainbow" sheet was a real plus!

Special ed. aides and teachers enthusiastically embraced the use of the information map, divided page, and the research grid. They also appreciated the "rainbow sheet".

Sidebar - Many other students are using the note taking instruments and we will continue to provide and refine these options for everyone. Also, we will create a one page sheet with two notecards copied on it as recommended by the students. Moving from cards to paper representations of cards is a win/win situation for students and the LMC - they can be double-side, are less easily lost, and they cut down on supply costs.

Summing Up the Action Research Project 2003

Name of Researcher(s): Lennie Ogden, North Londonderry Elementary School

What is your research question?

How well do students apply skills taught in class for the reading of non-fiction to the gathering of information for an independent research project?

Sub-topics: Can students identify and extract the pertinent information?

Can students synthesize the information and personalize it into a journal entry?

Summarize your research project in about 100 words in an abstract.

The Reading Teacher introduced the unit by providing class instruction and practice in reading non-fiction. She then read aloud passages from an actual astronaut's journal. The classroom teacher organized the students into "Shuttle Teams" to research different aspects of the science curriculum (space flight, sun, moon, satellites). Lists of questions for further research were created by students after reviewing a pre-selected book on the team specialization. Each student had a specific job to provide a perspective from which to research the material. They wrote journal entries incorporating information from their research, detailing their activities and impressions of the voyage. Each team presented its findings to the class in some format or other.

Why is this question important to your practice?

It doesn't make sense to help students develop information skills if you don't follow up and help them learn how to make use of them.

Support Materials: Appendix

Data Collection and Analysis: Project dragged on so long that analysis of data is still on-going.

What were your major findings?

There needs to be more teacher and librarian direction in the choice of topics for further research in order to:

- 1) ensure that the subject matter of the curriculum is adequately covered
- 2) ensure that information is available in the sources which are accessible to students

It would be nice to have a bit more of a schedule for library research so that students can truly learn more about different types of sources.

What did you learn that surprised you?

Somehow the plan of action on the part of the adults disintegrated to some extent and the project bogged down.

How will this project change or inform your practice?

I will continue to press for more cooperative planning for research projects.

1. What suggestions do you have for improving the way the action research project was structured, presented and implemented? (This question relates to what Carol can change in order to do this better next time.)

Problems were at our end, not Carol's.

2. If you could do your action research project over again, how would you do it differently? What changes would you make? Why? (This question relates to what you change in order to do this better next time.)

Try to keep more on track as originally planned:

- 1) Include instruction on note taking methodology and skills
- 2) Have the students spend more of their research time in the library itself where I can have a better handle on how they're doing and they will have more access to Internet sources.
- 3) Try and have more of a schedule so that we can finish the project in a reasonable time.

Incorporate Carol's suggestions for more challenging thinking and analysis on the part of the students.

3. Would you use the action research methods you learned again? Why or Why not?

Yes to the common planning, the Reflection Activity (not used this year), the Student Questionnaire, and the Interview.

Much as I liked having responsibility for one team, I think I could be more useful concentrating on the library research after the initial start-up. Each team would then also have the attention of each of the collaborator's specialties (editing, note-taking, subject expertise, etc). We could then return to the teams for the grand finale.

I got a big kick out of talking with each student individually and most of them seemed very willing and anxious to talk about their experience. I don't usually get to see the final project they put together from the information I help them locate. The only way to know what and how they are thinking is to listen.

4. What other question(s) would you like to explore related to library instruction in future Action Research studies?

What is the best way to reinforce skills covered in prior grade levels? How can I work them into the program that now exists in grades 4 and 5? It is a very gradual and arduous process to convert experienced teachers into true collaborators. The students proceed at a faster pace!

5. What other areas of your practice would you like to study?

I am in the middle of working with a grade 5 teacher on a total revision of an old-style States project, emphasizing higher order thinking skills rather than just information gathering.

6. If this Action Research Project helped you to plan and implement instruction, how did it help? If it didn't help please state why.

Spending so much time in the classroom lets me see how other aspects of the school's program works.

7. What was the most difficult aspect(s) of doing action research?

Working with the teacher/collaborators.

8. What were the most rewarding or helpful aspects of doing action research?

Working with the teacher collaborators.

APPENDIX: Support Documents

REFLECTION: How am I doing?

1. I am totally lost.
2. I am having trouble finding information.
3. I am having trouble thinking of what to put in my journal.
4. I am making progress, but I am still a bit confused.
5. I am finding the information I need.
6. I am able to write my journal pages.
7. I am revising my journal pages.
8. I have some finished journal pages.

PLAN of Action:

I am on Step(s) _____ in the above list.

I need to:

I need help with:

Interview Questions:

What do you think?

1. What did you like about the project?
2. What was the most difficult task you had? Why was it difficult?
3. What did you not like about the project? And why?
4. How was this project different from ones you have done before?
5. Did you feel more comfortable taking notes on non-fiction after having Mrs. Cullivan show you some strategies?
6. Do you see how you might use these skills the next time you have a research project?
7. What might you suggest to make this a better project for next year's students?

Student Questionnaire

Rate the following comments (with 1 being a NO and 4 being a YES and 2 and 3 in between)

1. I had enough time to do my research..
1 2 3 4
2. I understood what I was being asked to do.
1 2 3 4
3. I could get help when I needed it
1 2 3 4.
4. I could understand how to locate information in the various sources.
1 2 3 4
5. I was able to understand and read the information I found.
1 2 3 4
6. I was able to pick out the information I needed.
1 2 3 4
7. I was able to find enough information in the sources to help me write in my journal.
1 2 3 4

Evaluation Rubrics

Information Skills

	Inadequate	Adequate	Excellent
Notes (in general)	Copied word for word	Used own words, but in complete sentences	Wrote down key words and information only, using mostly own words
Choice of factual material recorded	Random selection of facts with no evidence of understanding which are more important	Facts show some understanding of more important information. Gathered from various parts of source	Information selected shows good grasp of important points. Good use of various parts of source
Sources	Less than three	Three	More than three

Journals

	Inadequate	Adequate	Excellent
Creativity	“Laundry list” of facts at best	Worked facts into narrative	Worked facts into narrative in clever way
Voice	Flat, lifeless, doesn’t make a lot of sense	Not writing in a very personal way, but gets info across	Personality shows through and gets ideas across
Organization	Ideas just tossed together, no sense of order	Tried, but order not always clear. Details out of place or superfluous	Details presented in order that makes sense, tied together, with beginning and end
Word choice	Vague, limited vocabulary	Ordinary words, clichés	Careful selection, clear message, colorful, fun to read
Sentence fluency	Hard to understand, choppy, confusing	Understandable, but not smooth	Sounds natural, flows smoothly from one idea to next
Writing conventions	So many errors, hard to understand what trying to say	Errors <u>sometimes</u> make it hard to understand	No glaring errors in spelling, punctuation or grammar
Use of research info which was gathered in Mission Log (Ideas and content)	Didn’t include anything pertinent to team’s task	Some pertinent to task, others superfluous	Pertinent and right amount of detail

"Penguin Consultants"
Penguin unit-Second Grade
Charlotte DeBell, South Londonderry Elementary School
Londonderry, NH

Research Question

This study was conducted to determine if second grade students are able to:

- demonstrate higher levels of thinking about the type of information needed;
- determine how to use information gathered during a research project;
- determine how Inspiration helps students demonstrate higher levels of thinking;
- determine what additional aspects of a research project may also help them to achieve higher level of thinking.

Brief Description of the Teaching Unit

A class research project concerning Antarctic penguins was jointly taught with a second grade teacher. The class was asked to gather and provide information to a zookeeper who is creating an area for Antarctic penguins in the zoo. Students worked as a class with Inspiration to brainstorm areas and type of information that could be gathered and to decide which areas would be most helpful to the zookeeper. They then worked in small groups to gather information in four library centers. As final projects the class developed dioramas depicting appropriate environmental conditions for the penguins, made life size penguins and created an educational handbook about penguins to be used at the zoo.

Data Collection Methods

- Student interviews
- Observations/Journal
- Students' classroom and library notes
- Inspiration maps

Analyzing the Data

Data was examined for indications that students demonstrated higher levels of thinking (on Bloom's Taxonomy scale) during the project. Student profile information and interview results were also examined for evidence of contributing factors to the ability to achieve higher levels of thinking. The overall project and the way it was conducted was also reviewed to see what other factors could have had an impact on students ability to demonstrate higher levels of thinking.

Findings

The study revealed that:

- second grade students are able to achieve a higher level of thinking, some to the synthesis level;
- multiple aspects of Inspiration were factors in it being a valuable tool in achieving these higher levels;
- additional factors also helped students achieve the higher levels.

How Findings Inform Practice

- Conduct student interviews
- Use data compiled to improve my teaching practice
- Advanced joint planning with teacher

Further Research

- Do students continue to progress up Bloom's Taxonomy Scale with further higher level of thinking projects?

Weather Action Research Project
Weather Unit-Fifth Grade
Charlotte DeBell, South Londonderry Elementary School
Londonderry, NH

Research Question

This study was conducted to determine if fifth grade students are able to:

- Effectively utilize multiple electronic media resources, e.g. OPAC, Internet websites, and World Book Online, in creating a HyperStudio presentation about meteorology?

Brief Description of the Teaching Unit

A class of 20 fifth grade students was asked to be researchers to help find out why water in Lake Wheresitgone has dropped so low. They studied various aspects of weather, e.g. water cycle, clouds, convection and transfer of energy as they relate to meteorology and to conclude why the water level dropped. As part of that process, students determined what information was needed and how to locate the information using reliable sources from the Internet, OPAC and WorldBook Online. Their final project was a Hyper Studio Presentation.

Data Collection Methods

- Pretest
- Observations/Journal
- Rubric
- Search strategy worksheet and printouts
- HyperStudio
- Student's written evaluation
- Bibliography card

Analyzing the Data

Pretests, student evaluations, rubrics, and print outs of searches from OPAC, WorldBook Online, and Internet were used to establish a pre-project baseline of the students' knowledge and what they had learned about searching and authority of electronic media sources during the project.

Findings

The study revealed that:

- Most or all of the information gathered was appropriate to topic.
- At the end of the project, students demonstrated an increased awareness of the need to use the "right" keyword to find the correct information.
- At the beginning of the project, students did not understand the background and authority of the Internet. Understanding increased during the project.
- There is a need to further review with intermediate classes the best ways to access information in a print source, i.e. Index, Table of Contents, Glossary.

How Findings Inform Practice

- Identified further teaching re: Information Literacy for fifth grade classes, e.g. keyword and authority lessons.
- Need to further review the best ways to access information in a print source, i.e. Index, Table of Contents, Glossary.

Further Research

- Do students increase searching effectiveness with continued lessons on refining of the search strategy?

Action Research
Astronaut Project - Grade 3
Matthew Thornton School, Londonderry, NH
February - March 2002

An astronaut project was developed by the media specialist and a team of third grade teachers to enhance the space theme used with the third grade curriculum. The objectives were to design a project that would have students demonstrate higher levels of thinking skills beyond the competency of knowledge, to collect and analyze data that would provide evidence of the project's successes and or weaknesses, and finally to modify the project.

Students were asked to pretend that they were an astronaut on a space mission. For three days of their mission they would write a diary. Using the software, Kidspiration, students created a web with "Living in Space" as the main idea. As students developed questions that they had about living in space, links were generated from the main ideas to these questions. The final questions to be answered and included in the diary were: how do astronauts sleep, exercise, have fun and relax, keep clean (especially how do they go to the bathroom), eat, and work. At this point the students were given note taking sheets on which they wrote each research question. The remainder of the time was spent reading books containing information about living in space. Day 2 was again just time for reading. On Day 3, 4, 5, and 6 the students gathered information about living in space from various resources, both print and non-print. Each day while working in small groups of 3-4 students, an adult instructed the students in navigating a web site, taking notes, using an index and table of contents and completing bibliography cards.

In the classroom, students wrote their diaries and completed comparison charts. The comparison charts were developed by the teachers using Kidspiration. Each chart was used to compare how an activity was performed on earth and in space. Students chose which activities to compare.

Groups of three to four students completed a questionnaire three days after completing the information gathering in the library.

The individual interviews were performed about ten to twelve days after the questionnaire. This was due to a vacation week and also to insure that all students had completed the diary and comparison sheets.

The respondent profile produced the following information:

Girls: 8 Boys: 6

Age: 8 and 9

Computer access at home: All students

Internet access at home: All, but one

Interesting to note was that although all, but one student had internet access at home, 5 students from the questionnaire replied that they weren't completely confident navigating a web site. Two students did express the fact that after the internet web site station they felt they understood better how to maneuver in a web site. Another two students mentioned as they answered the question about internet access at home, that although there was access at home they didn't use it. In answer to the question "What did you like about the project?" One of the most frequent answers was the "Internet Station." Two of the five students who felt unsure of using a web site were 2 of 4 students who answered that the Internet station was what they liked about the project.

Only one student who said that the diary was what they liked about the project also said it was the most difficult.