Exploring Research: Lessons Learned From Library Assessment

“A lot of people have “found” America. America wasn’t named after Columbus; America was named after Amerigo [Vespucci]. This is where I live and it’s important to me. All the America’s are named after him. It’s a big deal.”

Student #5

Researching with novice researchers is a lot like traveling with explorers. There’s the initial excitement as students start on the journey. Frustration is followed by desperation when students realize that digging for facts on this “research journey” is more difficult than they anticipated. There are “Eureka!” moments when information surfaces. The satisfaction at the end of the process is the same sense that Amerigo Vespucci must have felt at “discovering” the new world; that of a job well done.

On this research journey with a class of fifth graders, I was looking not for items of interest on famous explorers, but for how summative assessment could be used to tailor instruction, restructure an existing student assignments, and ultimately improve student learning. This information was gathered through the use of a variety of assessment tools inherent in student assignment and several designed specifically for this research effort. The lessons learned here will benefit other school librarians and teachers who, upon reflection, may realize the same positive impact in their own practice.
**Literature Review: Assessment in the School Library Media Center**

Assessment in its many and varied forms is a constant topic in educational journals. Paul Black and Dylan Williams published a concise literature review on classroom formative assessment in 1998. Notable in the field is the work of Grant Wiggins and subsequently, his collaboration with Jay McTighe. In 1998, Wiggins published *Educative Assessment: Designing Assessments to Inform and Improve Student Practice*. This book proposed to move assessment from being merely audit-based to improving student performance. In 2005, Wiggins and McTighe published *Understanding by Design* which expanded Wiggins’ work as it embraced developing curriculum and related assessments from the ending point – what are the desired results in student achievement – and working backwards.

Assessment, in both its simplest and most complex forms, is a standard part of action research as applied by teachers in their classrooms. It provides the data that allows teachers to change their practice. Joseph Fischer articulates the reasons many teachers engage in action research and key among them is the desire to improve their own teaching (36). The literature on teacher action research is voluminous, exploring a variety of issues and challenges. Teachers are actively engaged in fulfilling John Dewey’s sentiment that “each day of teaching ought to enable a teacher to revise and better in some respects the objectives aimed at in previous work … education is a mode of life, of action” (Hobson).

In the school library community measuring impact on student achievement has taken other forms. The studies conducted by Keith Curry Lance in a number of states correlates the presence of a library media center to student achievement (“Library”). The work of Ross J. Todd and Carol Kuhlthau measured how students specifically benefit from the school library in their Ohio Research Study (“Student”). David Loertscher has provided a summary of ongoing projects
and initiatives that link school libraries to student success in his 2005 article, “Keeping Up with the Research Linking School Library Programs to Achievement.”

The work of Violet Harada links two worlds by applying the theories and practice of effective classroom assessment to the school library program. Her work Assessing Learning: Librarians and Teachers as Partners published in 2005 with Joan Yoshina, provides school media specialists the tools necessary to measure the learning of their own students in their own program. In addition to detailing the basics of assessment, Harada and Yoshina demonstrate how to communicate successes to community stakeholders. Harada advances the concept of “evidence folders” as part of this process (Harada “Building”). Harada continues to make critical connections between the school library program and the 21st century learner in her 2008 collaboration with Allison Zmuda (Zmuda).

Harada’s work defines assessment as “the process of collecting, analyzing and reporting data.” She and Yoshina make critical distinctions between “summative” and “formative” assessments. Summative assessments are evaluative in nature and “place a value on the student’s performance.” In contrast, formative assessments are ongoing activities that provide “information about what the student is learning and how that learning is taking place” (1).

There is little documentation of action research as practiced by library media specialists. While Jody Howard and Su A. Eckhard urge action research for school library media specialists as the means to “program improvement and increased achievement for our students,” they proceed to describe problems of library administration rather than teaching (32). Assessment with the goal of improved teaching in the school library is a focus of work by librarians Sally Daniels and Valerie Edwards. Daniels utilized Harada and Yoshina’s book as she incorporated assessment tools into an existing fourth grade research project. Student reflection sheets,
administered three times throughout the project, confirmed that Daniels’ goals had been met. Edwards has detailed her work with senior high school students and the formative assessment tool she incorporated into a unit on index use. Library media specialists who participated in Harada’s Hawaii initiative provide other examples of action research (Harada “From”).

The Community, School, Class and Study Group

Lake Bluff is an upscale suburban community thirty miles north of Chicago. The local school district serves approximately one thousand students in grades K-8. Central Elementary School is home to 330 students in grades three, four and five. Over one-half of the fourth and fifth graders are combined into “multi-age” classrooms, with the balance in “traditional,” single-grade classroom settings.

Mrs. W.’s traditional fifth grade classroom is comprised of 23 students. She describes them as “average to lower” students as compared to other fifth grade classes. Six students receive support for learning and/or social issues (Weinberger). All students were invited to participate in this study.

While I am the library media specialist at this school, this research effort is conducted in my role as a graduate student at the University of Illinois. As such, this research project and all correspondence regarding student participation was subject to approval by the University of Illinois’ Institutional Review Board (IRB). Approval to conduct this research was received in October 2008. Under the conditions of the IRB, students were asked to volunteer and needed to indicate their willingness to participate by signing an assent form. The parents of the volunteers signed a consent form giving permission for their child to participate as well as approval for tape recording.
Fourteen of the students volunteered and obtained parental permission. This included seven boys and seven girls. Six of the students had completed three previous formal research projects and six had two. Two students were new to the school and had not had formal research assignments in the past. One student received academic support that applied to this project.

**The Student Assignment**

Complementing the fifth grade social studies curriculum *History Alive!*, the student assignment involved investigating the life of a famous explorer and presenting that learning in a formal paper. The paper included supporting documents created during the assignment. An outline of notes, a timeline of important events and a glossary were required components of the assignment. Students formally presented their work to their classmates.

Students conducted their research using a variety of print and online resources. Microsoft Word was the word processing software used to create the documents. Students used *Inspiration*, a visual learning tool from Inspiration Software, Inc., to build the outline for their final papers. *Timeliner* software from Tom Snyder Productions, Inc. was used to construct a timeline of events for an explorer’s life. Final presentations were made using Microsoft PowerPoint.

A variety of assessment tools were integrated into the process. Building on Harada and Yoshina’s definition of assessment, I incorporated Chappius’ view that while assessments are generally designated as one type or another [formative or summative], what is ultimately the deciding factor is how the results of an assessment are used (15). The data generating assessments utilized in this study are both formative and summative in their roles in the student assignment and are detailed as such below. My subsequent analysis uses all data in a decidedly summative fashion as I examine current practices and student learning.
These formative assessments were included in the student assignment:

- pre, self and post note taking mechanics evaluation (included as Appendix One),
- note taking content assessment against the project outline (included as Appendix Two),
- teacher-student conferences, and
- a formal grading rubric for the assignment as a whole (included as Appendix Three).

Additional summative information was gained by assessing the students’ assignments with other tools. These activities included participation in two one-on-one discussions with me in my “investigator” role. The first discussion involved their note taking choices. Students selected three notes and answered the following questions:

- Why did you select this fact to discuss?
- Why did you decide to write this note down when you were working with the reference material?
- Where does this note fit into the overall Explorer Assignment?
- Why is this fact important to your research?

The second discussion involved the facts selected to be a part of their final paper. Students again selected three facts from their paper and answered the following questions:

- Why did you select this fact to discuss?
- How does this fact connect to your paper?
- Why is this fact important to your paper?

Other data collected from the students included an analysis of the distribution of the facts against the project outline and an examination of which source materials yielded those facts.

The student assignment, from selection of the explorer to presentation of results, took place over the twelve-week period between winter and spring breaks. Prior to starting the assignment, students reviewed the mechanics of note taking, identified appropriate content for notes, created sample bibliographies, explored potential source materials, and became acquainted with a variety of explorers and their accomplishments. In my role as the library media specialist,
I provided this instruction in conjunction with the classroom teacher as part of social studies and language arts activities.

The assignment began with a class brainstorming session on what students, in general, would like to learn about explorers. This resulted in the project outline included in this paper as Appendix Two. Students selected their own explorer to investigate subject to teacher approval. Only one student in the class could select a particular explorer. Other first week activities included an explanation of the assignment’s rubric (included in here as Appendix Three), instruction on the use of colored index cards that correlated to areas of the outline, cross-referencing of bibliographic information, completion of the pre-assessment note taking activity, and the identification of possible sources. Independently, students obtained a book on their explorer at the public library. Note taking began in the second week and extended for three to four more. Computer lab time was used in weeks five to seven for generation of an information web, importing of graphics, and instruction on specific features of the final reports such as page numbers, table of contents and works cited pages. For most students, writing of the formal paper began in week six. After revisions and the addition of supplemental materials the papers were completed in week ten. Work on PowerPoint presentations and the sharing of student learning filled the final two weeks of the assignment.
LESSONS LEARNED FROM LIBRARY ASSESSMENT

Lesson One: Practice Makes (Almost) Perfect

Note taking mechanics were examined at three different points in the assignment. The mechanics of note taking included six measures:

• Notes on topic
• One fact per note card
• Notes written in own words
• Correct colored card utilized for organization
• Notes included a cross reference to a source
• All sections of the project outline were included.

In my role as the library media specialist, I taught note taking mechanics in the four weeks prior to the start of the assignment. After the two-week winter break the pre-assessment exercise was administered. Students were given an encyclopedia article on a famous explorer and a stack of note cards. They were asked to spend ten minutes reading the article and making notes according to the procedures they had been taught. The cards were evaluated on four mechanics using the checklist (Appendix One). Categories evaluated included being “on topic,” noting one fact per card, using their own words, and citing sources. The checklist included “always,” “sometimes,” and “never” categories.

Thirteen of the fourteen study group members participated in the pre-assessment. All students took notes that were consistently on topic. Almost 70% of the students remembered to place one fact on a note card all of the time. The remainder disregarded this convention. Ten of the thirteen or 76.9% wrote their notes using their own words all of the time. Students struggled to remember to cite the source of their notes despite specific instructions given at the beginning of the exercise. In fact, ten of the thirteen students neglected it entirely. The inconsistent performance was attributed to the two-week layoff from classes. Prompted by the pre-
assessment results, the concepts of mechanics were reviewed with the class and specific coaching was given during one-on-one sessions.

Students conducted a self-assessment at the point they felt their note taking efforts were complete. This process resulted in students making corrections to their notes and searching for the correct citations prior to the formal evaluation. The formal evaluation indicated that all students consistently had notes that were on topic, were presented as one fact per note card, were correctly organized and written in their own words. Students were inconsistent in citing their sources and three students had not covered all the necessary categories of information.

<table>
<thead>
<tr>
<th>Summary</th>
<th>On topic</th>
<th>One fact</th>
<th>Well organized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>S</td>
<td>N</td>
</tr>
<tr>
<td>Pre-assessment</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Self Assessment</td>
<td>10</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>71.4%</td>
<td>28.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Teacher Assessment</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
**Implications for student learning**

Students made significant progress in the mechanics of note taking over the six weeks they concentrated on this task. The pre-assessment allowed for identification of areas needing review and for students who needed additional coaching. If the pre-assessment had not been conducted, assumptions would have been made that those skills were secure going into the formal research phase when, in fact, they were far from it.

Student learning can be improved by timing the initial skill instruction and the start of the assignment in such a way as to avoid the learning lags that occur with breaks in the school calendar. Continuing to utilize the pre-assessment will identify students who need additional coaching on note taking.
Lesson Two: Student Researchers Are Confident Researchers

The students participated in two rounds of interviews to discuss their note taking efforts. For each session, students selected three notes of interest to discuss. In my role as investigator, I classified the notes according to the following scale:

<table>
<thead>
<tr>
<th>Importance Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Critical to research</td>
</tr>
<tr>
<td>4</td>
<td>Detail of an important fact</td>
</tr>
<tr>
<td>3</td>
<td>Interesting information</td>
</tr>
<tr>
<td>2</td>
<td>Tangent</td>
</tr>
<tr>
<td>1</td>
<td>Not relevant</td>
</tr>
</tbody>
</table>

The focus of the first discussion was on why the selected notes were taken. Of the 42 notes, thirteen were of critical details and sixteen were supporting details. This indicates 69% of the notes discussed were important to the student’s research.

The second discussion concentrated on what notes were included in the final paper and why. Importance scale results were 24 of 42 notes being ranked as “critical” and ten as necessary “detail” for a total of 81%. This shows students selecting notes with a higher degree of overall importance to their projects.

In the first discussion, feedback was being sought on students’ ability to correctly organize their notes using a color-coded note card method. Nineteen of the 42 notes or 45% were specifically placed not just in the correct color category, but also with a sense where the note fell in the sequence of events. Twenty-three of the 42 notes or 55% were placed in a general category. No notes were left uncategorized.
In the second discussion, student feedback was sought on whether or not their original fact placement was retained as they constructed the final paper. For 35 of the 42 notes discussed, students were certain that the fact was located in the correct category on the colored card and that placement was appropriate for their final paper. Five times students thoughtfully reasoned a change to the final placement. In total, 95% of the notes discussed were incorporated in a meaningful way into the student’s final paper.

**Implications for student learning**

This sample of notes indicated that students were highly confident in their own abilities to select critical information and important details. Categorization decisions were ably made. Students showed foresight in the note taking and considered use in their final paper.

**Lesson Three: Every Fact Has a Story**

Noted children’s writer Candace Fleming observed that “every fact has a story” when discussing the non-fiction writing process (Fleming). That certainly held true in the discussions with the students. Student notes are indicated in **bold text** and are followed by the student’s explanatory comments.
Student #1 – Sir. Edmund Hillary

**Note 1**  
**Shipton did not want to use fancy equipment line - air tank forced out**  
Interesting because I didn't think someone would be forced out especially because they didn't use same equipment

**Note 2**  
**John Hunt invited take over Shipton job**  
This is important because John Hunt took over leader role. I didn't write it down at first because I didn't know who John Hunt was and later realized how important he was to the expedition. He decided everything for the expedition.

**Note 3**  
**Hunt must put together motivated only two men would go to top rest of men would support from the bottom**  
Hunt had to pick two men who were energized and motivated. Needed motivated people to reach the top. Five other camps supported from below. I thought this was a cool fact about the type of people they had to pick. I inferred that Hillary must have been motivated because he got picked.

Student #2 – James Lovell

**Note 1**  
**16 years old built rocket**  
This was important because he built a rocket. I think that he was inspired by this. There were pictures of him in the book with his dad and teachers building a rocket.

**Note 2**  
**Apollo 13 - 56 hours flight began oxygen tank explode**  
This was the reason Apollo 13 went wrong and how they had to fix it. It was the main topic of the paragraph. It included how they went about fixing the problem.

**Note 3**  
**Visited South Pole January 2000**  
I thought it was interesting because after all the missions he went on in space he went on to do other stuff. He kept up exploring. I thought it was especially cool that he went to visit the South Pole.
In the second round of discussions, students shared stories of pivotal points in the explorer’s life or expedition. Again, the notes are in **bold text**, with the students’ comments following.

Student #5 – Amerigo Vespucci

**Note 1**  **When he was a kid geography was interesting to him.**  
Geography jump-started Vespucci’s exploration. As a map-maker he liked physical features. This was probably why he explored -- he wanted to add physical features to his maps and enhance them. Without this interest in geography he wouldn't have done all his great things.

**Note 2**  **His uncle taught astronomy, geography, and cosmography.**  
This is important because without this schooling he would have just made maps. His uncle taught these things at school and he found his niche to be an explorer. I think he got the light bulb in his head to explore. He had connections for boats and other things needed for exploration.

**Note 3**  **In 1493 Amerigo was a merchant in Spain.**  
He was a merchant for the wealthy Medici family and this played an important role in his life. The Medici’s gave him items to sell and he made money and he found his niche. He could ask them later for money when he needed it to explore. It’s because of him knowing these people that allowed him to do his exploration.
Student #6 – Sally Ride

Note 1  Ride was the first woman for STS-2 to be capcom in 1981. She was the first woman in space and had so many "firsts" and this was one. It was really an accomplishment. I thought it was important to her life.

She retired in 1986 and is now a professor of physics at the University of San Diego, California. Because its important when she retired. Her whole life was educational and this combined space with education. It is important to include this fact because its her job after NASA and most of her later life.

When Sally entered her NASA career, there were thirty-four other trainees, five of the thirty-four trainees were women. I thought it was cool that there were 34 others and she was picked out of those. It shows how much work it took for her to become the 1st American woman in space.

Student #10 Sacagawea

Note 1  Sacagawea was a Shoshone Indian. Other facts all tie in… she goes from Shosohone to Minatare [tribe] and back. She was still little, only 12, when it happened. This fact starts off the exploring section with her meeting Charboneau and then through him, Lewis and Clark. This fact really starts her whole story off.

Another tribe, the Minatere captured Sacagawea while she was 12 in 1810. I thought it would be really hard for her to go back and forth between the Minatare and Shoshone tribes. The language was different. If she hadn't gotten captured, she wouldn't have met Lewis and Clark through Charboneau.

On August 13, 1805 Sacagawea and the men met the Shoshone tribe. This fact is important because it goes back to the Shoshone. It was the last big thing that happened to Sacagawea. It fits with how she saves the exploration. Because if they hadn't gone back to the Shoshone she wouldn't have saved the expedition. She died after that in 1812.
Students demonstrated an understanding of the chronological events in their explorers’ life often articulating the pivotal nature of those events. For example, Student #10’s observation that “If she [Sacagawea] hadn't gotten captured, she wouldn't have met Lewis and Clark through Charboneau” indicates an understanding that if it hadn’t been for certain life events, Sacagawea would not have been a part of the Lewis and Clark Expedition. Student #5 demonstrated a similar understanding in detailing Amerigo Vespucci’s connection to the wealthy Medici family and how that provided the necessary funding for his travels.

While the students were prolific oral storytellers, that storytelling did not transfer to the written paper. In the written format, students seemed constrained by the way they had conducted their note taking. Notes were converted to sentences and sentences were linked to each other to construct paragraphs. Student writing often consisted of the fact as it was written on the note card, with little to no embellishment. If the details of an event were not specifically written in the notes, it did not make it into the paper,

**Implications for student learning**

The current instruction forces students to concentrate on facts that conform to the outline. Student learning could be improved by rethinking the instruction method as well as note taking procedures. In the instruction method, modeling of note taking to incorporate details and to include facts of interest to the student is in order. In addition, instruction and modeling of converting facts to sentences as part of paragraph construction would be valuable for students.

The note taking procedures involve using color-coded note cards. The process of locating information and putting it in one’s own words is complicated enough for fifth graders. Researcher Melissa Gross in her work with imposed queries observed ‘students had trouble finding ‘answers’ when they had to search through a lot of text, when the resources did not use
the same terminology they were given in class, or if they had to use multiple resources because
each source only provided part of the needed information” (513). The additional step of color-
coding the information could be prohibiting students from freely gathering information and then
determining when and how it will be used in the final project. Student learning could be
improved by using white cards, allowing students to capture interesting information free from the
constraints of the outline. At a later time, students would determine the usefulness of the
information and determine its placement. This could result in more of the colorful “storytelling”
aspects to emerge in the final written product.

While these strategies would provide a stronger base for students to operate from in terms
of generating a written end product, consideration should be given to incorporating oral
storytelling as a project output. The oral component, possibly included with the PowerPoint
presentations, would give fifth graders an additional platform to showcase their learning.

**Lesson Four: Source Variety is the “Spice of Research”**

The source requirements for this assignment included use of a book, a print encyclopedia
and two websites. In my role as the school librarian, I provided access to print materials and a list
of book-marked web resources that had been vetted for content relevant to this assignment. As
noted earlier, students were also required to obtain a book from the public library. Print materials
were made available as the starting point for research, in part, to impress upon students the value
of the encyclopedia to gain an overall picture of one’s topic.

All of the students studied used a print resource as their first source with ten students
using the recommended encyclopedia as a starting point. Thirteen of the students selected print
for their second source with eight selecting a book. Of the 594 notes examined, the vast majority
(513 or 86%) were from print resources. Between books and encyclopedias, books accounted for 376 notes with 137 from encyclopedias.

When using print resources, student researchers were aware of and took notes on information presented through special “tools” in the non-fiction texts. In examining the notes selected by the study group, ten of the fourteen students used information from both the text and special text features. The features utilized included captions, timelines and text set off or highlighted by a “text box” or sidebar. This reinforced the value of instruction that highlighted the importance of ancillary material in non-fiction texts to the students.

With regards to Internet based sources, students consulted fifteen recommended and 17 non-recommended web sites. Recommended web sites had been evaluated on the basis of currency of information, credible and unbiased authorship, appropriateness for a student audience with regards to information content and reading level, and information that would apply
to one or more of the assignment outline topics. These vetted websites yielded an average of 3.13 notes per web site compared with two notes per web site for non-recommended sites. While students spent time independently researching the Internet, those who consulted the book-marked sites were rewarded more quickly for their efforts. Throughout the school year, the appropriateness of web site content is discussed with all fifth grade students and one pre-assignment class was devoted to scrutinizing various web sites for their potential contribution to the explorer assignment. However, independent student experiences determining the quality of online information are limited.

Before this data is construed as a manifesto for the use of print materials, the instruction of “encyclopedia first” and the lack of computer availability undoubtedly impacted this data. Mrs. W. suspected that a majority of notes would have been taken from the first two sources students consulted regardless of whether those sources were print or web-based (Weinberger).

**Implications for student learning**

Student learning will improve as students consult high quality sources for research. Whether print or web based is not as critical as the quality of information and the appropriateness of the reading level. In addition, improvement will be seen as students have access to laptop computers. At that time, the starting place for research will be an online encyclopedia in order to capitalize on the attractiveness of the web presentation and the overview presented by an encyclopedia.

**Lesson Five: Context is Important**

Midway through the note taking process, the class was asked to match their notes to the categories of the project outline. It was hoped that this assessment would function in a formative
way to help students decide how best to continue their search. Indeed, after this process a number of students from the class approached me, in my library media specialist role, to help them seek specific information on their explorer.

Students participating in this research project had a similar analysis of their notes made at the end of the project. Using this data in a summative manner indicated that students had few notes on the “why” component of the exploration. The six total facts in this component were from four total students. One student had three facts and three students had one note.

<table>
<thead>
<tr>
<th>Outline Category</th>
<th># of Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Life</strong></td>
<td></td>
</tr>
<tr>
<td>Birthplace and date</td>
<td>30</td>
</tr>
<tr>
<td>Family (parents, siblings)</td>
<td>41</td>
</tr>
<tr>
<td>Education</td>
<td>54</td>
</tr>
<tr>
<td>Childhood Interests</td>
<td>38</td>
</tr>
<tr>
<td>Marriage and family (if applicable)</td>
<td>7</td>
</tr>
<tr>
<td><strong>Exploration</strong></td>
<td></td>
</tr>
<tr>
<td>Where</td>
<td>35</td>
</tr>
<tr>
<td>When</td>
<td>35</td>
</tr>
<tr>
<td><strong>Why</strong></td>
<td>6</td>
</tr>
<tr>
<td>How</td>
<td>98</td>
</tr>
<tr>
<td>Findings</td>
<td>33</td>
</tr>
<tr>
<td>Interesting Facts</td>
<td>39</td>
</tr>
<tr>
<td><strong>Later Life</strong></td>
<td></td>
</tr>
<tr>
<td>Accomplishments, activities</td>
<td>47</td>
</tr>
<tr>
<td>Marriage and family</td>
<td>19</td>
</tr>
<tr>
<td>Date and place of death (if applicable)</td>
<td>17</td>
</tr>
<tr>
<td>Legacy</td>
<td>7</td>
</tr>
<tr>
<td><strong>Interesting Information</strong></td>
<td>84</td>
</tr>
</tbody>
</table>
While students had demonstrated in the discussion sessions their understanding of the chronological events for their explorer, this assessment revealed that there was little understanding of the explorer’s purpose or motivation for undertaking their journey. Whether this was readily apparent from the source materials or students were not savvy enough to recognize the important fact for what it was can be debated and would be an area of further exploration. Mrs. W. offered a possible explanation regarding the timing of the research project in the academic year. This project is completed in the winter term because of the greater availability of lab computers for both research and creation of the final project. It does not align with the teaching of the related social studies units. Those units, for the most part, are taught in the fall and it would be a stretch to expect students to independently make those curriculum connections. In addition, those explorers covered in the fall include those in the pre-1600s time period. Those students who select space explorers, for example, do not receive any contextual material in the fifth grade curriculum, relying instead on a fourth grade science unit on planets (Weinberger).

**Implications for student learning**

Student learning will improve when students appreciate the context of their explorer’s life and work. This context should be covered during teacher-student conferences to ensure students have a secure understanding of their explorer’s motivation and/or situation. These conferences would involve personal instruction by the teacher on historical context with referral to other sources for additional background information.
CONCLUSIONS

By looking at summative assessment as a whole, insights are gained for improving instruction and particular aspects of the student assignment. Through the summative assessments, it was noted that students made significant gains in the mechanics of note taking over the course of the assignment. Students demonstrated that they were confident and competent at identifying and extracting critical information about a person’s life. In addition, through their categorization of information they showed foresight in the application of that information to their final report.

The summative assessment tools provided information to help the classroom teacher and me, in my role as a library media specialist, to fine-tune the content of our instruction. The note taking mechanics pre-assessment should be retained as a valuable diagnostic tool. It allows for situation specific re-teaching and subsequent coaching of individual students. The data indicated that it is important to reinforce that “quality” information – in both print and online formats – is important to successful research. In addition to reviewing non-fiction print “tools,” it is worthwhile to review the other components of credible source material. While students evolved into capable note takers, note taking instruction needs to address how to include details of an event and yet still retain the integrity of one fact per note card. In addition, it would be valuable for students to see modeled the conversion of facts to a written paragraph. The summative assessment process revealed the lack of knowledge of context, or the “why” of an explorer’s mission. To address this, attention should be paid during teacher-student conferences to ensuring a student’s understanding of this critical element.

The summative assessment revealed the importance of the timing of the project within the ebb and flow of the school year. Past constraints of computer access will no longer be an
issue for these students and the flexibility of laptops will allow for a stronger curricular connection. This connection will be important in establishing the context for students as the project timing can be directly aligned with the social studies instruction.

The student assignment could be improved in several ways. While providing an outline allows beginning researchers to be organized, more flexibility to explore individual interests could enrich the assignment. The note taking procedures utilizing color-coded index cards provides another level of constraint on students. Changing the note taking process to white cards, encouraging students to record information of interest and later determining where in the outline it fits will increase the richness of student learning as well as the final report. Storytelling emerged as an important byproduct of the summative assessment process. Through the discussions with the study group, it was revealed that the oral presentation of material should include an opportunity to relate the stories learned through research. Not all fifth graders are capable of expressing the extent of their learning in a formal written paper. By appealing to other strengths, the true depth of their experience may be effectively shared. In the future, teaching strategies that take multiple intelligences into consideration will enrich the student learning experience.

**REFLECTION**

The role of the library media specialist is unique within the school community. In this case, it has resulted in what may be one of a few action research projects highlighting the involvement of the library media specialist as a collaborative partner in a pre-existing student assignment. The changes indicated by the summative assessment are changes not only to my practice but also to the practice of my collaborative partner.
Within this framework, I have worked to determine the impact that I directly have on student learning. I know that I am responsible for the accomplishments that these students demonstrated in note taking mechanics. The majority of the students have worked with me on the note taking process for three years and the initial instruction on these skills is mine. I have prepared them to be successful on this assignment.

Additionally, I have come to acknowledge that with the “we” of collaboration comes the “we” of student impact. The collaboration on content delivery and all aspects of assessment gives me ownership of the assignment and resulting student achievement. Together “we” were successful identifying opportunities to further improve student learning by examining the assignment and teaching practices through the lens of summative assessment.

When I started this project, I had no preconceived idea of what I would learn. I had no idea of what information would surface on my own “research journey.” Like many research projects, the information gathered in this process raises more questions of interest. Is there a difference between boys and girls in their approach to note taking? Does one gender pay more attention than the other to the conventions of note taking? Do boys use different sources than girls? Do boys prefer storytelling to formal writing? Do girls?

What about those student researchers who were on the fourth assignment versus their first? Intuitively, one concludes that the more experienced researchers would be more comfortable with note taking. More experienced researchers should be more comfortable with the mechanics of note taking, highlight more important data, and use more non-fiction “tools” to gather their information. Is that actually the case?

What about student feedback? While using assessment in a summative manner provides valuable information to teachers about the project design, their teaching methods and overall
student learning, it doesn’t address the formative needs of students. Which of the assessment tools used for formative means was more helpful to the student? Which assessment tool helped them focus their research and stay on task with the demands of the project? What assessment tool made a difference to the students from their perspective?

These questions provide the map for subsequent “research journeys.” Let us begin our travels; exploring new ways of using assessment to gain knowledge of student learning and the teaching process.
## APPENDIX ONE

### Note taking Checklist

Name: ________________________   Teacher: ___________________

<table>
<thead>
<tr>
<th>My notes should be:</th>
<th>This means:</th>
<th>Have I done this?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>▪ Always</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Sometimes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Never</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Related to My Explorer</th>
<th>My notes are about my explorer.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>One Fact</td>
<td>My notes have one fact on each card.</td>
<td></td>
</tr>
<tr>
<td>Well Organized</td>
<td>I have used the correct colored card to record my information.</td>
<td></td>
</tr>
<tr>
<td>Meaningful to Me</td>
<td>My notes are written in my own words and I understand every word I have used.</td>
<td></td>
</tr>
<tr>
<td>From a Reliable Source</td>
<td>I have recorded the source of my information on the note card.</td>
<td></td>
</tr>
<tr>
<td>Complete</td>
<td>My notes cover all of the research topics on the outline.</td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX TWO
Explorer Report Outline

Name: ______________________________

I. Early Life (before exploration)
   a. Birthplace and date
   b. Family (parents, siblings)
   c. Education
   d. Childhood Interests
   e. Marriage and Family (if applicable)

II. Exploration
   a. Where
   b. When
   c. Why
   d. How
   e. Findings
   f. Interesting Facts

III. Later Life (after exploration)
    a. Accomplishments, activities
    b. Marriage and family
    c. Date and place of birth (if applicable)
    d. Legacy (places named after them, memorials, etc.)

IV. Interesting Information
    (interesting information that doesn’t fit elsewhere in the outline)
## APPENDIX THREE
### Rubric for Explorer Report

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note taking</td>
<td>Written in sentences, incorrect color coding</td>
<td>Uses own words, correct note taking form and color codes</td>
</tr>
<tr>
<td>Cover</td>
<td>Missing information (explorer name, date, your name, picture)</td>
<td>Has all necessary information</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>Missing information (Content, page number)</td>
<td>Sequentially organized, has all information</td>
</tr>
<tr>
<td>Graphics</td>
<td>Missing 1 or more graphics or pertinent captions</td>
<td>Included timeline, map, and picture with pertinent captions</td>
</tr>
<tr>
<td>Expository (content)</td>
<td>Missing big idea or supporting details</td>
<td>Included at least 3 big ideas with important supporting details.</td>
</tr>
<tr>
<td>Mechanics (spelling, grammar, mechanics)</td>
<td>Lacking capital letters, proper punctuation, and/or correct spelling</td>
<td>Used capital letters, punctuation, and spelling correctly</td>
</tr>
<tr>
<td>Corrections</td>
<td>Didn’t make all necessary corrections to final copy</td>
<td>Made all necessary corrections to final copy</td>
</tr>
<tr>
<td>Bibliography</td>
<td>Missing one or more resources (at least 1 encyclopedia, 1 book, 2 web sites)</td>
<td>Included all 4 necessary resources</td>
</tr>
<tr>
<td>Glossary</td>
<td>Missing words or incorrect definitions</td>
<td>Includes at least five words with correct definitions</td>
</tr>
</tbody>
</table>
WORKS CITED


< http://www.oelma.org/studentlearning/default.asp >.

Weinberger, Jill. Personal Interview. 27 March 2009.

