Curriculum reform efforts in schools around the world have focused on the importance of more rigorous assessment measures for student learning and the use of this data to improve teaching and learning conditions. The essential question for school library media specialists is how are we measuring student learning through the library?

The current *Information Power* guidelines (AASL & AECT, 1998) emphasize the building of partnerships to design and implement quality instruction. If this is the case, where is the evidence that library media specialists are indeed making a difference in our schools?

The most common statistics collected by library media specialists are quantifiable data such as the number of books circulated and the number of instructional sessions conducted. Such data are important; however, they do not begin to describe the tangible outcomes that are directly linked to local student success (Todd, 2003, online). In today’s schools where accountability for student learning extends to the entire educational community, library media specialists must be able to provide qualitative evidence of student performance in library-led instruction. This paper

- Describes action research as a means to collecting more rigorous and thoughtful qualitative evidence of actual student performance.
- Provides a case study of a school level effort to collect this type of data.
- Discusses the benefits of action research and the implications for moving beyond single teams to total schools embracing this approach to improvement.

**DEFINING ACTION RESEARCH**

Action research is deliberate, solution-oriented investigation that is group or personally owned and conducted. While the concept of action research can be traced back to the early works of Dewey in the 1920s and Kurt Lewin in the 1940s, it was Stephen Corey and others at Columbia’s Teachers College, who introduced the term action research to the educational community in 1949. Corey (1953) defined action research as the process through which educators study their own practice to solve their personal practical problems. The prevailing focus of action research is to expand the practitioner’s role as inquirer about teaching and learning through systematic school-based research (Calhoun, 1994; Copper, 1990). It is generally collaborative and includes characteristics of case study methodology (Dick, 2000; Belanger, 1992).

Action research is a combination of both action and research. It is based on the premise that practitioners can act as catalysts for each other’s learning and professional growth. By using the tools of inquiry to learn the craft of teaching, school professionals effectively model the practices that they wish their own students to demonstrate. The art of this research involves framing key questions, reviewing the literature, collecting and analyzing data, and communicating and using the findings.
University faculty can be critical partners in school-level action research initiatives. They contribute information on new practices, along with concepts and language from research that can help propel conversation. Teachers and library media specialists bring experience with students, knowledge of the limits imposed by curriculum frameworks, and craft knowledge of the daily rhythm and flow of life in schools. Through their joint study, university researchers and school practitioners develop deeper definitions of best practices.

HOW ACTION RESEARCH CONTRIBUTES TO EVIDENCE-BASED PRACTICE

Action research is a means to more systematically and rigorously examine one's teaching and its impact on student learning. The current school restructuring movement has site-based, shared decision-making at its core. School teams are now accountable for their programs and practices. It is not enough for teams merely to make decisions. They must make decisions that are data driven. Therefore, it is necessary for them to be much more deliberate in documenting and evaluating their efforts. Action research is one means towards that end.

WHAT ACTION RESEARCH LOOKS LIKE IN PRACTICE

At Waikele Elementary School in Hawaii, the entire school community has been engaged in a study of student-centered, inquiry-focused learning for the past five years. Working in teams, the faculty has implemented a project-based approach to learning. They have also established various study groups to examine specific issues related to a student-centered approach in their curriculum. The library media specialist, Debora Lum, has been a critical team member and leader in this school-wide effort. One of her most successful partnerships has been with Kathy Souza, a kindergarten teacher. Two years ago, Lum and Souza developed an action research initiative to document how kindergarten students conducted an inquiry-focused project. They invited me to join them as a university partner (Harada, Lum, & Souza, 2003).

Research questions

Lum and Souza devised the following focus for their action research project:

- How can we nurture inquiry in kindergartners?
- How do we measure students' progress and performance in an inquiry-focused project?
- What roles do we assume as teaching partners in inquiry learning?

What happened

The opportunity to initiate this project presented itself when several students in Souza's class discovered a strange bug on the school playground during recess. Souza captured the bug in a container and brought it back to the classroom. This generated tremendous excitement among the youngsters, who were curious and eager to learn more about the bug. They generated questions they wanted to answer about the insect and three of the students volunteered to be the bug investigators for the class. The trio decided that the place to start was the library media center so they made an appointment with Lum. They combed the library shelves together but were not successful in their efforts. At that point, Lum suggested that the team might contact a bug expert. They loved the idea. Souza helped them photograph the bug and they sent the digital image along with the following e-mail message to an entomologist at the local university:
Der Mr. Kumashiro:
We found a bug on the sidewalk at our school. It is red and black. It has 2 antennae and small squares on its back. Can you help us? We want to know if this bug is dangerous and if it pichas and what it can do. Can you tell us its name too?
From kaya and mark and westin

The youngsters were delighted when Kumashiro responded with vital facts regarding the insect. He informed them that it was an assassin bug. He explained that it ate small cockroaches and used its mouth like a sharp needle to pierce small insects and suck out their juices. He mentioned that it could also bite people. In addition, Lum borrowed a CD-ROM from another library that described the bug as a bloodsucking, cone-nosed insect. The students also eventually found a photo of the insect on the Internet.

Evidence collected

As part of their action research, Lum and Souza realized the importance of collecting evidence of students’ progress. Rather than quizzes and worksheets, they focused on assessing student artifacts and on documenting audience feedback. They also maintained anecdotal records as teacher and library media specialist. These logs provided critical data on their roles and their insights throughout the month-long project.

Examples of the evidence they collected included the following:
- Memory chart of information retrieved by the students
- Class-created web of the inquiry process
- Criteria to assess the video
- Data chart to log audience feedback
- Anecdotal records maintained by the library media specialist and teacher
I elaborate on each of these data collection methods below.

Memory chart of information retrieved by the students

As the investigative team collected their information from the entomologist and through the CD-ROM and the Internet, Lum and Souza helped the students create a memory chart. By recording this information, students were able to see their own progress in gathering facts. The teacher and library media specialist helped them organize the chart by using key headings (see Figure 1).

Figure 1. Memory Chart of Information Collected

<p>| | |
| | |</p>
<table>
<thead>
<tr>
<th>Key headings</th>
<th>What we found out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How we found the bug and what we did with it.</td>
<td>Found on sidewalk near playground. Mrs. Souza put bug in container.</td>
</tr>
<tr>
<td></td>
<td>Sent email to Mr. Kumashiro, bug expert.</td>
</tr>
<tr>
<td></td>
<td>Checked CD-Rom.</td>
</tr>
<tr>
<td></td>
<td>Looked on the Internet.</td>
</tr>
<tr>
<td>3. What we found out.</td>
<td>Name is assassin bug.</td>
</tr>
<tr>
<td></td>
<td>Sucks juice out of other insects with beak.</td>
</tr>
<tr>
<td></td>
<td>Can fly.</td>
</tr>
<tr>
<td></td>
<td>Can bite.</td>
</tr>
<tr>
<td></td>
<td>Can be anywhere at our school.</td>
</tr>
<tr>
<td>4. Advice to people.</td>
<td>If you see the bug, don’t pick it up. It can bite.</td>
</tr>
</tbody>
</table>

Class-created web of the inquiry process

Lum and Souza also wanted to find out how much of the inquiry process these kindergartners actually comprehended. Since the entire class had been closely following the investigation, Souza decided to have all of her students collaborate on a web or mind map that detailed this experience (see Figure 2). By using this visual presentation of the process, both instructors and students were able to clearly see the scope of the work involved. The instructors decided to retain this web and have the students continue to expand on it through the rest of the school year.

Figure 2. Web Representation of Inquiry Process
Criteria to assess the video performance

The content of the video had been captured on the memory chart (Figure 1). In addition, however, the students were encouraged to watch television news at home and Souza asked family members to suggest tips for how a good news caster performs on camera. Based on the suggestions, Souza, Lum, and the students devised the following criteria to assess the students’ performances:

- Get your information correct.
- Stand straight.
- Do not fool around.
- Speak loud and clear.
- Look at the camera.

The students used these criteria to critique their own and each other’s works at rehearsals.

Data chart to log audience feedback

The students were eager to find out what other people thought about their video. They were not really interested in a critique of their performance as much as they wanted to know whether others felt their message was an important one. To help gather this type of information, Souza devised a classroom data chart to log any feedback received during the ensuing semester. Along with the instructors, all the students in Souza’s class were encouraged to report any evidence of audience response to the video. Figure 3 is a partial example of the chart.

Figure 3. Sample of Data Chart of Audience Feedback

| Who reported this? | Who said what? | When was this reported? |
Anecdotal logs written by library media specialist and teacher

Being partners in a community of learners meant that Lum and Souza had to seek answers to the why and how of the learning experience. Through their reflection logs and conversations, they revealed the following insights:

- Children are natural learners, who are imbued with a sense of curiosity about the world around them. This curiosity led the kindergartners to hunt for explanations and to actively seek relationships with others that extended their understanding.
- Student-generated questions are central to the inquiry process. These questions framed what the children wanted or needed to know.
- Teaching paradigms change in this type of learning. Lum and Souza found themselves experimenting with more facilitative styles of interaction that focused on coaching rather than telling. They gave students time to investigate and to pose questions that helped them think about the steps being proposed. Where appropriate, they made suggestions, offered options, and raised further questions that stretched the students’ thinking and encouraged connections. Importantly, they invited students to make thoughtful choices.

Finally, Lum and Souza gained deeper insights into the synergy of collaborative curriculum planning. Their meetings ranged from short, informal debriefings to longer discussions in the mornings and after school. Souza brought to these sessions her experiences with the kindergarten curriculum and with appropriate instructional strategies, and her knowledge about the developing strengths and needs of her students. In turn, Lum shared her expertise in developing integrated curriculum, in teaching information literacy skills, and in accessing global resources. Together they explored standards in the curriculum and ways to differentiate learning.
Conclusion

In a truly dynamic learning environment, the process of inquiry is lived by both children and adults. Not only are all partners invited to make connections with their previous experiences but they are also challenged to go beyond them.

As the Waikele team discovered, participation in such a community of learners provokes conversations that stretch one's thinking and that promote self-initiated learning. Roles for the adults change. Evaluation and reflection become an ongoing and natural part of the learning cycle. Genuine engagement challenges all participants to explore their own practices so that inquiry truly emerges as the center of the learning quest (Harada, Lum, & Souza, 2003, pg. 71).

Without a doubt, teachers and library media specialists participating in action research become more reflective about their own practices. They attend more carefully to their methods, their perceptions and understandings, and their whole approach to the teaching process. Importantly, they think critically about how to develop the targets for rigorous teaching and learning and how to assess and evaluate the achievement of these outcomes.

While this paper has focused on how an individual team might engage in action research to strengthen evidence-based practice, an even more ambitious but vital challenge would be to have entire schools embrace a culture of professional inquiry (Groundwater-Smith, 2000). Hargreaves (1999) refers to this notion as schools becoming knowledge-creating organizations. Building such communities helps all members grow as they focus on student learning, peer collaboration, and reflective dialogue (Schlager & Fusco, 2003). Library media specialists are potentially powerful partners in developing practices that effectively demonstrate not only what students learn but also how they learn. By contributing to solid school evidence of student learning, library media specialists also build an undeniable case for the value of their services and programs.

References


